The politics of science: the establishment of the Australian Animal Health Laboratory

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THE POLITICS OF SCIENCE:

THE ESTABLISHMENT OF THE AUSTRALIAN ANIMAL HEALTH LABORATORY

A thesis submitted in fulfilment of the requirements
for the award of the degree of:

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Decisions by governments involving the funding and application of science and technology are increasing in complexity. Paradoxically, there is an increasing demand for greater public participation in these decisions. There are a number of reasons for this: the recognition that science and technology can have far-reaching implications and consequences and may involve considerable risks, high costs, and ethical, moral and environmental considerations. Furthermore, there has been a growing distrust, or at least a questioning, of the authority and neutrality of science and the credibility and trustworthiness of scientific institutions. The establishment of the Australian Animal Health Laboratory with its long, and at times highly controversial history, reflects these changing attitudes towards science and technology, and scientists and scientific institutions.

The idea of establishing a laboratory for the diagnosis of exotic animal diseases arose in veterinary circles around 1960. Part One of this thesis traces the development of this idea, into a proposal to construct a maximum security animal health laboratory for diagnosis, research, training, and vaccine production and testing, to be administered by CSIRO. The control of the laboratory and the functions it was to perform became the subject of bureaucratic competition and territorialism, and the process of negotiation, bargaining and consensus formation continued until 1974 when the Parliamentary Public Works Committee Inquiry was held. This detailed account of the decision-making processes within the bureaucracy reveals the political, non-scientific basis for many of the arguments and decisions.

By way of contrast, Part Two looks at the public arguments presented to the
PWC justifying the need for the laboratory and the need for it to perform the various functions. The structure and procedures of the PWC limited participation, and the proceedings were dominated by the proponents of the scheme. Furthermore, the underlying assumption of the rational model of decision-making required that rational, scientific arguments be constructed to justify the proposal, with no suggestion of the uncertainties, value-judgements and political factors involved in the process.

Part Three examines the public controversy which erupted over the decision to import live Foot-and-Mouth Disease virus into the laboratory in advance of an outbreak. As the debate continued and the scientific basis of the decision to import the virus was called into question, doubts were raised about the need for the laboratory. These doubts, fuelled by opposing expert views, eventually called into question the decision-making process and the role of scientists and scientific institutions in decision-making and their authority, credibility and trustworthiness.

Although not the initiators of the idea to establish the laboratory, CSIRO played an important role in the decision-making process. Once the strategic decision to establish this laboratory was taken, the issues were defined as ones requiring expert scientific consideration, and CSIRO was seen as having the necessary expertise. This was accepted unquestioningly by the PWC. However, during the course of the public debate, assumptions, value-judgements, uncertainties and political motives underlying the decisions were exposed, and as a result, the authority and credibility of CSIRO was undermined. The government's decision to ban the importation of live FMD virus for at least five years, against the recommendation of CSIRO, while defusing some of the conflict, further undermined CSIRO's authority. And it was not until the issue had been re-defined as one for expert scientific consideration, with the formation of the Fenner Committee inquiry, that some of this lost authority was regained.
This study documents the consensus and conflict, the negotiation and confrontation, and the post-hoc reconstruction of arguments, and reveals the complex and continual interplay between science and politics in the shaping of a major public decision.
DECLARATION:

This work has not been submitted for a degree to any other University or Institution.
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I also spoke to a number of people outside these organisations who had been either directly involved with the project or the public controversy. For giving
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On the home front, I would like to thank John McKelvey for helping in many ways, and my two sons, Ben and Tim, for waiting patiently for me to finish.
The decision to establish the Australian Animal Health Laboratory cannot be identified as a single decision taken at a particular time by a particular individual or group. Instead, its establishment was the product of many years of discussion and negotiation by a variety of actors representing several organisations and groups. The following study traces in detail this decision-making process. But while due attention is paid to all the actors involved, the main focus falls on CSIRO.

There are several reasons for this: first, although the initiative to establish a maximum security animal health laboratory did not originate from CSIRO, the role played by CSIRO in the decision-making process became increasingly important. Second, CSIRO was at the centre of the controversy over the decision to import live FMD virus. Third, it was my intention to examine the way scientists and scientific institutions behave when involved in political decision-making.

The task of detailing the activities of CSIRO and its individual scientists was made much easier because of its administrative organisation. CSIRO is made up of a number of Divisions, each with its own Chief. Each Chief communicates with the CSIRO Executive through a designated Executive member. Because the various laboratories are scattered throughout the country, much of this communication occurs by letter, and this provides valuable documentation. In contrast to this, government departments, such as the Department of Health and the Department of Primary Industry, which are centred in Canberra, leave little trace of the informal negotiating which occurs in corridors and over lunches. Furthermore, although each of these organisations has a single Head, the active involvement of the CSIRO Executive in decision-making provides an excellent source of information through Executive meeting minutes.
I first became interested in the Australian Animal Health Laboratory around the middle of 1983, (when Barry Jones and the ASTEC Report began to catch the public's attention), and used it as a case study for the thesis component of my M.A. degree. This earlier minor thesis provided a basis and launching point for my PhD. thesis. However, whilst the subject of both theses is the same, the PhD. thesis differs from the M.A. thesis in the following respects:

a) The M.A. thesis draws only on publicly available data, whereas the PhD. thesis uses a much wider range of archival sources and interviews. (see Bibliographical essay p.354.)

b) The PhD. thesis provides a much more comprehensive historical account; it extends further backward to examine the origins of the idea to establish the laboratory, and further forwards to the public controversy and its resolution.

c) The major focus of the M.A. thesis was on the PWC Inquiry: the PhD. thesis provides a new analysis of the PWC Inquiry, apart from the section on the cost-benefit analysis, the source of which is acknowledged.

d) The PhD. thesis provides a much richer, multi-level analysis of the involvement of various organisations, groups and individual actors.
"If you have built castles in the air, your work need not be lost; that is where they should be. Now put the foundations under them."

Thoreau.

Quoted by Mr. R.W. Gee, then Director of the Bureau of Animal Health, at the Victorian Veterinary Proceedings, 1975.

"Whether the money is approved by the Government or not seems to me to depend much more on the Government's confidence in the institution putting forward the plan and its understanding of the status and merit of those concerned."

Sir Frederick White, Chairman CSIRO, March 1962.

"I regret this has been a cautionary tale of government procrastination, political intrigue and scientific dishonesty..."

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CHAPTER I

INTRODUCTION

In Australia in 1981, a controversy erupted over the Government's intention to import live Foot-and-Mouth Disease (FMD) virus into the Australian Animal Health Laboratory (AAHL)* once construction and safety testing were completed. The discovery that this decision had been taken some months earlier, without consulting or informing primary producers, provoked a considerable outcry from primary producer groups as well as many scientists around the country. Although it was the discovery of the decision to import and use live FMD virus at AAHL which precipitated the public controversy, the debate moved quickly to a questioning of the appropriateness of establishing the laboratory, and the need for it to perform its proposed functions.

The idea of a maximum security animal health laboratory had been considered by the government since the 1960's, and its establishment recommended by the Parliamentary Public Works Committee in 1974; however, construction did not commence until 1978. In justifying the laboratory it had been argued that

* Throughout its history, the Australian Animal Health Laboratory has undergone a number of name changes. It has been known as:

- Maximum Security Laboratory (MSL),
- National Laboratory for Animal Diseases (NLAD),
- National Animal Health Laboratory (NAHL),
- Australian National Animal Health Laboratory (ANAHL) and finally,
- Australian Animal Health Laboratory (AAHL).

In general discussion I have referred to the laboratory by its current title, AAHL, however, since this name change only occurred in 1985, most of the historical material uses previous titles, and I have retained these for accuracy.
although Australia was fortunate in being free of many serious livestock diseases, the threat of an outbreak was ever present, and even increasing. Thus, the laboratory was portrayed as a means of protecting Australia's valuable livestock industry.

Foot-and-Mouth Disease is a viral animal disease, which although exotic to Australia, is especially feared by farmers. It has been argued that if an outbreak of the disease did occur in Australia, it would have a disastrous effect on primary producers in particular, and on the Australian economy in general, by destroying the meat and livestock export markets. However, this fear of FMD and the belief that importation of the live virus into AAHL posed a threat to the livestock industry does not by itself explain why the decision led to a fierce debate which questioned the whole $160m enterprise of constructing a maximum security animal health laboratory. The debate continued for three years. Even after the Government adopted the Australian Science and Technology Council (ASTEC) recommendation in 1983 that live FMD virus not be imported for at least five years, the debate over the laboratory itself continued until the Fenner Committee Report of 1984 finally resolved the issue.

It will be argued here that the public controversy, which became known as the "Live Virus Issue", was not just a reaction to the decision to import live Foot-and-Mouth Disease virus into AAHL, but reflected a questioning of the authority and legitimacy of the whole decision-making process and the credibility and trustworthiness of the institutions involved. It will be necessary therefore, to examine not only the decision to import live FMD virus into the laboratory, but also the history of the decision to establish the laboratory.

THE IMPORTANCE OF SCIENCE AND TECHNOLOGY.

It is widely recognised that science and technology have become
increasingly important in modern society. Technology, it has been argued "is a profound economic and social force which is a central and perhaps the most influential feature of our culture".\(^1\) Winner has stated that:

Technology in its various manifestations is a significant part of the human world. Its structures, processes and alterations enter into and become part of the structures, processes and alterations of human consciousness, society and politics.\(^2\)

The successful collaboration between science and government, which began essentially during World War II, and which led to increased government support of science, resulted in science and technology becoming institutionalised as a "formal tool for achieving government policy and corporate development".\(^3\) Science is no longer an individual pursuit supported by private means, but has become a professional, large-scale enterprise requiring large resources which can only be supplied by governments using public funds.\(^4\)

Lakoff has argued that:

... never before have the great world powers depended as they do now on the regular contributions of science and technology to war-making and defensive capacities\(^5\), and,

... never before have the economic as well as the social and ecological consequences of scientific discovery and technological innovation been so influential upon the fortunes of particular nations and upon the entire world system\(^6\).

Investment in science and technology has become seen as indispensable if a nation is to "prosper in peace, survive in war and command the respect of its neighbors".\(^7\) As a consequence, governments have become increasingly involved in the affairs of science and technology, and scientists and technologists have become increasingly important in furthering the goals of government. It is in this context of strategic competition that science policy developed.\(^8\) Scientific and technical activities were linked to national goals and became deliberately
integrated into the fabric of political, military, economic and social decisions.  

Salomon has distinguished between policy for science, which is concerned with providing an environment which fosters scientific and technical research, and policy through science, where the results of research are exploited for national objectives. Studies of science policy in the past have been dominated by two approaches; the first is a political science approach, where the structure of political institutions rather than the formation of policy has been examined; the second is a public administration approach, which concentrates on the machinery for the implementation of policies, accepting the policies themselves as given. As a result, questions concerning the character of the relations between science and politics have usually emerged as inseparable from fundamental normative questions about the proper principles of government and the collective life, the legitimacy or the inevitability of politics and the possibility of subordinating politics to rational principles.

Science policy studies in Australia have also focused largely on:

... the organisational frameworks that are appropriate for the management of research and development within specific institutional settings, and the allocation of scarce resources in the aggregate or between fields of scientific endeavour.

This analysis, however, is not concerned with these normative questions; instead it is concerned with investigating how science and politics interact, how decisions are actually made, and how authority for decisions is achieved.

THE DECISION MAKING PROCESS

The rationalist view of decision-making depicts it as an activity which passes through a logical sequence of steps such as:

a) preliminary appraisal of, or inquiry into a problem

b) identification of goals or objectives

c) canvassing of possible policies to achieve the goals, and
d) choice or decision.\textsuperscript{19}

Lindblom has proposed an alternative model of decision-making based on empirical evidence of how decisions are actually made. Rather than seeing deviations from the rational model as shortcomings in the decision making process, he questioned the validity of the model. He argued that the rational model tended to view policy making as if it were the product of one governing mind and that it failed "to evoke or suggest the distinctly political aspects of policy making, its apparent disorder and the consequent strikingly different ways in which policies emerge."\textsuperscript{20}

For Lindblom, politics is inevitable in decision making. Where the rational model assumes a given problem or issue, Lindblom has argued that issues have to be identified and formulated, and this in itself can generate a conflict of values and interest. Furthermore, most decision making deals with complex problems or issues of high uncertainty or ignorance. Limited cognitive capacity and inadequate information mean that all possible alternatives and consequences cannot be considered, thus the analysis is always incomplete. Finally, there is the difficulty of finding an agreed criteria for selecting goals and values.

Collingridge\textsuperscript{21} also attacks the justificationist or rational model, claiming it is only applicable to a very narrow class of decision problems where:

i) all states of the world can be identified

ii) all options can be identified

iii) all pay-offs are known

iv) all relevant data has been gathered and,

v) all interpretations of the data available are known.\textsuperscript{22}

The justificationist model calls for a synoptic view of the decision problem, but since most decisions are made under ignorance, they cannot be coped with by this model.

These criticisms of the rational model of decision making by Lindblom and
Collingridge do not imply that they believe decision making is purely arbitrary or irrational. Lindblom identifies a number of strategies which are used when dealing with complex decisions. Although these are often dismissed as irrational, he claims they are useful devices for stretching human analytical capacities. These strategies include:

a) "satisficing", rather than maximising which may be costly, time consuming or impossible,

b) "the next chance", where a policy that is not quite the right one is deliberately chosen, because it leaves open the possibility of doing better in the next step, rather than one which is on target but difficult to amend. Thus little mistakes are made to avoid big ones.

c) "feedback", where a problem is dealt with inconclusively to keep the next chance open when more is known.

d) "remediality", where if goals cannot be decided with precision, at least the state of affairs from which they want to escape can be specified.

e) "seriality", where policy making is open-ended and made up of endless nibbles.

f) "bottlenecks", which are broken as they arise rather than the impossible planning of everything to fit with everything else.

g) "incrementalism". Lindblom argues that what is feasible politically is policy only incrementally or marginally different from existing policy, and that incrementalism serves to:

i) concentrate policy-makers' analysis on familiar better known experience,

ii) sharply reduce the number of different alternative policies to be explored, and

iii) sharply reduce the number and complexity of factors to be analysed.

A central feature of Lindblom's strategy of incrementalism is the recognition of the fragmentation of the decision making process. Government is not seen as a single monolithic institution, but rather as a number of individuals, groups, and organisations with different aims, objectives and values. The problem then becomes one of coordinating the various findings and recommendations of these
groups. According to Lindblom, this cannot be achieved by a central decision maker, since it would still require a synoptic view of the issue. So in the absence of this central coordinator, decision making proceeds by what Lindblom calls "partisan mutual adjustment".

This can take a number of forms. These include partisan discussion or debate, negotiation involving mutual persuasion where it may be pointed out that the facts are different than assumed, or that support for a decision serves the others interests, or that opposition does not. Persuasion can also take the form of threats or promises exchanged, as well as deceit, propaganda, or appeals to kinship or friendship. Another strategy involves the creating and discharging of obligations, which sometimes require explicit negotiation, but which may also be tacit understandings, building a stock of goodwill. Policy makers may also make what Lindblom refers to as adaptive adjustments, where they defer to specialised competence. If persuasion fails to resolve conflict, then Lindblom recognises that it may be necessary to use authority, either directly or through a third person, to achieve influence.

However, Lindblom is not satisfied with the idea of partisan mutual adjustment as merely a description of how coordination occurs without a central decision maker. He claims this uncoordinated struggle for advantage is capable of producing rational outcomes and is a more effective way of coordinating decisions, since "multiplicity ensures that no consequences of a decision that may be unwelcome goes unnoticed and unremedied". Furthermore, Lindblom argues that partisan mutual adjustment reduces conflict since greater weight is attached to widely shared values. Once the decision has been made it is endorsed by all partisans because it has emerged from partisan mutual adjustment.

Collingridge is critical of partisan mutual adjustment as a prescription for coordination, claiming that for Lindblom all the devices used with partisan mutual adjustment are equally acceptable. Collingridge argues that apart from partisan
discussion, or "critical debate"25, "where each party to the debate attempts to find factual claims that can be substantiated by evidence and that falsify a rival's preference sentence or decision maxim".26 All other methods of adjustment result in a decision which is not dependent on the quality of the arguments for or against, but "on the relative strength, power and pocket of the partisans".27 Thus for Collingridge, partisan discussion is "the only rational way partisans can adjust to one another"28 and all other methods are irrational.

THE ROLE OF SCIENCE IN POLITICAL DECISION-MAKING

The Scientization of Politics.

Although it is widely recognised now, following the work of Lindblom and others, that few, if any, decisions ever follow the rational model, many still claim it as an ideal to be aimed for. In an effort to provide a more rational approach to decision-making, scientific thinking and the scientific method have been applied to political and social issues, and a number of techniques such as cost-benefit analysis, scenario construction, policy sciences, systems analysis, environmental impact statements, technology assessment and expert consultation have been developed.

The increasing involvement of scientists in politics, and the use of these techniques in decision-making has focused attention on what has been called by Habermas, the "scientization of politics".13 By this is meant

... the scientism by which the infiltration of technical expertise determines the conceptualisation of political problems, the language in which they are expressed, and the institutional forms by which decisions are reached.14

Science is portrayed as an inherently rational activity, and scientists and technologists, with their training in scientific method, their concern with facts,
their objectivity, and their logical approach to problem solving, are believed to provide a rationality superior to political rationality. Dickson has argued that:

"... the basic message of scientism is that an apparently 'scientific' approach to any problem or situation is both necessary and sufficient to indicate how its objective, politically-neutral resolution can be achieved."^16

Decisions are then portrayed as the 'logical response to a given objectively-defined situation,'^17 that is, practical solutions rather than political ones.^18

The belief that scientific knowledge and scientific rationality could be applied to social concerns, thereby replacing politics and ideology with science, has been a common theme of many writings concerned with the relationship between science and government. Brooks has stated that:

One of the most striking developments of the postwar world has been the increasing irrelevance of political ideology, even in the Soviet Union, to actual political decisions. One sees the influence of the new mood in the increasing bureaucratisation and professionalisation of government and industry and in the growth of scientific approaches to management and administration."^15

The "end of ideology" thesis, and the view that politics will decline in a knowledgable society, has led to an increasing interest in the role played by science, and by experts, in the decision-making process.

The Role of Experts

It has been argued that the increasing complexity of, and dependence on, science and technology, and the widening intelligibility gap between experts on the one hand and decision-makers and the general public on the other, has increased the dependence of decision-makers on experts. A considerable literature has developed on the role of the expert in decision-making, much of it following, or at least taking as its focus, President Eisenhower's warning about "the danger that..."
public policy could itself become the captive of a scientific-technological elite".\textsuperscript{29}

Salomon has stated that in modern society, a "new relationship between knowledge and power"\textsuperscript{30} has been created, and that:

... in the decision-making process there are no longer any distinct frontiers between the sphere of the politician and the sphere of the scientist; in some instances the frontier is so fine that the power of decision in fact lies with the scientist on political questions and with the politician on scientific questions.\textsuperscript{31}

Because of the complex and specialised nature of many issues facing governments, experts need to be consulted, and, Salomon argues, in "tender[ing] its services to power", science becomes "a partner in its decisions".\textsuperscript{32} Salomon's view of advisors being "on tap but not on top"\textsuperscript{33}, exerting influence but not control, is shared by a number of writers such as Price, Ferkiss, Bell and Lakoff.\textsuperscript{34} Whilst recognising the potential for dominance by a scientific elite, these writers maintain the belief that the mechanisms of pluralistic society will provide the necessary checks and balances. Although Lakoff agrees that scientists and technologists now have "an unprecedented degree of access to the councils of the decision-makers"\textsuperscript{35}, giving them "a vital role in the identification, discussion and resolution of major social issues in which science and technology are critical components".\textsuperscript{36} he concludes that "the views of scientists are not likely to determine the outcome exclusively".\textsuperscript{37}

In identifying the various roles played by scientific advisors, Brooks recognises that "specific expertise is only a small part of the scientists role as advisor"\textsuperscript{38}; "general connoisseurship" of science and scientific ways of thinking, access to and authority from the scientific community, the confidence and prestige enjoyed by scientists, and intellectual ability are all seen by Brooks as valid roles for scientific advisors.\textsuperscript{39} While Brooks admits a number of criticisms levelled at scientists, such as bias, special pleading, concealing or understating uncertainties,
and involvement in non-technical areas of decision-making, he claims that "the
diversity of viewpoints and institutions represented on high level advisory
committees has been much broader than the critics claim". He also claims that:

... if any policy viewpoints have become dominant in government, this
has been imposed more by the logic of events than by any particular
group of advisors, and that

... perhaps, where the advisors have won out they have done so because
their case was more persuasive, rather than because of illegitimate
pressures or some sort of inside track to policy.

Opposing this view is the belief that decision-making is, or will become,
dominated by a small group of technocrats. Snow has argued that "one of the most
bizarre features of any advanced industrial society in our time is that the cardinal
choices have to be made by a handful of men" in a world of "closed politics" and
"secret scientific choices" where there is "no appeal to a larger assembly". Lapp
has claimed that "scientists in key advisory positions wield enormous power", and that "the ordinary checks and balances of a democracy might fail". Meynaud
also believes that the technocrat had "acquired a decisive influence" and "dethroned" the politician, and Habermas has claimed that the politician has become "a mere agent of a scientific intelligentsia". According to Ellul, the state
has become merely an instrument of the technicians, and politics has become an
"illusion". He argues that "the true choice today with regard to political problems
depends on the technicians who have prepared a solution and the technicians
charged with implementing the decision."

A third view is expressed by writers such as Dickson, and David and Ruth
Elliott, who argue that experts themselves lack any independent power, but instead
serve the already dominant groups and institutions in society. According to
Dickson, "scientists and technologists wield power only through their adhesion and
allegiance to an existing political base."
Whilst it may be open to question whether or not it is the scientist or the politician who wields power, it is evident that scientific knowledge and advice on scientific issues has become an important part of the political process.

The Politicization of Science.

Weingart identifies some of the common assumptions underlying much of the writing on the scientific elite or technocracy. These are:

- that theoretical knowledge assumes centrality as a source of innovation and policy formation and that it serves as a power resource;
- that the scientists exert their power as a fairly coherent group which, often implicitly, can be identified as the academic community;
- that the scientists represent common values and interests.

Weingart argues that the classical image of the scientific advisor, where scientists determine solutions to problems, "leaves scientists in a state of dependency on those who do or do not call on them for advice". Whereas writers such as Brooks have distinguished between advice and decision-making, Weingart argues that "knowledge conveys political power insofar, and only insofar, as it becomes a major ingredient in the definition of political problems".

In his work on the factors shaping the influence of scientists in the policy-making process, Schooler argues that "if scientists successfully dominate the initial phases of policy formation, the remainder of the process may become inconsequential and a mere 'playing out the hand'". Other analysts have come to recognise that problems are not self evident and that "in identifying a problem in particular terms, limitations are straightaway placed on the nature of the decisions about it". Therefore the power to define problems bestows considerable political power.

Weingart also argues against the
somewhat simplified image... of a scientific community based in universities, representing academic values and the vested interests of pure research, appearing to be homogeneous with respect to political opinions and the ability to represent uniform goals.59

He claims that "the institutional locus of the production of knowledge can no longer be identified with academic science" and that "the diversification of the institutional basis of science has its correlate in the loss of a common frame of value-orientations and beliefs as well as a common basis of interests among scientific and technical experts." As a result, the production of "systematic knowledge of the kind which is instrumental for policy making and the crucial resource for the definition of political problems" tends to be produced in government departments and government science institutions rather than in academic institutions.

Weingart's argument is that not only has politics become scientised, but science has become politicised. His analysis of the diversification of the institutional base of the production and diffusion of systematic knowledge, and the politicization of scientists would appear to support Cahn's claim that:

... greater insight can be gained by considering a scientist as a political actor operating in the political milieu than by ascribing any common set of characteristics to him based on the fact that he is a scientist. 63

And once the scientist is considered a political actor in the political milieu, scientific expertise can be considered a political resource.

The Authority of Science

In an important paper on "The Authority of Science in Politics", Ezrahi argues that while "the content of science may have very little bearing on the substance of decisions or policies, the authority of science as a factor in politics does." According to Ezrahi, it is the attitudes and perceptions the lay public hold regarding
science which are important in political contexts. He argues that the assumptions that science and politics are "mutually exclusive or contradictory"^65, that where "science operates, politics terminates"^66, and

... the social prevalence of the view that scientific knowledge, which is identified with public information, is a legitimate and even superior basis for social choices and public policy is bound to provide scientists with significant resources of influence over the course of public life.^^

This authority is not based on "disembodied rational truths or theories"^68 but on "extra-scientific factors"^69 which are visible to the public. Ezrahi claims that one of the basic assumptions underlying public attitudes towards science is that science is a form of public knowledge rather than private and arbitrary knowledge.^70 The assumption that "knowledge authorised by science is grounded in impersonal non-private reproducible procedures through which it can be certified by anyone who cares to do so, provided he has the competence or patience",^71 the belief that there are checks on deception or arbitrary practices, and the visibility of scientific associations which often act as "authoritative public definers of the scientific consensus"^72 all serve to legitimate the authority of science.

According to Ezrahi the authority of science can be used politically as

... a 'cover' for the non-scientific, non-public, narrow political grounds upon which specific decisions or policies are made. Here the pretense that a problem is merely technical is used to convey the impression that the normative questions are already resolved and the remaining problems are merely technical questions of means which can be handled by a few experts.^^

Therefore, it is usually not the content of science which is important, but the appeal to the authority of science which can be used to "depoliticise and relinquish personal responsibility" for decisions, as a "political device for manipulating the timing of a decision or of its publication", to resolve conflict, to legitimate
administrative control, and to "project into the public domain 'pictures of reality' which are most favourable to [the proponents'] interests and actions".74

The Rational Basis of Scientific Knowledge

The traditional norms of science prescribe that scientists should be detached, uncommitted, impersonal, self-critical and open-minded in their attempts to gather and interpret objective evidence about the natural world.75 According to this view it is assumed that scientists are the bearers of a type of knowledge which is unaffected by the social context in which it is used, and that scientists act in a politically neutral manner. Science is depicted as being unique in its cumulative acquisition of unquestionable facts, and "scientists enter the political context as purveyors of certified knowledge".76 It is these assumptions which have led to the view that politics and ideology will be reduced and even eliminated in decision-making.

An alternative perspective portrays scientific knowledge as being established by a process of negotiation. Mulkay argues that "objects present themselves differently to scientists in different social settings, and that social resources enter into the structure of scientific assertions and conclusions".77 Wynne also argues that "to establish a scientific 'fact' requires observation and extensive negotiation as to its meaning"78, and although not formally recognised, scientific judgement mixes indices of credibility with appraisal of evidence.79

Against the "end of ideology" thesis, Mulkay argues that "scientists own claim to be politically neutral [is] itself ideological".80 According to Mulkay, the entry of scientists into the political arena "influences their definition of technical problems, influences the choice of assumptions introduced in the course of informal reasoning, and subjects scientists to the requirement that their conclusions be politically useful."81 Nelkin's studies of controversies have demonstrated how scientific knowledge becomes a political resource which can be
interpreted in accordance with political objectives.\textsuperscript{82}

Wynne also claims that policy advice is often given in spuriously certain terms and decision-making authorities tend to pretend that the basis of decisions are more favourable and certain than is really the case.\textsuperscript{83} Science is thus used to legitimate decisions and to conceal technical disagreement and uncertainties. One way this is achieved is by reconstructing rationality.\textsuperscript{84} Mulkay claims that there is a difference between how scientists actually reach their conclusions and the way they present them formally.\textsuperscript{85} Decisions appear to be revealed as "an independent truth untouched by human choice" rather than chosen and shaped by active commitment.\textsuperscript{86} And the rhetoric of objectivity and the authority of science are often used to conceal these non-factual premises and commitments.\textsuperscript{87} However, these myths, that facts alone determine decisions, that expert debate will produce natural consensus, since facts once seen clearly speak for themselves, and that scientific advice is politically neutral are, according to Wynne, beginning to lose their social purchase.\textsuperscript{88}

Ezrahi has argued that the public is dependent on indirect evidence for perceiving the claims of science.\textsuperscript{89} Wynne takes up this point arguing that:

\ldots the real burden of social evaluation of technologies falls not on the 'facts' of effects and risks but on the credibility of the institutions regarded as having responsibility. Impartiality, accountability and social identification become key factors.\textsuperscript{90}

This is especially important in view of the fact that decision-making about technology incorporates a systematic ignorance over and above other decision-making. Not only does technology have unforeseen consequences, but "inevitably unforeseeable" ones.\textsuperscript{91} This is the category of decision-making which Collingridge labels decision-making under ignorance.\textsuperscript{92} Under these circumstances "questions of public trust, credibility, openness and significantly, the past track record in these respects, become the key features in framing social
Wynne also argues that the ritual attempt to reinforce authority and the “objective” nature of decisions by “controlling information about uncertainties or conflicting points of view, and even by outlawing critical questions and pretending that decisions are based upon sophisticated technical forecasting and similar calculations, as opposed to structurally ‘given’ presumptions and guesswork” is now defunct and even counterproductive. Value choices and uncertainties and the often spurious expert consensus, are being increasingly exposed and this he argues “gives rise to a greater and more general loss of authority by the institutions as a whole when that image is eventually punctured, as they nearly always are.”

THE AUSTRALIAN ANIMAL HEALTH LABORATORY (AAHL)

The establishment of the Australian Animal Health Laboratory provides an example of government decision-making in Australia involving a large scientific and technical component. Before giving an overview of the history of AAHL, some general background may be necessary.

Prior to 1972, no effort had been made to establish specific machinery “for eliciting advice and for formulating and executing national policy in relation to science and technology”. This meant that “the operational bodies themselves have been policy-making bodies within their respective sphere of operations”. However, many areas of policy-making involve an overlap in departmental responsibilities, claims and interests. This is the case with agricultural policy in Australia at the Commonwealth level, and the situation is further complicated by a division of power between Commonwealth Departments and the States.

State Departments of Agriculture were established prior to federation, and although the Commonwealth has the power to act in respect of plant and animal quarantine and overseas trade, legislation must pass through both Federal and State
Parliaments. It was not until 1943 that a Director-General of Agriculture was appointed, and in 1956, the Department of Commerce and Agriculture was divided into the Department of Trade and the Department of Primary Industry. These two departments have continued to work closely together, however matters were further complicated by the Department of Health having responsibility for matters of plant and animal quarantine. In 1985, animal quarantine responsibility was handed over to the Australian Agricultural Health and Quarantine Service (formerly the Bureau of Animal Health) within the Department of Primary Industry.

Co-ordination of agricultural matters is usually achieved through the Australian Agricultural Council (AAC) which was formed in 1934. Its principal functions are "the promotion of the welfare and development of agricultural industries generally; the exchange of information on agricultural production and marketing; the improvement of the quality of agricultural products and the maintenance of high grade standards; to ensure as far as possible, balance between production and available markets; and organised marketing." In addition a permanent Standing Committee on Agriculture (SCA) was formed "to advise the Council, to secure co-operation and co-ordination in agricultural research, to advise State and Commonwealth governments on the initiation and development of agricultural research, and to secure co-operation between all governments in respect of quarantine measures against pests and diseases of plants and animals." 

The AAC comprises the Federal Minister of Primary Industry as Chairman, the State Ministers of Agriculture as well as the Federal Ministers for Overseas Trade, Northern Development, External Territories and Northern Territory, but not the Minister for Health. The SCA comprises the Secretary of the Department of Primary Industry as Chairman, the Permanent Heads of the State Departments of Agriculture, senior representatives from the Commonwealth Departments of Health, External Territories, Northern Development, Northern Territory, Treasury, Overseas
Trade, Primary Industry, and an Executive Member of the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

Since its establishment in 1926, CSIRO (originally the Council for Scientific and Industrial Research) has been heavily committed to agriculturally-oriented research. Furthermore, its unchallenged position at the top of the Australian research system and its near monopoly in the performance of basic research has resulted in CSIRO being the main provider of scientific advice to the Government. Also, the lack of technical expertise within the relevant government departments when the AAC was formed, resulted in technical and scientific advice being sought from CSIRO, and CSIRO membership on SCA reflects this long-standing connection with agricultural affairs.

A Summary of the History of AAHL

The initiative to establish a maximum security animal health laboratory is usually attributed to a report prepared by Dr. Eichhorn in 1964. Dr. Eichhorn, in his capacity as senior veterinarian in the Food and Agriculture Organisation (FAO) of the United Nations, was invited to Australia by the Department of Health to advise on Australia’s preparedness to cope with an outbreak of exotic disease. Together with Mr. McIntosh, the Director of Veterinary Hygiene, he produced a report recommending, amongst other things, the establishment of a centralised maximum security animal health laboratory to undertake diagnosis of exotic diseases, vaccine production, research into diagnostic methods and preparation of diagnostic agents, and training of State laboratory staff.

This view of the history of AAHL has been repeated so often in reports, submissions and background papers that it has become the authoritative version. However, investigation reveals that a considerable amount of activity and discussion by the Australian Veterinary Association, the Biennial Conference and the Director of Veterinary Hygiene preceded and led to this visit. A full account of
Although the Eichhorn Report provoked some discussion at the Standing Committee on Agriculture and the Exotic Diseases Committee, further investigation was confined to the Department of Health until 1967 when Dr. Pierce, Chief of the Division of Animal Health, CSIRO, initiated CSIRO involvement. The period from 1968 to 1974 was one of heightened activity where a number of investigations into establishing such a laboratory were undertaken. In 1968 an Interdepartmental Committee, comprising representatives from the Departments of Health, Primary Industry and Treasury and CSIRO was established, as was a Commonwealth-States Veterinary Committee (CSVC) Working Party, and the recommendations of these two groups were presented to the Standing Committee on Agriculture and the Australian Agricultural Council in 1970.

The outcome of the AAC's consideration of these two reports was the formation of a Panel, comprising senior representatives of the States to consult with the Commonwealth. This Panel met in August 1970, formed an eleven-man Advisory Proposal Committee, which in turn formed a Proposal Evaluation Team (PET). Between October and December 1970, the members of PET visited fifteen overseas laboratories. The PET Report was published in 1972 and formed the basis of a joint submission by the Ministers for Education & Science, Health and Primary Industry to the Commonwealth Government recommending the construction of a maximum security animal health laboratory. In October 1972, the Commonwealth Government agreed in principle to the establishment of the laboratory.

A further joint submission to the Government was made in 1973 by the Ministers for Science, Health, Primary Industry and Northern Development. This submission was accompanied by the CSIRO Proposal for a National Animal Health Laboratory Report of May 1973 and an Environmental Impact Study produced by the CSIRO and the Department of Works in October 1973. The Government approved the selection of the Geelong site in April 1974 and in July 1974, the proposal was
referred by the House of Representatives to the Parliamentary Standing Committee on Public Works (PWC).

A public inquiry was held by the PWC at Geelong in September 1974 and the conclusions and recommendations contained in its report to Parliament were:

1. There is a need to establish a maximum security Animal Health Laboratory to ensure the prompt and reliable diagnosis of exotic animal diseases.

2. The proposal is economically justified.

3. The "box within a box" principal of design of the Laboratory will ensure microbiological security.

4. The proposed functions of the Laboratory are appropriate.

5. The precautions taken to prevent the escape of infectious disease viruses have been based on and are an improvement on measures which have been successful in a number of similar laboratories overseas.

6. After a suitable proving period the Laboratory should be authorised to handle foot and mouth disease prior to an outbreak of the disease in this country.

7. The site selected is suitable.

8. The Committee recommend the construction of the work in this reference.

9. The Committee consider that the construction and establishment of the Laboratory should proceed as a matter of urgency.

This Report was accepted in its entirety when submitted to the Parliament in November 1974, and funds were allocated in the August 1975 budget. However, a change of Government in December 1975, and the implementation of a Liberal policy of reduced public spending, deferred construction. During the period 1975 to 1977, a number of moves were made to gain approval for funds to commence construction, and a review of the design of the laboratory was also undertaken in an effort to reduce the cost. Although this new building configuration reduced the cost by around $15 million, it would appear that the combination of an election in December 1977, and the announcement in November 1977 of the discovery of a Bluetongue virus in the Northern Territory played a more significant role in
gaining approval to start construction in March 1978. Moreover, the reduced-cost model was quickly jettisoned once approval for construction was obtained. Despite the policy of reduced government spending, it was decided in December 1979, following an exotic disease scare in Tasmania, to accelerate construction by one year at an additional cost of $7 million.

In 1978 the ANAHL Consultative Committee was established by the Ministers for Health, Primary Industry and Science and Technology, to advise the CSIRO Executive on all matters pertaining to the programme and operations of ANAHL. In 1979 this Committee recommended that ANAHL should undertake research on and development of FMD vaccines, which would involve the introduction of live FMD virus prior to an outbreak of the disease in Australia. This proposal was put to the Animal Health Committee (formerly the CSVC) and the Standing Committee on Agriculture and eventually the Australian Agriculture Council itself, where it was endorsed in February 1980. The Minister for Science and the Environment was then advised by the CSIRO Executive that it would be in the national interest for AAHL to have access to live FMD virus in advance of an outbreak, and he, together with the Ministers for Primary Industry and Health approached the Prime Minister and obtained his approval in November 1980.

This decision was not made public at the time, and it was agreed by the proponents that an extensive education campaign would be necessary to gain primary producer support for the decision. Primary producers first learned that it was intended to import live FMD virus into AAHL once microbiological security had been established, at the Annual Conference of the Cattle Council of Australia in April 1981. This provoked considerable reaction, not only from primary producers, but also from some scientists. Professor Bede Morris argued that the laboratory represented a misdirection of resources, and that it would provide no benefit to primary producers. Primary producers expressed their fear that importing live FMD virus represented a significant risk to the livestock industry.
At this same time, an advance in genetic engineering technology, which promised improvements in FMD vaccines, and the elimination of the need to use live virus in vaccine manufacture, was announced. To many primary producers and scientists, this development called into question the basis of the decision to import live FMD virus. Whilst attempting to play down the significance of this scientific advance, the proponents of live virus importation began developing arguments justifying the need for live virus to perform other functions at AAHL.

Efforts to reassure the public about the safety of using live virus in AAHL were not successful, and the controversy escalated as more primary producer organisations and scientists became involved in the debate. Furthermore, the opponents began questioning not only the need for live virus, but the need for the laboratory and its proposed functions. In an attempt to resolve this conflict, a Forum was organised, and scientists, primary producers and State and Commonwealth government representatives met for two days at Geelong in August 1982. Despite wide-ranging discussion and expert opinion, differences were not settled; opponents held to their view that live FMD virus was not needed and that it posed a threat to industry, proponents claimed that there was no risk and that without the virus the laboratory would not be able to adequately perform all its functions.

Following the failure of the Forum to achieve consensus, a Senate Standing Committee Inquiry was called. This was later abandoned following a change of government in 1983, but the Australian Science and Technology Council (ASTEC), and later the Australian Academy of Science, investigated the issue. These two reports, both recommending against importation of live FMD virus were tabled in Parliament in May 1983. The Minister for Science and Technology, Mr. Barry Jones acted on these recommendations, taking the matter to the full Labor Caucus and then Cabinet in late May 1983. The Government agreed that live FMD virus should not be imported until the end of 1987, when the matter would be re-assessed.
This action by Jones was in conflict with the recommendations of CSIRO and the Bureau of Animal Health, and this became a topic for comment both inside and outside the Parliament. With the live virus importation question settled, Jones focused attention on the need for the laboratory and the functions it should perform. Amidst growing concern about the future of the laboratory, Jones recommended to the Prime Minister, on the advice of the Chairman of CSIRO, that a ministerial committee be formed to consider how the laboratory could be best used, given the decision not to import live FMD virus, and given the advances which had occurred since the laboratory was originally conceived. This Ministerial Committee requested the formation of an expert committee to provide further technical advice. The report of this expert committee, chaired by Professor Fenner, was tabled in Parliament in September 1984, along with the Government's response. The Fenner Committee confirmed the need for the laboratory to undertake diagnosis, research and training but recommended against vaccine production, and the Government adopted these recommendations.

After more than two decades of discussion, numerous inquiries and investigations, and three years of public debate, the laboratory was officially opened on 1st April, 1985.

Plan of the Thesis

This thesis is divided into three major parts. Part One traces the decision-making process from the early initiatives through to submission of the proposal to the Parliamentary Public Works Committee in 1974. It will be shown that the establishment of AAHL was not the result of a single decision made by a particular individual or organisation, at a particular time, but was the outcome of a complex process of incrementalism, bargaining, negotiation, adjustment, and consensus formation by a number of individuals and groups over a long period of time. It will also be argued that knowledge and the authority of science were used
as a resource by the proponents to give a spurious air of certainty and scientific rationality to particular political decisions.

Whilst the aim of Part One is to show the process by which the decision to establish an animal health laboratory was made, and to reveal the non-scientific basis for many of the arguments, Part Two looks at the public account of the decision-making process, that is, the way the decision was said to be reached. In the submissions to the Parliamentary Public Works Committee, rationality was reconstructed, and conflict and uncertainty and the non-scientific basis of the arguments were concealed. Furthermore, it will be argued that the form and structure of the PWC Inquiry reflects and perpetuates the myth of rational scientific decision-making.

Part Three covers the public controversy which arose over the decision to import live foot-and-mouth disease virus into AAHL prior to an outbreak of the disease in Australia. It will be shown how the controversy developed from a specific concern over importation of live virus to a more general questioning of the need for the laboratory and the appropriateness of the proposed functions, and ultimately to a questioning of the authority and credibility of the decision-making institutions and the organisations responsible for developing and controlling the technology. This section, therefore, not only completes the historical narrative, but shows that an understanding of the decision-making process, and the consequences of particular forms of decision-making, is not merely of intellectual interest, but is central to the understanding of the public reaction to particular decisions.

A glossary of abbreviations and a list of the main actors are included at the end of the thesis to assist the reader.
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PART ONE:

BUREAUCRATIC POLITICS.

"To explain why a particular formal governmental decision was made... it is necessary to identify the games and players, to display the coalitions, bargains and compromises and to convey some feel for the confusion."

CHAPTER II

EARLY INITIATIVES.

It has been stated that:

[whilst]... it is comparatively easy to see that a decision has been made when there is an obvious change in direction of policy, ... it is often difficult to see who made the decision, when the process began which resulted in its formation, and when it ended.¹

Lindblom has claimed that decision-making is "an extremely complex analytical and political process to which there is no beginning or end, and the boundaries of which are most uncertain."²

It is widely believed that the initiative to establish the Australian Animal Health Laboratory (AAHL) originated from a 1964 report to the Australian Government prepared by Dr. Eichhorn. However, a considerable amount of discussion and activity had occurred prior to this visit, and, it will be argued here, had led to this invitation and had informed the recommendations contained in the report. By the time Dr. Eichhorn visited Australia, the agenda had been set. Rather than initiate the idea of the laboratory, the Eichhorn Report provided the necessary expert justification to legitimate the already established view.

The establishment of an exotic diseases laboratory was discussed by the Australian Veterinary Association (AVA) in the late 1950's. At that time the AVA was quite a powerful body, whose advice on veterinary matters was sought by various government departments. The Division of Veterinary Hygiene employed no veterinary scientists directly, and instead relied on the AVA, the Commonwealth Scientific and Industrial Research Organisation (CSIRO), or universities for
technical advice. The AVA asked that the Commonwealth Government establish a secure Exotic Diseases Diagnostic Unit in each State. The suggestion was that a separate unit of four or five rooms be provided adjacent to existing diagnostic laboratories so that ancillary facilities of existing laboratories could be utilised.\(^3\)

The 1959 Biennial Conference of Commonwealth and States Veterinarians reported to Standing Committee on Agriculture (SCA) that there was a need "for the official diagnostic laboratories in each State to have adequate and safe facilities together with trained staff for the investigation of viral diseases".\(^4\) Standing Committee "agreed that facilities should be available for the diagnosis of exotic diseases of animals".\(^5\) but noted that:

The cost of building such facilities and the difficulty of obtaining the services of suitable staff militated against the erection of these facilities, especially as from past experience they may only be required to deal with exotic disease emergencies at intervals of ten to fifteen years.\(^6\)

It was also noted by SCA that CSIRO had plans for developing its virology research, and it was therefore recommended that CSIRO and the Department of Health "should confer concerning the possibility of the CSIRO Division of Animal Health undertaking the diagnosis of certain suspected exotic virus diseases of animals".\(^7\)

After consideration, CSIRO reported that:

It would be undesirable for its planned programmes of virological research to be subject to constant interruption by State authorities wishing to make quite sure that some current virus disease was not a serious exotic disease.\(^8\)

CSIRO also argued that there was, "in any case a need for each State diagnostic laboratory to have an isolation block where virus diseases can be investigated without danger of spread".\(^9\) although it was recognised that for "the most serious exotic virus diseases, material would be sent overseas for diagnosis".\(^10\) In July 1959.
Standing Committee resolved that the Department of Health discuss the matter with each State authority.

At the 1961 Biennial Conference of Commonwealth and State Veterinarians, it was recommended that:

It was highly desirable to have overseas experts visit Australia and discuss measures for the control and eradication of exotic diseases in the event of their introduction into Australia. 11

This was supported in principle at the 67th meeting of Standing Committee on Agriculture in 1962.

A shift away from the idea of separate State facilities had occurred around this time, possibly because of SCA's earlier concern with the cost of building such facilities and the difficulty of obtaining skilled staff. The Exotic Diseases Committee (EDC) of the Australian Veterinary Association engaged in a number of formal and informal discussions with the Director of Veterinary Hygiene and the Minister of Health to promote their view of the need for a central Commonwealth exotic diseases laboratory. The arguments put forward by the EDC in 1962 for establishing this central laboratory were that:

- i) it would provide a trained nucleus of experienced workers that could be called upon in an emergency, for it would be their responsibility to become familiar with the techniques used for diagnosis and control in exotic disease but of which workers in Australia have no experience.
- ii) it would serve as a collecting house for information on diseases not present in Australia.
- iii) the staff might undertake research requiring techniques used in the case of exotic disease, particularly virus diseases, applying this to viral disease in Australia,
- iv) the staff might, as specialists on exotic diseases and as viral specialists, train Australians for State laboratories etc. at post-graduate level. 12

The difficulties foreseen by the EDC were the cost of setting up such a laboratory and obtaining staff of high calibre and keeping them usefully employed.
To overcome some of these problems they considered setting up a special exotic diseases section within an existing research organisation such as CSIRO or the Australian National University (ANU). However, after weighing the advantages and disadvantages, the EDC concluded that:

The greatest safeguard in combating the introduction of disease and the greatest help in diagnosis and control of exotic disease would be by the Commonwealth Department of Health itself setting up a laboratory under the direction of its scientific officer.\(^\text{13}\)

In November 1962 at the 39th AVA Annual General Meeting, it was moved that the Australian Veterinary Association's recommendations to strengthen existing methods of diagnosis and control of exotic disease be submitted to State and Federal Governments.

The Director of Veterinary Hygiene, Mr Mcintosh, was opposed to the establishment of a centralised exotic disease laboratory, favouring instead a strengthening of existing State laboratories and support of the CSIRO in the extension of its facilities. Mr. Mcintosh stated:

I cannot conceive that one or more persons could become specialists in such diagnoses of a range of diseases unless they were working fairly constantly with serious exotic diseases and such would not be permitted in Australia. . . . I would strenuously oppose the importation of viruses of serious diseases of animals and in this the Director of Quarantine would support me.\(^\text{14}\)

Dr. Gregory, Chief of the Division of Animal Health, CSIRO, was also opposed to the idea of a centralised laboratory, favouring instead the building up of State laboratories. As "the best informed member of the Biennial Conference on virological matters"\(^\text{15}\), according to the members of the Exotic Diseases Committee, his opinion carried considerable weight at the time.

Despite this opposition, the Exotic Diseases Committee was still advocating in its report of March 1964, a Commonwealth laboratory, with "the full range of
equipment including maximum security isolation quarters for large animals for research on endemic virus diseases, for training of State officers, for collection of information and supply of advice to the Director of Veterinary Hygiene, and, in the case of an outbreak of exotic disease, to perform the necessary tests after initial diagnosis had been confirmed overseas.16

In a 1963 AVA Journal Editorial, it was argued that:

Despite the collaborative arrangements which exist with international Virus Reference Centres, in the event of an outbreak of a serious virus disease, there is need for us to be much more self reliant. The role of the Reference Centres in global epidemiology, especially of a disease such as foot and mouth disease, is established. The Reference Centre however, cannot be expected to do all the work involved in the skirmish which follows the initial diagnosis.17

It was also pointed out that at the time, CSIRO had only a small virology laboratory, and that no State laboratory operated a first class virus unit.18

In order to better understand this interest in establishing an animal health laboratory in Australia at this time, we need to also look at the wider context, especially in view of the fact that Australia had not had an outbreak of FMD since 1872, rabies since 1867, and rinderpest since 1923. First, there had been scientific and technological advances in the science of virology. In a paper to the CSIRO Advisory Council in 1968, Dr Pierce (then Chief of the CSIRO Division of Animal Health) pointed out that:

During the last 15 years there has been a growing awareness of the devastating consequences to Australia's primary industry which could develop from the introduction of an exotic disease. In view of the prime importance of Foot and Mouth Disease, a committee was set up in 1953 to examine methods by which an outbreak could be countered and in the same year a Diagnostic Sub Committee, chaired by the Chief of the Division of Animal Health, was created to examine ways and means of establishing a firm diagnosis.

In 1958, the CSIRO, Division of Animal Health created a virology section at its Melbourne laboratories which pioneered the study of viruses of veterinary importance in Australia. During the first few years some six viruses, hitherto undetected, were shown to be widespread in Australia.
However, under the present extensive management systems practices in Australia, they do not cause serious loss.¹⁹

Research in virology held the promise of eradication, or at least better control, of a number of viral diseases of animals. The original arguments for establishing a laboratory in Australia reflected this recognition of the importance of virology in animal health. The Exotic Diseases Committee argued that the laboratory would provide and train specialists in virology and undertake research into viral diseases, applying this to viral diseases already present in Australia.

Furthermore, at this time, the Food and Agricultural Organisation of the United Nations (FAO) was actively engaged in setting up laboratories around the world, specialising in particular diseases, following the successful eradication of Rinderpest from China. Dr. Kesteven, who, on his return to Australia, played an active role in discussions regarding the laboratory in the early 1970's in his capacity as advisor to the Departments of Primary Industry and Health, joined the United Nations in 1946. In 1947 he became Veterinary Advisor to the Chinese Government, where he played a leading role in the Rinderpest eradication programme. By 1959, he was Director of the Division of Animal Production and Health of the FAO, and had been involved in setting up laboratories around the world.²⁰

Along with the Secretary for the Department of Primary Industry, Kesteven was the Australian delegate at FAO conferences, and was used as a consultant by the Department of Primary Industry. He returned to Australia for four weeks each year to visit various laboratories and government departments to transfer information on the international scene.²¹ Thus, it would appear that Kesteven was in a position of some influence; he was viewed as an expert and he had an audience among animal scientists and bureaucrats in Australia.

This new and increasing interest and concern regarding the threat of exotic
diseases to Australia was reflected in the articles and editorials in the Australian Veterinary Journal, in discussions and papers presented at AVA meetings and conferences, and Biennial Conference, and in the formation of various committees to investigate this problem.

However, a number of arguments against a centralised Commonwealth laboratory were put forward during this period. The first reflected the complex administrative arrangements for primary industries between the Commonwealth and the State. Thus, it was argued, that while the function of the Director of Veterinary Hygiene was to keep exotic diseases out of Australia, once they got in it was the responsibility of the State concerned. Furthermore, it was argued that:

From the point of view of the field officer and the State diagnostic laboratories, there can be no initial differentiation between exotic and other diseases... Because the State laboratories are dealing constantly with 'unknown' conditions, and it is the custom of field staff to submit material of this sort for identification, it is most likely that an initial diagnosis of such diseases will be first made from one of the State diagnostic laboratories.

A stronger statement of this argument claimed that a State laboratory could "be working with exotic material for weeks or even some months before recognising it as such", and that a proposal to establish a central laboratory would hamper "the essential improvement to State laboratories".

It is important to note that at this time it was not suggested that the laboratory was needed to perform or confirm an initial diagnosis. Arrangements had been made with overseas laboratories to receive sample material from Australia and this was recognised as appropriate by the EDC. Mr McIntosh, in a letter to the EDC in 1962, stated that:

It seems logical to have diagnoses made by scientists [in overseas reference laboratories] who are familiar with the particular work as a day by day routine, in laboratories which are "tooled up" for the job and whose technical staff are familiar with the task involved.
At the Australian Veterinary Association Annual Conference in 1964, he held the same view that "it was better to go to overseas laboratories tooled up for the job rather than to fumble through a diagnosis." It was at this conference that Dr. Gregory of CSIRO suggested that the matter was "getting a little out of proportion . . . [since] our quarantine was efficient and liaison with Pirbright [the World Reference Centre for Foot and Mouth Disease] well established."

It was not until 1964 that explicit economic arguments began to be put forward. In an EDC report it was stated that:

> The importance of the whole subject may be judged by the fact that meat exports alone are valued at about $100,000,000 p.a.; if FMD, or another of the major animal plagues, became established in Australia much of our export trade in meat could be severely restricted.

And at the AVA Annual Conference, Dr. Seddon of the AVA stated: "the annual defence budget for Australia was $200,000,000 and animal defence was well worth $500,000."

It was also around this time that criticisms of the current arrangements began. In the Presidential Address to the AVA in 1965, Dr. Astil claimed that:

> . . . it is now generally recognised that, no matter how well trained and efficient our quarantine services may be, diseases such as foot and mouth disease may by-pass these artificial barriers.

The President went on to emphasise the importance of prompt diagnosis and laboratory confirmation, arguing that:

> For every delay of a day, more stock could become involved, more staff required and more time lost in restoring normal stock movement. Each of these aspects costs fortunes weekly, but most important is the fact that our national prestige is at stake.

Furthermore, he argued that not only should "the problem of delay involved sending specimens half way around the world to a laboratory which has no
experience of our local disease problems" be considered, but that reliance on overseas laboratories was dangerous. He stated:

These institutions [i.e. overseas laboratories] must have the approval of their government to receive into their laboratories infected material from an overseas source. I feel that from time to time, we could be refused entry, and could be in a dangerous and embarrassing position of having an outbreak of disease on our hands and our request to process specimens refused.33

Thus it was concluded that "the ideal plan for diagnosis of such suspect material is to erect a suitable laboratory conforming to world standards in Australia."34

At the same time as consideration was being given to the establishment of a centralised Commonwealth laboratory, arguments were being advanced regarding the need to establish a Bureau of Veterinary Science. The EDC stated:

The Committee feel that at present the Director of Veterinary Hygiene is at a considerable disadvantage because he has no scientific officer under his direction. With this in view the Committee feel that it would be not only advantageous but essential that there be set up, within the Division of Veterinary Hygiene an 'office' for this purpose.35

The proposed functions of this office were:

i) to collect and collate all relevant information on the diseases we fear,

ii) to maintain liaison with other such centres and research institutions,

iii) to collect and collate information from all the States and Territories of newly discovered diseases and the progress being made in acquiring knowledge of them, particularly concerning incidence, economic importance, control and measures for eradication,

iv) to prepare material for the proposed Newsletter, and,

v) to provide a reference library for veterinary research workers and diagnosticians in Australian States and Territories.36

The person in charge of this office,

a) would be immediately available to the Director of Veterinary Hygiene (DVH) for consultation on any particular problem,
b) could be called upon by the DVH forthwith to get out all relevant information on any particular matter.

c) would attend Biennial Conference.

d) would be immediately available to proceed to any State or Territory where exotic disease had appeared.

e) would be responsible for collection and preparation of proposed newsletter, and,

f) would visit other States for consultation and address veterinary meetings.\(^\text{37}\)

Although it is not at all clear why these functions would require a maximum security laboratory, the EDC argued that the two services, that is the laboratory and the Bureau would be

...complementary and should be closely coordinated. By so doing, the work of one would stimulate the aim of the other and together they would greatly strengthen the defence of Australia against the introduction of exotic disease and augment measures for its speedy eradication.\(^\text{38}\)

At a less public level, however, EDC members saw the establishment of a bureau as a means of achieving the laboratory, should the opposition of the Director of Veterinary Hygiene thwart this proposal. They argued that while "it might be better to drop the idea [of the laboratory] for the present"\(^\text{39}\), that "if we plug for an Information Officer, it will develop into an Information Centre, and that later laboratory facilities will necessarily come."\(^\text{40}\) They believed that McIntosh was "looking for a way out" and that the Information Officer idea was "most likely to meet with success".\(^\text{41}\)

However, McIntosh rejected many of the arguments used by the EDC to substantiate the need for a Bureau or Information Office, claiming that all that was required was additional staff for the Division of Veterinary Hygiene. He argued that his Department had access to a considerable amount of information from overseas, that the staff had the necessary skills and command of the required procedures for distributing information, that in the event of a suspected outbreak
of exotic disease the Consultative Committee is convened to advise and take action, that a newsletter and Exotic Diseases Bulletin were planned, and that he already had access to expert advice of the highest calibre from CSIRO, the Australian National University (ANU) and State instrumentalities.  

Dr. Refshauge (Director General of Health, Commonwealth Department of Health), in a written reply to the EDC, made these same points, concluding that the present arrangements were satisfactory. However, it appears that Dr. Refshauge had passed the letter from the EDC regarding these matters on to McIntosh to draft a reply. Nevertheless, the EDC began to make slow progress with Refshauge, who announced a scheme to send two veterinary officers each year to overseas training courses, organised post-graduate courses on exotic diseases, and invited Dr. Eichhorn, a world authority on Foot and Mouth disease, to Australia in 1964.

It was also at this time that questioning of the division of administrative responsibility between the Commonwealth Departments of Health and Primary Industry began. At the 1964 AVA Annual Conference, Professor Francis stated that he "considered the administrative arrangements peculiar" and that since the Department of Health was not primarily concerned with animals, the Department of Primary Industry was the appropriate body to administer these matters. Mr. McIntosh defended his Department's role, claiming that the Division of Veterinary Hygiene was deliberately placed in the Health Department to divorce it from any Commonwealth Department concerned with the promotion of trade in order to preserve the integrity of the quarantine service.

Thus, it appears that even before Dr. Eichhorn's Report, a number of issues had begun to emerge. It has been argued that "in identifying a problem in particular terms, limitations are straightaway placed on the nature of the decisions about it." It was proposed that Australia needed a centralised exotic diseases laboratory to provide a trained nucleus of workers familiar with techniques for diagnosis and control of exotic diseases, to undertake research into endemic viral diseases and to
train State laboratory staff. Current arrangements were criticised, but alternatives to the establishment of a centralised laboratory, apart from using State laboratories, did not appear to be considered.

Despite McIntosh's opposition, it was proposed that this laboratory should be established by the Department of Health, although moves for Department of Primary Industry involvement were beginning. At this stage CSIRO was not involved. Their representative on the various veterinary committees at that time was Dr. Gregory, who had stated that the current arrangements were satisfactory.

The laboratory also became closely linked to the proposal to establish a veterinary bureau. There appears to have been some dissatisfaction with the Division of Veterinary Hygiene, and the establishment of a veterinary bureau was seen as a way of overcoming this, as well as providing a further basis for establishing the laboratory.

These early arguments were extended and elaborated, countered and contradicted over the next 20 years. The view that a problem was identified and a solution discovered by Dr. Eichhorn's investigation, whilst fitting the rational model of decision-making, does not fit the evidence. Even at this early stage, before Eichhorn's visit, the issues had been defined, the goals set and the options limited.

The initiative to establish an animal health laboratory arose, not from any immediate threat of an outbreak of disease in Australia, nor in response to demands from rural industries or the Australian Government, but from a small group of veterinary scientists. It arose at a time when FAO was actively establishing animal disease laboratories around the world, and when advances in the science of virology promised better control of serious diseases. These influences were reflected in the early reports of the EDC, which recommended the establishment of the laboratory for diagnosis and investigation of viral diseases.

As with decision-making, agenda setting can be an untidy process of negotiation, bargaining and coalition formation, along with the construction of
rational, and often scientific and technical, arguments to support the proposal. The EDC enjoyed a number of advantages at that time which facilitated their efforts. They were considered experts and were backed by the Australian Veterinary Association. The AVA dominated the Biennial Conference, and thus had a forum for its views and an opportunity to engender interest in and support for the proposal. Although not part of the government bureaucracy, the AVA advised government departments, had direct access to both McIntosh and Refshauge, and included in its membership, veterinary scientists employed by Commonwealth and State departments. This gave the AVA a considerable advantage, since, as Benveniste points out, "the formulation of an issue, the existing domain of discussion, orients or limits the scope of political discussion."\textsuperscript{49}

Activity in the early stages was aimed at gathering support for the proposal; not the support of primary producers, but the support of veterinary authorities, Heads of Departments and Government Ministers. Benveniste has argued that if a plan is to be implemented, "planners need to generate their own sources of social power."\textsuperscript{50} This, he claims, can be achieved by stressing the technical and scientific validity of the prescribed course of action and forming a coalition of experts who agree, and by convincing others of the advantages to them, thus forming a coalition of supporters.\textsuperscript{51}

The initial opposition of McIntosh and the lack of support from Gregory, a recognised expert on virological matters, hampered progress. So although the EDC had access to McIntosh, they could not convince him to support them at that stage, and they could not present a unanimous expert view whilst Gregory dissented. Nevertheless, they began to make progress with Refshauge, and achieved a victory when Eichhorn was invited to advise on Australia's preparedness to cope with an exotic disease outbreak.
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CHAPTER III

THE EICHHORN - MCINTOSH REPORT

In 1964, Mr. McIntosh, Director of Veterinary Hygiene, and Dr. Eichhorn, Chief of Animal Health Branch, Food and Agricultural Organisation of the United Nations, "undertook a critical survey of the present organisation and proposed methods of control and eradication of Foot and Mouth disease and other vesicular diseases in Australia." 1

Dr. Eichhorn was invited to Australia by the Department of Health as an overseas expert. However, his previous positions as Counterpart-in Charge of the Palo Alto Diagnostic and Vaccine Production Institute, and Director of the Pan-American FMD Centre, Rio de Janeiro, would suggest that he would favour a particular approach to disease control, namely the establishment of a maximum security laboratory. In fact, the possibility would have to be considered that Dr. Eichhorn was invited because it was believed his report would provide authoritative support for an already established view.

There are a number of interesting features about the Eichhorn-McIntosh Report. First, it provides a clear statement of the economic consequences of an outbreak of FMD and indicates the costs of eradication using overseas examples to substantiate the claim that "no effort or expense should be spared to prevent entry of the disease in Australia or to eradicate it in the event of its penetrating the quarantine barrier." 2

Second, it makes a specific reference to the increasing risk of entry of exotic diseases to Australia due to the increasing number of travellers and the increasing speed of travel. These two arguments, namely, the value of the livestock industry
and the increased risk, were used for the next 20 years to substantiate the claim that there was a need for a maximum security animal health laboratory.

The third interesting feature is the apparent change in the attitude of McIntosh. From his previous position of not favouring a centralised laboratory and being "strenuously" opposed to the introduction of live exotic virus, McIntosh now lent his name to a Report which, as well as recommending an upgrading of State laboratories, advocated the establishment of a central laboratory for:

i) diagnosis, with facilities for inoculation into large animals

ii) vaccine production,

iii) research into diagnostic method, differentiation, antigenicity, etc. and production of diagnostic reagents, and

iv) training of State laboratory staff.3

Furthermore, the Report stated that "in order to enable the Central Laboratory to function in this manner, it will be necessary to permit the importation of living virus."4

At this stage, elaborate arguments were not put forward to substantiate the proposed functions of the central laboratory. It was recognised that "Pirbright could be expected to diagnose the disease, type the virus and probably the strain of virus".5 It was argued, however, that "in the event of specimens proving unsuitable for setting up a complement fixation test without passaging, or if the specimens were totally unsuitable for diagnosis, there could be serious delay in diagnosis, such a delay would be extremely serious" 6

The functions proposed for the laboratory were similar to those proposed by the Exotic Diseases Committee, with the exception of vaccine production. This was the first time vaccine production had been included and would appear to reflect Dr. Eichhorn's background in vaccine production laboratories.

The reasons given for manufacturing vaccine were:
a) use of the outbreak strain provides better immunity, although it was recognised that initially reserve stocks from overseas would have to be used.

b) sufficient quantity may not be available if a large number of doses were required, and

c) since animals must be vaccinated every four months for maximum results, "a steady supply of effective vaccine in adequate quantity and at an economical cost" was required.  

In September 1964, that is, soon after Dr. Eichhorn’s visit, McIntosh discussed the idea of the laboratory with Dr. Johnston, Director of the Animal Disease and Parasite Research Division of the United States Department of Agriculture. According to McIntosh, Johnston held the opinion that diagnosis is the responsibility of the country concerned, even if specimens are sent to Pirbright, and therefore, Australia should establish a central laboratory for the study and diagnosis of FMD. Johnston also suggested that the laboratory should extend its activities to other exotic diseases as well as FMD, but he thought that State laboratories did not seem necessary. Furthermore, he claimed that since the most effective vaccine is that prepared from the outbreak strain, this laboratory should be capable of manufacturing vaccine.

McIntosh then met with Dr. Callis, Director of Plum Island maximum security laboratory, USA, and loaned him the Eichhorn-McIntosh Report. After reading the Report, Dr. Callis agreed that Australia should establish a laboratory for research and diagnosis of FMD and manufacture of vaccines, although with regard to vaccine production he suggested Australia should "not go overboard", as progress in techniques in the next 5 years may be important. Plum Island, it should be noted, had no vaccine production facilities, and like Australia, the United States had a firm policy of "stamping-out" by slaughter without vaccination in the event of an outbreak. Callis added that if the USA was faced with the need to produce vaccine, it would probably be manufactured by private enterprise, and that the inclusion of
vaccine production facilities would increase the cost of the laboratory considerably.  

Dr. Callis agreed that State laboratories would not be necessary, and stressed that the central laboratory should be an entirely separate facility unassociated with any other research laboratory. 11 McIntosh stated that “after viewing the pro’s and con’s as to who should control the laboratory, Dr. Callis preferred the idea that it should be under the control of the Commonwealth Department of Health.” 12 It could be suggested that Mr. McIntosh’s position as Director of Veterinary Hygiene in the Department of Health had some influence on Dr. Callis’s opinion. It could be further suggested that McIntosh had sought expert opinion which would substantiate the proposals contained in the Eichhorn-McIntosh Report. Given their involvement in similar laboratories, the views of Johnston and Callis were hardly unexpected.

The fourth important feature of the Eichhorn-McIntosh Report, and one which was to become highly controversial later, concerned the policy of ”stamping-out” versus vaccination. A firm policy of ”stamping-out”, that is slaughter of all animals suspected of carrying the disease, had been adopted in Australia. Australia enjoyed considerable economic advantage because of its FMD-free status, and this would be jeopardised if vaccination were ever undertaken, since carriers of the virus would be concealed and disease-free status could not be guaranteed to the satisfaction of trading partners. The first suggestion that Australia should undertake a vaccination programme was made in the Eichhorn-McIntosh Report. Recommendations 3 and 4 of the Report stated:

The past policy of eradication by ”stamping-out” should be maintained in respect of areas where livestock are under control.

In those areas where livestock are not effectively controlled and the complete ”stamping-out” policy is not feasible, a combination of ”stamping-out” and strategic ring vaccination around the outbreak should be carried out. 13
Strategic ring vaccination involves vaccinating all non-infected but susceptible livestock within an agreed radius of the outbreak, in order to slow down the spread of the disease. Later arguments proposed by advocates of ring vaccination added that once the spread of the disease had been contained, all vaccinated animals would also be slaughtered. However, this was not the policy recommended by the Eichhorn-McIntosh Report.

The Report considered the problems of control and eradication faced by each State and concluded that only in Victoria was "stamping-out" wholly feasible*. In South Australia "stamping-out" would apply except if the outbreak occurred in the semi-desert areas. In NSW strategic vaccination would be undertaken if the disease became established in the feral animal population. In Western Australia, only the South-Western Division could adopt "stamping-out" methods, the remainder of that State, along with most of Queensland and Northern Territory, having to resort to vaccination. Tasmania was not investigated.

Thus, according to Eichhorn and McIntosh, it would appear that a "stamp-out" policy has only limited application in this country and that in a number of cases, vaccination, "with all its drawbacks"14, would be undertaken in addition to slaughter-out in the original outbreak area. Nowhere in the Report was it stated that vaccinated animals would be subsequently destroyed, and, in fact, the opposite was suggested. One argument presented in the Report for undertaking vaccine production was that animals required vaccination every four months and therefore a steady supply, in adequate quantity, at an economical cost was necessary15. Furthermore, it was proposed that vaccinated animals should be kept under surveillance for not less than three weeks after the last case was noted, and

* It is interesting to note that in later arguments, Victoria was used as an example of where strategic ring vaccination would be used. It was claimed that the high density of cattle may facilitate such rapid spread of the disease that vaccination would need to be undertaken to bring it under control.
any cases which occurred during this period destroyed, and that in the vaccinated zone constant surveillance should be maintained for at least twelve months after the outbreak area had been restocked.16

This departure from previous policy apparently met with no opposition at the time, and there is no evidence of any debate on the wisdom of considering vaccination, and its serious economic consequences, as either an alternative or adjunct to a "slaughter-out" policy. It was merely accepted that Australia needed a vaccine production facility apparently without regard to whether or not vaccination would or should be considered. This was to have important repercussions later, and it is interesting to note here the way in which large policy issues, in this case the use of vaccination as a disease control measure against FMD, and the establishment of a vaccine production unit in the laboratory, can be defined by earlier, smaller decisions.

The final important feature of the Eichhorn-McIntosh Report is that it makes no reference or recommendation as to who should administer and operate this central laboratory. However, at a meeting with McIntosh and six officers of the CSIRO Division of Animal Health in May 1964, Dr Eichhorn "considered that the (CSIRO) Parkville laboratory was, with some modifications, adequate having regard to the calibre of the staff and facilities including isolation units already in existence."17 Two days later, at the first meeting of the Special FMD Committee, which comprised McIntosh as Chairman, State Veterinary Officers and representatives of the CSIRO Division of Animal Health, there was "complete agreement that a central laboratory for diagnosis, for the production of sera, for complement fixation tests, large animal inoculation and vaccine production was necessary", and that "FMD virus can be safely handled by competent virologists".18 Furthermore, it was agreed "that the CSIRO Division of Animal Health would be an appropriate body to undertake such a project".19 When the Eichhorn-McIntosh was released, however, all reference to CSIRO involvement was omitted.
It was not until June 1965, that is, more than twelve months after Eichhorn's visit, that the Eichhorn-McIntosh Report was received by the Standing Committee on Agriculture (SCA). At this meeting the Report was referred back to the Exotic Diseases Committee (EDC) for study and comment. The EDC had been set up by the Australian Agricultural Council (AAC),

...to consider and report on the legislative, financial, administrative and technical measures for eradication of serious exotic diseases of animals which may at some future date penetrate the quarantine barrier.²⁰

However, in April 1965, even before consideration by the SCA and AAC consultative mechanism, the then Minister for Health agreed in principle to the establishment of the laboratory, and requested that a cost appraisal be obtained from the Department of Works. In a report to the CSIRO Executive in 1967, Dr. Pierce, then Chief of the Division of Animal Health, claimed that it was at this stage "that CSIRO lost the initiative".²¹ Dr. Pierce continued:

From this period onwards there appears to be no further involvement of the CSIRO Division of Animal Health in the planning and development of the high security laboratory, nor has the Chief of the Division been provided with information regarding the nature of proposals thought to be currently under consideration.²²

Pierce was apparently referring to the fact that although the special FMD meeting agreed that CSIRO would be the appropriate body to undertake establishment of the laboratory, the Department of Health had taken over the responsibility.

The EDC presented a progress report to the 75th Meeting of SCA in January 1966 and stated that in its opinion:

1. The [Eichhorn-McIntosh] Report confirms and expands the Committee's views on the control and eradication of FMD under Australian conditions. Furthermore it emphasises matters requiring urgent attention at Government level.

2. The Summary of Recommendations can be broadly accepted as the basis for national planning, with the probable exception of Recommendation 5.
which is already receiving further attention and Recommendation 10 which is not acceptable.  

Recommendation 10 was concerned with changing the Quarantine Act to allow the Commonwealth to have overall control of eradication without the involvement of the States. Recommendation 5 was concerned with the establishment of high security laboratories in each State and Territory. The EDC concluded that "in view of the high costs involved, a top security laboratory in each State would not be practicable", and a central laboratory only was strongly recommended.

It would appear that at this early stage of the negotiations, the views of those proposing a centralised laboratory had prevailed over those advocating upgrading of State facilities. In earlier discussions, McIntosh was vehemently opposed to a centralised laboratory and the use of live exotic virus for diagnosis and research. These views appear to have changed substantially in the Eichhorn-McIntosh Report which recommended, along with improved State laboratories, a centralised laboratory and the introduction of live exotic virus.

It has been argued that in organising a coalition of implementers, two "principles of implementation" are used. The first occurs when "most of the relevant implementers perceive advantage in implementing", and operates on the system of reward and punishment. The second occurs when implementers are convinced that the plan will go ahead in any case, and therefore shift their perception accordingly. This Benveniste has called the "multiplier effect", and it could explain the change in McIntosh's attitude in the McIntosh-Eichhorn Report. By the time Eichhorn appeared on the scene, the idea of a centralised laboratory appeared well established. Eichhorn's views provided further support for the proposal, and McIntosh's change could be interpreted as a recognition that the laboratory was likely to go ahead and hence continued opposition futile, and that there would be some advantage to him and his Division in supporting the plan and thus influencing its development.
The next phase occurred when the Eichhorn-McIntosh Report was considered by the EDC and the recommendations regarding State laboratories were opposed. Thus, it would appear that McIntosh's earlier views were not accepted, and the proponents began advocating a centralised maximum security laboratory as the one best solution for Australia.

In subsequent reports and histories, the Eichhorn Report, no longer including McIntosh's name, is usually depicted as recommending only the establishment of a centralised maximum security animal health laboratory with no mention of the role of the State laboratories. Furthermore, this Report is depicted as being an authoritative statement of the need for such a laboratory. In later reconstructions of the history of AAHL, the proponents claimed that a problem, namely, how Australia could best protect itself from an outbreak of exotic disease, was identified, and a rational, scientific solution, namely the establishment of a maximum security laboratory, was found by Eichhorn. This argument overlooks the activity and discussions in progress prior to Eichhorn's visit, the participants in those discussions, the wider context, and the politics of selecting an "expert" whose responsibility within the FAO was setting up diagnostic and vaccine production laboratories.
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CHAPTER IV
CSIRO INITIATIVES

The view held by Dr. Pierce, Chief of the CSIRO Division of Animal Health replacing Dr. Gregory, that CSIRO had lost any initiative or involvement in establishing the laboratory, led to a concerted effort on his part to redress this situation. In a report to the CSIRO Executive in 1967, Pierce supported the establishment of the laboratory, arguing that:

"Complete dependence on overseas laboratories to confirm the diagnosis of important diseases exotic to Australia and to provide essential vaccines and antisera... is a dangerous dependence for a country geographically isolated and economically dependent upon its animal industry."\(^1\)

He also maintained that serious delays could occur, and experience would not be gained in the diagnostic techniques.\(^2\)

To justify CSIRO involvement in this laboratory, Pierce pointed out to the Executive the responsibilities already carried by the CSIRO Division of Animal Health: the Chief of the Division of Animal Health acted as Chairman of the Exotic Disease Diagnostic Subcommittee, and the Head of the Virology Section of the Division of Animal Health was also a member. The Chief was also a member of the Exotic Diseases Committee "largely to convey technical information to the State Veterinary Officers (CVO)."\(^3\) Dr. Pierce admitted that:

"... this type of work would not appear to be within the normal terms of reference for a CSIRO Division, but unfortunately there are no other authorities with comparable facilities or knowledge."\(^4\)

The Division of Animal Health was also responsible for confirmatory diagnoses
where these could be made in Australia, was recommended to be responsible for obtaining and maintaining in a reliable state and under adequate control, diagnostic antisera for exotic diseases, and was already engaged in research on exotic diseases. Furthermore, Pierce claimed that because the Division of Veterinary Hygiene within the Department of Health is largely administrative, advice from the Division of Animal Health was requested at extremely frequent intervals.\(^5\)

Pierce argued that in view of the responsibility already carried by the Division of Animal Health, and the lack of research experience and specialised knowledge in the Division of Veterinary Hygiene, the CSIRO Division of Animal Health would be the appropriate body to develop a laboratory.\(^6\) Further arguments presented by Pierce were that a serious programme of active work would be required to maintain staff interest, especially in the absence of an outbreak, that a separate organisation would compete with the already limited supply of virologists, and that limited high security laboratories and animal accommodation had already been approved and financed by CSIRO.\(^7\)

At a full Executive meeting of CSIRO in September 1967,

It was agreed in principle that CSIRO would be the appropriate organisation to accept the responsibility for maintaining a high security laboratory and that a more comprehensive statement should be prepared on the need for such a laboratory and lines of work that might be undertaken. Steps should then be taken for a submission to be prepared which might be presented to Cabinet jointly by the Minister for Health and the Minister for Education and Science recommending the establishment of a high security station.\(^8\)

A week later Sir Fredrick White, Chairman of CSIRO, wrote to the Minister for Education and Science, Mr. Gorton, and enclosed a letter for him to send to the Minister for Health, Mr. Forbes, asking for consultation between CSIRO and the Department of Health.\(^9\) In his reply, Forbes stated that:
The question of establishing a high security laboratory has been under investigation by my Department for some time... and a preliminary cost estimate of $2,000,000 has been obtained from the Department of Works.10

Following Eichhorn's visit, McIntosh had been busy preparing Cabinet submissions requesting approval to establish a laboratory at North Head, Sydney, based on the Plum Island laboratory design. The Department of Works estimate of $2 million in 1966 was based on the Plum Island design which had been supplied to McIntosh by Callis, the Director of Plum Island.11 In 1966, the First Assistant Director-General (Management) of the Department of Health, Mr. Dunlop, visited Plum Island in order to report to the Minister on the financial and administrative aspects of the laboratory project. However, despite this progress, McIntosh was advised by Daniels, the Assistant Director-General of Health, that the Cabinet submission was too long, and furthermore, the proposal was so big and important that Cabinet was not likely to agree to its establishment on a single consideration of the matter.12 Daniels then suggested that McIntosh prepare a brief document with recommendations to set up an ad hoc committee comprising Ministers for Health, Primary Industry, CSIRO and Treasury to study the proposal and report to Cabinet.13 Furthermore, difficulties were foreseen in securing the site at North Head, and it was suggested by Daniels that approval be sought in principle without specifying a particular site.14

The establishment of an ad hoc committee was agreed to by McIntosh and the Director-General of Health. In reply to CSIRO's request for consultation, the Minister for Health stated that he proposed "to seek Cabinet's concurrence to the formation of an ad hoc committee of Ministers to consider the implication and report back to Cabinet."15 The Minister for Education and Science, in his reply, suggested "that before any committee of Ministers be considered, discussions between your Department and the CSIRO be held."16 Following this and further pressure from the Minister for Education and Science and the CSIRO, the Minister
for Health eventually arranged for consultation between the CSIRO Division of Animal Health, the Department of Primary Industry, the Department of Health and the Treasury and the first meeting took place on 9th April 1968 with McIntosh as Chairman.

The agenda for this interdepartmental meeting was prepared by McIntosh and contained a history of the laboratory beginning with Dr Eichhorn's visit, as well as a three page statement of the Department of Health's attitude on the need for the laboratory. Since no terms of reference had been laid down, McIntosh proposed the following:

To consider and report upon the desirability of setting up a top security exotic animal disease laboratory in Australia with particular reference to:

a) functions of the laboratory
b) need for and advantages of such a laboratory
c) possible disadvantages
d) precautions to prevent escape of disease agents
e) criteria in selection of a site
f) staff requirements
g) cost of construction and equipment
h) annual running costs
i) control of the laboratory i.e. Minister and Department, Advisory Committee. 17

In the Agenda Paper, the argument of increasing risk due to "the great increase in volume and diversity of world trade, the speed of transportation, the accelerated immigration intake and increase in tourism" 18 was again put forward, along with indications of the cost of an outbreak. It was also argued that Australia should not be totally dependent on overseas laboratories and that these laboratories could not be expected to perform follow-up testing after an initial diagnosis. A further justification for the laboratory, which had not been put forward before,
was the development of safe procedures for the testing of imported livestock.

Following the recommendations of the Eichhorn-McIntosh Report, McIntosh also proposed vaccine production as a function. However, he argued that this "should not be publicised as a public demand for vaccine in the event of an outbreak of, for example, FMD, may run contrary to the slaughter-out policy envisaged for most parts of Australia."\(^{19}\) This would suggest that McIntosh had no faith in primary producers recognising the serious economic consequences of a loss of FMD-free status which would follow if vaccination were undertaken. McIntosh's own estimation at that time was the loss of the US market valued at $100-150m as well as a lowering of the nett annual value of livestock production by $400-500m.\(^ {20}\)

Following this first meeting, Pierce wrote to the Chairman of CSIRO stating, "this committee was quite incapable of discussing in any useful way the technical aspects involved".\(^ {21}\) White replied that the meeting followed "the normal pattern of what I call inter-departmental committees. I have been involved in several and one usually finds the majority of the members are quite technically uninformed."\(^ {22}\)

This scientific and technical expertise gave Pierce a considerable advantage over other members of the IDC. It has been argued that "the one reliable way of prevailing with a departmental point of view is to establish its legitimacy over and above other views."\(^ {23}\) This legitimacy mostly stems from above, with departments appealing to their Minister's prestige in Cabinet, or to Prime Ministerial support, or the position of their department in the "pecking order". However, according to Painter and Carey, "the major independent resource that departments have at their disposal . . . is skill."\(^ {24}\) Once the proposal to establish the laboratory was defined as scientific-technical, CSIRO's claim to skill or expertise provided grounds for its inclusion on the IDC, as well as considerable influence in the decision-making process.

This first meeting of the IDC accepted that there was a need for such a
laboratory, and formed as its terms of reference those put forward by McIntosh in the Agenda Paper. In addition, possible methods of financing both construction and running costs were to be considered, and it was also agreed that there should be consultation with primary industry organisations.25

Consultation with primary industry organisations was added to the terms of reference at the request of the Secretary of the Department of Primary Industry, 26 and it is interesting to note that these groups had not been involved in any discussion up until this stage. It has been argued that supposed beneficiaries are seldom involved in the early planning stages, where efforts are concentrated on establishing the support of experts and those with the authority to implement the proposal.27 Beneficiaries, Benveniste claims, only become involved much later and then "only to the extent that they can influence implementers.28

Although all members of the IDC agreed to this consultation, before it could be implemented, Pierce suggested that the views of the States should first be sought through the AAC.29 This effectively put aside any participation by primary industry groups, as the idea was not raised again. Nevertheless, some primary producer groups did communicate their views. In 1967, the Australian Wool and Meat Producers Federation wrote to the Department of Health stating that they were opposed to any extension of laboratories which would involve experimentation with exotic diseases in Australia30, but these views were not expressed at the IDC, nor apparently thought an important consideration. The Australian Meat Board informed the Department of Primary Industry of a resolution by them in December 1968 that they were not in favour of a maximum security laboratory31. The Farmers Union of Western Australia wrote to the Director of Veterinary Hygiene in June 1968, asking if facilities were available in Australia, or if there were plans for such facilities, for diagnosis of exotic diseases. McIntosh replied that "the question of establishing a high security exotic diseases laboratory is at present being closely examined in this Department"32, but their views were not sought. Thus, it would
appear that at this stage at least, objections were not considered a serious obstacle, and consultation meant informing primary producers that decisions would be taken, rather than seeking their views. At the same time there appeared a number of newspaper articles quoting Pierce on the need for the laboratory.33

The first IDC meeting closed after establishing agreement on the first five items, and a second meeting was held on 15th August to cover the remainder of the terms of reference. McIntosh again produced an agenda paper for this second meeting putting forward his Department's views. He argued that since "there would be no direct benefit to the livestock industries from the work of the laboratory ... it should be wholly financed by the Commonwealth."34 The laboratory, he claimed "should be regarded as a form of national insurance in its quarantine, vaccine production and research functions."35 This argument of the laboratory as a form of insurance was to be used extensively in later justifications of the laboratory.

The most controversial item to be discussed at the IDC was the control of the laboratory. McIntosh stated in the agenda paper:

... it is considered that the Laboratory should be entirely separate in control and operation from any other animal disease laboratory in Australia.

It may be suggested that the laboratory could be attached to a research organisation such as the CSIRO. However, it must be realised that the manufacture of vaccine, the investigation of quarantine problems and the diagnoses of disease (especially on a continuing basis as an integral part of disease control measures), are not functions of the CSIRO whose efforts are directed towards planned uninterrupted long-term research projects. Further, the CSIRO has no quarantine responsibility and this project is essentially part of the Commonwealth Quarantine functions.

In the circumstances, therefore, it is considered that as the Department of Health controls Australian quarantine matters, the overall control of diagnosis, research and vaccine production in respect of exotic animal diseases, which would mean the importation of exotic disease viruses, should logically be vested in this Department and the Minister for Health.36
This strong statement from McIntosh led to Pierce asking for Executive support to state the case for CSIRO having responsibility for the laboratory. In a letter to Dr Day, a CSIRO Executive Member, Pierce wrote: "most of the views I would express, although I believe significant, are for the most part a matter of opinion, that is, none of them is compelling". 37

In an effort to establish CSIRO's expertise, he then went on to list the following 14 arguments supporting CSIRO control of the laboratory:

a) That the Department of Health is not a research organisation and could less readily provide the correct intellectual climate for a satisfactory research establishment.

b) That recruitment of scientists will be extremely difficult for any organisation, but that the CSIRO is more likely to attract men of the calibre required.

c) That CSIRO research scientists' salary scales are more attractive than those that are likely to be offered by the Department of Health.

d) That the Division of Veterinary Hygiene has no research establishments nor research experience (nor for that matter experience in vaccine production) and that research scientists would not be attracted to work in such a Department.

e) That the CSIRO Division of Animal Health has already constructed high security large animal virus research facilities which have now been functional for several years and have been shown to work. In other words, that we already have experience in carrying out research in laboratories and animal accommodation approaching the very high security conditions required for the study of exotic diseases.

f) That CSIRO has pioneered veterinary virology in Australia and has, in our opinion, the best virology unit in Australia regarding research and diagnosis problems associated with exotic diseases.

g) That CSIRO already has the responsibility for diagnosing or confirming diagnosis of certain exotic diseases of viral origin.

h) That the Virology Section of the Division of Animal Health already holds in quarantine diagnostic reagents for certain exotic diseases.

i) That CSIRO Division of Animal Health virologists have already been abroad and have studied the laboratory aspects of serious exotic diseases. Also they have already carried out successful studies of the precise nature that would be conducted in the proposed Australian high security laboratory in overseas high security laboratories; for example, studies on the susceptibility of Australian native fauna to FMD virus. Therefore our scientists already have some training and experience in the particular
fields relevant to the high security laboratory.

j) That the CSIRO Division of Animal Health has trained scientists who are already carrying out experiments designed to determine what vectors of certain serious exotic diseases occur in Australia.

k) That the Chief, Division of Animal Health, or a deputy, is responsible for chairing the only two Expert Panels to the Exotic Diseases Committee, i.e.,
   i) Expert Panel to draw up procedures for the diagnosis of exotic diseases
   ii) Expert Panel on Entomology.

The bulk of work on both these Panels is carried out by officers of the Division and there is great dependence on their knowledge and scientific judgement in making their recommendations to the Exotic Diseases Subcommittee.

l) That the CSIRO Division of Animal Health Virology Section enjoys the confidence of all State Veterinary Departments.

m) That the public may have some misgivings with regard to safety factors involved in a high security laboratory. However the public has great confidence in the CSIRO and may be more prepared to cooperate and trust a research organisation, such as CSIRO, than a Government Department with no research experience.

n) That the CSIRO does mass produce at least one vaccine.

Pierce, however, went on to point out that the Division of Veterinary Hygiene was responsible for quarantine matters: "this is undeniable and I feel that we should concede this at the outset and try to gain the confidence of the Committee, and subsequently Cabinet by taking a reasonable attitude."

The importance of being seen to take a "reasonable" view is spelled out even more clearly further on in the letter. Pierce wrote:

Should the Executive agree in general with the suggestions I have made, the outcome is likely to be a submission to Cabinet which would not be unanimous. Since Treasury will not favour Health or CSIRO, it is almost certain that we will not get a majority view in CSIRO's support.

It is possible that the Department of Primary Industry (Mr Thornton) might support our view, so that we could get 50% support, otherwise we would only have a minority view. The importance of an Executive decision is that if I maintain CSIRO's view that the research laboratory should be its responsibility, and assuming that I am unable to win the Department of Primary Industry let alone the Department of Health to our view, then we must hope that Mr Fraser [Minister for Education & Science] would support our view when the submission is debated at Cabinet level. It is perhaps
more important that we should appear to take a reasonable view to facilitate the decision at Cabinet level.\textsuperscript{40}

The suggestion put forward by Pierce involved dividing the facility into "three separate units within a quarantine confine".\textsuperscript{41} The arguments used to support this plan were that attenuated virus vaccines cannot be manufactured where virulent viruses are held or are under study; thus vaccine production must be separate from research. Furthermore, animals held in quarantine cannot be held in the same area as animals exposed to experimental infection with exotic diseases.\textsuperscript{42} Therefore, Pierce argued that:

it seems reasonable that we might propose a three-part system in which the CSIRO should be responsible for the high security research laboratory ... The CSL, which is part of the Department of Health, would be responsible for the vaccine production unit. The Division of Veterinary Hygiene would be responsible for the quarantine unit.\textsuperscript{43}

As with the discussion about taking a "reasonable attitude", Pierce again made explicit the political dimensions of the issue. He continued:

At present I have no views as to how such a system could be made to work but I think that we would lay ourselves open to much of the criticism which I would level at the Department of Health if we made a bid for complete control of the whole complex.\textsuperscript{44}

The CSIRO Executive agreed that Dr. Pierce should "be empowered to put forward the view that CSIRO should be responsible for the research programme associated with exotic diseases but that CSIRO should not become involved in the other activities."\textsuperscript{45} Five days after this Executive decision, Pierce and Day met with Fraser, the Minister for Education and Science, "to convince him" that CSIRO should administer the laboratory.\textsuperscript{46} Fraser

... accepted the need for a laboratory in Australia and the desirability of CSIRO being responsible for the research wing. He stated that the Department of Health should be responsible for the quarantine and production aspect and hence that the undertaking should be a joint one between CSIRO and the Department of Health.\textsuperscript{47}
The importance of Fraser's support was recognised by Pierce. In a letter to a colleague, Pierce stated that:

CSIRO's opinion regarding their responsibility for the research and diagnosis laboratory is likely to be a minority view [at the IDC]. However, this is not as certain as it might seem because Treasury and Primary Industry may act as observers only so that the difference of opinion will only arise between myself and the two members from the Department of Health.

I have anticipated the problem as far as I am able and had the opportunity last week to discuss the whole question with the Minister for Education and Science and, in confidence, I found him sympathetic to my point of view. This is important because Cabinet will make the final decision.

One of the problems of a departmental system of government is that demarcations of areas of responsibility are often artificial. Furthermore, overlaps are created when new problems arise, when new solutions are found, when issues expand or when departments set out to capture new programmes. This problem is exacerbated when departmental representatives act as delegates, defending departmental interests. This tendency for departments to pursue particularistic goals is defined by Painter and Carey as "departmentalism" and occurs when each department views as 'critical' some fairly narrow range of matters central to the departments own developed sense of 'mission', and hence subverts attempts to impose a collective sense of purpose and an agreed sense of what issues should dominate everyone's attention.

The control of the laboratory became a major issue, with each of the contenders attempting to establish the legitimacy of their claims. McIntosh argued that the functions proposed for the laboratory did not fall within CSIRO's area of responsibility, but were legitimate activities for the Department of Health. Pierce claimed that CSIRO was the only organisation with the required expertise, and also pointed out that CSIRO was already engaged in a number of activities which could be considered outside their normal terms of reference, thus establishing a
It has been argued by an expert insider that "the normal initiator of an IDC is a hunter for a licence to interfere in other people's responsibilities". However, as we have seen, membership can be a matter of bargaining and pleading, in this case at ministerial level. Although the Department of Health, through McIntosh, played a major role by setting the agenda, defining the terms of reference and, to some extent, choosing the members, Pierce was able to exert some influence, not only because he had expertise, but because he had the support of his Minister and was actively negotiating Cabinet support.

This highlights an important aspect of bureaucratic politics. Whilst the departmental system is said to encourage a pluralism of viewpoints, it is believed that coherence is achieved at Cabinet level. This belief in the norms of the Westminster model means that departments look to Cabinet to legitimate interdepartmental ventures. However, although departments may be constrained to some extent by a system which posits control by central command, they can influence ministerial choices by controlling and using information, by gaining the support of other departments, by lobbying Ministers to bring pressure at Cabinet level, and by influencing and manipulating public expectations. In fact, it can be argued that the system provides a decided advantage to departments over ministers. Pitt and Smith argue that ministers are isolated, subject only to the advice of their officials, that they lack the necessary expertise for defining problems and formulating solutions, and because of administrative and organisational complexity, which requires that management be delegated to the civil service, they find it difficult to reach conclusions other than those determined by their advisors. Ministerial and Cabinet involvement is usually quite nominal, and they are often not acquainted with the dilemmas and differences which arise during negotiations.

Although the departmental system is believed to encourage a pluralism of
viewpoints. Painter and Carey point out that if interdepartmental committees do not resolve conflict and provide a unanimous report, they are deemed to have failed.\(^5^9\) Moreover, there is an "additional pragmatic reason why unanimity is sought"\(^6^0\): if minority or dissenting reports are included they tend to be overlooked or defeated in Cabinet. Recognising this, Ives, the Secretary for Primary Industry, wrote to Pierce "indicating that too much divergence of expert opinion could result in the Minister shelving the MSL[Maximum Security Laboratory]."\(^6^1\)

Prior to involvement in interdepartmental discussions, intra-departmental differences need to be resolved and a department "line" established. Pierce had to ensure CSIRO Executive support before entering IDC negotiations, and as discussions progressed and new issues arose, he had to have this support reaffirmed. Departments then promote their interests by attempting to have their view prevail in interdepartmental negotiations. If there are problems in achieving unanimity at IDC level, departmental delegates can negotiate further in order to win more concessions or reduce their losses in some way, but if success seems uncertain, they can lobby for the support of Cabinet Ministers.

In November 1968, Dr Pierce presented a paper on the "Problems of Exotic Animal Diseases in Australia" to the CSIRO Advisory Council. In this paper he stressed the increasing risk of an outbreak due to the growth of international air traffic, the increased speed of travel and the problem of waste food disposal at airports. He also pointed out the value of the export market and argued that the laboratory could be considered an "insurance" against potential loss from exotic diseases.\(^6^2\) This provided Pierce with an opportunity to convince the CSIRO Advisory Council and Executive of the need for the laboratory, to present arguments for CSIRO involvement, and to draw public attention to the potential dangers of the outbreak of an exotic disease.

The paper was the subject of a press release entitled "Livestock Disease Risk Increasing", where it was reported, "there was a growing awareness of the acute
danger to Australia and that a laboratory was "a vitally important facility for which there was an urgent need in Australia". A more sensational treatment of the subject was given in a radio broadcast, where reference was made to the number of ways these "deadly killer diseases", which are "rampant in Europe", could enter Australia, and the "havoc" that would be caused by these "animal killer diseases such as FMD". This would appear to be a deliberate scare campaign. As discussed previously, beneficiaries, or potential beneficiaries, become involved in the early stage of planning only when, and if, they can be used to influence decision makers. In this case, expertise was used not to inform, but to incite public fears, thereby creating public support for the laboratory which could then be used to influence the government.

This publicity precipitated a letter from the Minister for Health (Forbes) to the Minister for Education and Science (Eraser) pointing out "the inherent danger in such press articles" in engendering a lack of confidence in quarantine precautions and disease-free status and that the statements impinged on the responsibility of the Minister for Health. Fraser transmitted this reprimand to the CSIRO adding that it

"... canvassed the need for a high security laboratory ... Such policy matters should not be canvassed in public especially at a time when they are under active discussion and negotiation."

The general public and special interest groups such as primary producer organisations were, therefore, deliberately excluded from any involvement in discussions and decision-making.

The replacement of Gregory by Pierce as Chief of the Division of Animal Health in CSIRO ushered in a new period of CSIRO involvement in the establishment of the laboratory. Pierce obtained Executive support and Ministerial support, had the ear of Veterinary Officers at Commonwealth-States Veterinary Committee (CSVC) and was a member of the Interdepartmental Committee (IDC). And to further
enhance this influence of access and position, he had the necessary scientific expertise, which, both he and White recognised, was lacking in other members of these groups. However, McIntosh had moved from being strongly opposed to the laboratory, to supporting it and claiming it as a Department of Health responsibility. And even Pierce recognised that the Department of Health had some legitimate claims to responsibility. Thus the conflict over the control of the laboratory began.

Although there appeared general agreement at this time by those involved in the discussions of the laboratory, that such a facility should be established, it was necessary to put forward arguments capable of convincing the Government of this. However, conflict over control would not help gain approval, so rather than any overt power play for control which could damage the case for establishment, indirect methods were employed. CSIRO emphasized the research aspects and its scientific expertise and role in veterinary affairs, whilst the Department of Health held firmly to its quarantine responsibility and introduced the new function of developing safe procedures for testing of imported exotic livestock to further justify establishment of the laboratory and to strengthen its claim for control. In this way, the functions of the laboratory became an important aspect of the politics of control and influence.

Dr. Pierce's presentation to the Advisory Council stimulated further discussion by the CSIRO Executive, and he was asked to prepare a paper on the nature of research CSIRO should undertake if a maximum security laboratory (MSL) was constructed. It was pointed out to him that:

There was some feeling that the whole operation was likely to be so expensive that a very strong justification for the research component, as distinct from the diagnosis and production facilities, would be needed if the project was to be contemplated in competition with the other facets of the development of your Division which you would like to see undertaken.
Pierce replied to both Day and Sir Frederick White that "it would be quite impracticable to split off the research from the diagnostic aspects of the laboratory... therefore... we would have to take the responsibility also for diagnosis."^69 However, Pierce was apparently concerned at the suggestion that such a laboratory could have repercussions on the development of the Division of Animal Health. He stated, "if I am to take this seriously, it would influence my attitude, very much, towards being involved in the MSL."^70 The Chairman of CSIRO also pointed out to Pierce that "in the smooth development of research in Australia, CSIRO should not seek to dominate all aspects in perpetuity, but that other instrumentalities should be encouraged to develop first-rate centres of research."^71

Pierce argued that CSIRO had become involved in the MSL for two reasons; first, that he was "concerned about the marked lack of progress" and this concern was shared by "State colleagues who considered that only a Commonwealth organisation could resolve the deadlock"^72, and second, "that the Department of Health, as it is presently constituted and as far as we can see is likely to be for some time to come, was unsuitable as a major influence in developing the MSL."^73 Thus, he concluded, "we seem to be, in our own opinion and I think in the opinion of the States, the only alternate organisation which could accept a national responsibility of this type."^74

The influence of the CSIRO is reflected in Pierce's statement that:

Thanks to the effort of the Chairman, we have achieved the first objective [i.e. progress towards the development of a MSL] most satisfactorily, and have played some small part in influencing the general concepts of the plan for the MSL through the IDC and the CSVC Sub-committee.^[75]

In deference to the views of the Chairman, Pierce put forward a modified proposal that "the laboratory should be launched as a Commission with an Advisory Council on which CSIRO might be represented."^76 This proposal, he argued,
would go a long way to implement your [i.e. White's] views, ... could resolve the differences of opinion on the IDC ... [and] would overcome the administrative difficulties (which I could see only too clearly, but was unable to resolve in my own idea of a three-part system - CSL, CSIRO and the Department of Veterinary Hygiene).\(^77\)

He also suggested that "the Government would find a single authority much more attractive."\(^78\)

Pierce continued to put forward arguments for CSIRO's involvement in both diagnosis and research in an effort to gain Executive support. He argued that:

The major reason for linking diagnosis with research is that competent virologists cannot be held 'on ice' waiting for an occasion to attempt a diagnosis in the unusual event of a suspected outbreak of an exotic disease. In my view, it would be essential that they should be engaged in research, not only to retain their services, but also to maintain their interests and the manipulative efficiency of themselves and their technicians, also to have systems of diagnostic techniques functioning smoothly.\(^79\)

He stated that "the prime justification for the MSL was for the rapid and accurate diagnosis of any disease which may penetrate the Australian quarantine barriers"\(^80\) and that "the research aspect would have to be considered secondary to the diagnostic responsibility of the MSL."\(^81\) However, he pointed out that the Executive "may have gained the impression that diagnosis would be a continuing and large-scale activity"\(^82\) when in fact "diagnosis would not be a continuous burden".\(^83\)

By January 1969, Pierce appeared to have regained his confidence that the MSL would not jeopardise his Division's resources. He wrote to the Executive, stating that he could not accept the view that CSIRO involvement would have repercussions on the general development of the Division. I [i.e. Pierce] appreciate that this attitude may have developed with the Executive now that they are better informed regarding the possible cost of the MSL, but in our earlier discussions in Canberra, I expressed the view that the project should be handled as a separate 'package deal' quite divorced from our normal requests on Treasury.\(^84\)

Nevertheless, after informal discussions with the Chairman and Dr. Day, Pierce
changed his view and agreed that the Department of Health should have primary responsibility for the laboratory, although he recommended that an Advisory Committee containing CSIRO should be established.\footnote{85}

In a letter to the Minister for Education and Science, the Chairman of CSIRO explained that the CSIRO Executive had decided not to

\ldots press to be given primary responsibility for the operation of the laboratory as it is now envisaged \ldots [because] although called a laboratory, [it] will have to deal with a wide-range of problems involving diagnosis of diseases and the production of vaccines and it is improbable that there will be as big a call for high level research as we originally had thought. However, if viruses of exotic diseases are introduced into the MSL for experimental purposes we would like to play some part in the research thus involved.\footnote{86}

However, the evidence would suggest that the reason for CSIRO's withdrawal of its claim to administer the laboratory, was Ives advice of a "cautious step by step approach" and the avoidance of conflicting expert opinion which could result in the project being shelved by Cabinet.\footnote{87}

At the next full Executive meeting in February 1969, the following statement was made:

It was understood that the Department of Health considered it was its responsibility to manage the laboratory if the Commonwealth decided to proceed with its construction. It is not clear at this stage if viable viruses would be introduced; if not, there appeared to be little point in CSIRO being responsible for the research. If viruses were to be introduced it was agreed that the Executive should reconsider the attitude to be taken by CSIRO.\footnote{88}

There are two interesting points about this Executive meeting. First, was a brief reference to a visit by Sir John Ritchie, former Chief Veterinary Officer for the United Kingdom, who "had advised strongly against establishing this laboratory in Australia due to the likelihood of quarantine measures breaking down".\footnote{89} Unlike the previous overseas expert, Dr. Eichhorn, Sir John Ritchie's advice appeared to be ignored.
The second was the decision for non-involvement of CSIRO based on the availability of live virus, especially as the arguments put forward by Pierce, and his proposed research function, did not depend on access to live exotic viruses. Pierce stated in a letter to White:

I think that an appreciable component of the research work would be of a somewhat pedestrian nature. If we were ambitious to do more fundamental work, we would require an even larger research establishment and, working with exotic viruses, we would be in direct competition with existing large maximum security laboratories, such as Pirbright and Plum Island. To my mind this would be a rather irresponsible approach i.e. to carry out large scale research using exotic viruses in a country such as Australia. The more fundamental research could probably be done under considerably less stringent security conditions using viruses already present in the country.90.

In this same letter, Pierce included, as an Appendix, "Functions of the Research and Diagnostic Laboratory, (the possible CSIRO component)". Of these eight functions, four were directly related to diagnosis. They were:

- Diagnosis of FMD and other serious exotic diseases.
- Isolation and typing of virus from material derived from animals suspected of suffering from exotic diseases.
- Investigation of quarantine problems of exotic diseases in relation to the importation of animals and animal products with the general purpose of eliminating disease risk following their importation.
- The development of improved techniques for diagnosis.91

Two other functions proposed were:

- Maintenance and/or isolation and identification of viruses suitable for the manufacture of vaccines against specific exotic diseases.
- Provision of some instruction for skilled personnel on exotic diseases.92

The first of these would appear to combine a diagnostic function with the vaccine production function, whilst the second suggests a training function rather than diagnosis or research.
The remaining two functions put forward by Pierce were concerned directly with research, however they did not provide compelling arguments for the need for a maximum security laboratory to undertake this work. These functions were listed as:

Research into FMD and other exotic diseases of animals including arthropod-borne diseases and their vectors. (However, under this heading and after sober consideration, we feel that this research, although important, would be a very limited investigation, in large animals, in the absence of the specific disease from Australia. In other words, we cannot emphasize this aspect of the research component and would feel that, if money and manpower were provided, much of this work could be done in overseas exotic disease laboratories with probably less risk to Australian livestock.)

The investigation of the susceptibility of Australian fauna to exotic diseases. In this respect, as with Item 5, if money, men and time were made available, some at least of this work could be done overseas. Also the same restrictions could apply to the infection of large numbers of indigenous animals with certain exotic disease viruses.93

When Pierce was requested to prepare this paper on the nature of research to be undertaken, it was suggested to him by Day, that since "the whole operation was likely to be so expensive, a very strong justification for the research component, as distinct from the diagnosis and production facilities would be needed."94 However, it would seem that when Pierce could not provide this "very strong justification", which would have given CSIRO an advantage, he instead proposed that CSIRO be responsible for diagnosis, a function whose justification was considered apparent. Despite Pierce's arguments for the desirability of CSIRO involvement in both diagnosis and research, and his renewed confidence that the laboratory would not compete with his Division's funds, the Executive decided not to press for the role of administering the laboratory.

On the other hand, the Department of Health had a legitimate claim to matters concerning quarantine and vaccine production. The Eichhorn Report had recommended vaccine production as a function for the laboratory, and the Commonwealth Serum Laboratory was already established within the Department of
Health. The introduction of quarantine testing was also clearly within the Health Department's area of responsibility. Furthermore, as chairman of the IDC, McIntosh had some influence on the membership of the IDC, its terms of reference and the outcome of its negotiations. So at this stage McIntosh appeared to be in a strong position to exert considerable influence on the future of the laboratory.

The functions proposed for the laboratory played an important role in determining control of the facility. Once it became apparent that Health was not necessarily the only contender and that CSIRO was actively seeking control, functions were included and described in such a way as to enhance the arguments for control by a particular group. So the functions proposed reflected particular expertise or areas of responsibility as well as providing further justifications for establishing the laboratory.

As discussed earlier, there is considerable pressure for IDC's to produce unanimous reports. In a letter to Fraser, the Chairman of CSIRO stated that McIntosh had "expressed the view that the whole matter is complicated and involved, but he is confident that something will be worked out to the satisfaction of all parties and that a unanimous report will be prepared by the IDC." However, rather than engage in direct and overt conflict, "the process is civilised, characterised by logical argument (though often forcefully presented) and by compromise within the limits set down by departmental views". Painter and Carey argue that in Australia "reciprocity at the departmental official level is a factor influencing the operation of IDCs", and that

... in working in this consensus fashion an official may not end up with the report he would most have liked, but he has not alienated himself from the bureaucratic community, he has done his best to prevent departmental interests being eroded too far, and he has accepted that fellow IDC members must be accommodated in the same way.

The change in attitude by the CSIRO Executive which removed CSIRO's claim
for control meant that McIntosh's bid prevailed and, for the present, any major conflict was avoided. However, the proviso that if live virus was to be allowed, CSIRO would like to be involved, allowed for the possibility of a later bid for responsibility.
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38. ibid., pp2-3.
39. ibid., p.4.
40. ibid.
41. ibid.
42. ibid.
43. ibid.
44. ibid., p.5.
45. CSIRO, Extract of 272nd Meeting of Executive Committee CSIRO. para 14, 8 August 1968.
46. CSIRO, History of Events Leading to the Current Situation (9.4.70) in Relation to the Maximum Security Virus Laboratory.
47. CSIRO, Note for File, M. Day.
48. Letter from Pierce to Steward. 16 August 1968.
50. ibid., p.9.
51. ibid.
53. ibid., p.41.
54. ibid., p.72.
56. ibid., p.51
58. ibid., p.63.
59. ibid., p.73.
60. ibid.
61. CSIRO, History of Events Leading to the Current Situation (9.4.70) in Relation to the Maximum Security Virus Laboratory.
63. CSIRO Information for the Press, Livestock Disease Risk Increasing 13/11/68.
p.1
64. ibid., p.2.
66. Forbes, Letter to Fraser, 28/11/68.
67. Fraser, Letter to White, 9/12/68.
68. Day, Letter to Pierce, 19/11/68.
69. Pierce, Letter to White, 29/11/68.
70. Pierce, Letter to Day, 29/11/68.
71. Pierce, Letter to White, 29/11/68.
72. Ibid.
73. Ibid.
74. Ibid.
75. Pierce, Letter to Day, 16/1/69.
76. Pierce, Letter to White, 29/11/69.
77. Ibid.
78. Ibid.
80. Ibid.
81. Ibid.
82. Ibid., p.2.
83. Ibid., p.2.
84. Ibid., p.3.
86. White (CSIRO) Letter to Fraser, 12/3/69.
87. CSIRO, History of Events Leading to the Current Situation (9.4.70) in Relation to the Maximum Security Virus Laboratory, 9/4/70.
88. CSIRO, Full Executive Meeting, Extract, Para 17, 13/2/69.
89. Ibid.
90. Pierce, Letter to White, 29/11/68.
91. Ibid, Appendix.
92. Ibid.
93. Ibid.
95. White (CSIRO) Letter to Fraser, 12/3/69.
97. ibid., p.72.
98. ibid.
In 1968, a Commonwealth-States Veterinary Committee (CSVC) was established to replace the Biennial Conference of Commonwealth and State Veterinarians. This Committee now met twice a year, and at the first meeting, established an Exotic Diseases Sub-Committee (EDSC), and an Expert Panel for the Diagnosis of Exotic Diseases. At its second meeting in September 1968, the CSVC considered a recommendation from its EDSC that "there is an urgent need for a high security laboratory and that CSVC should set up a working party to consider and report on the proposal."  

The Interdepartmental Committee (IDC) had already been established by this time and had held two meetings. Although the IDC is usually depicted as an independent investigation, and its recommendations used to corroborate and substantiate those of the CSVC Working Party, there was in fact considerable overlap and collaboration. First, three members of the IDC, namely McIntosh, the Director of Veterinary Hygiene, Pierce of CSIRO, and Thornton of the Department of Primary Industry, were also members of the CSVC, and they were all required to take part in any discussion before a recommendation from the CSVC could go to the Standing Committee on Agriculture (SCA). In fact, at a CSVC meeting it was pointed out that:

The ad hoc committee [IDC] is only a reduced CSVC and the additional people [i.e. Carroll, Assistant Director-General, Establishments and Finances Branch, Commonwealth Department of Health, and Virtue, Chief Finance Officer, Social Services Branch, Commonwealth Department of Treasury] would not be deciding technical matters at all but rather feasibility in respect of finance.
Secondly, although Pierce "elected to make no contribution" because of his involvement with the IDC considering the same problem, CSIRO "played a part in the recommendations of the Working Party through Dr. French and Mr. Snowdon" from the CSIRO Division of Animal Health.

Thirdly, in a letter to the CSIRO Executive, Pierce claimed that he thought McIntosh was delaying the IDC report in order to hear the discussion of the CSVC Working Party report, and that since the CSVC hoped that "the IDC report would not be too much at variance with the CSVC recommendations, the Chairman of CSVC was very much in favour of the IDC delaying its report until after this discussion". Pierce agreed that "if it were possible, the recommendations contained in the two reports should be similar".

Again the unanimity expectation is apparent. Even when different groups are reporting on the same proposal, efforts are made to avoid conflict and disagreement. In this way each report supports and reinforces the other and increases the likelihood of acceptance of their recommendations.

At the CSVC meeting which established the working party, McIntosh attempted to reduce the scope of their investigations, arguing that the Working Party should

... confine its attention to questions of the desirability of, the need for, advantages and disadvantages attaching to, and possible functions of such a laboratory ... [since] consideration of details such as possible sites, plans, staff and control of the proposed laboratory would be beyond the capacity of the working party and would represent a duplication of effort since they were under most intensive scrutiny by the IDC.

It is not clear why McIntosh believed these considerations beyond the capacity of the working party, especially in view of the claim that the IDC was just a reduced CSVC, and his proposal was defeated.

The CSVC Working Party, comprising four Chief Veterinary Officers, met in December 1968 and March 1969. Its terms of reference were:
To investigate and report on the desirability of and the need for a facility for diagnosis and research in Australia of exotic diseases and for the preparation of appropriate vaccines, and in particular to report upon—

a) Functions of the laboratory

b) The principles involved in the choice of
   i) Site
   ii) Plans and Facilities

c) Staff required

d) The overall control and supervision of the laboratory

e) Integration of animal quarantine with such a facility

f) Any other related matters.

The CSVC Report concluded that:

There is an urgent need for the provision in Australia of a maximum security virus laboratory, primarily for the purpose of providing facilities for the diagnosis of FMD and for vaccine production in the event of an outbreak in Australia. The laboratory would also provide facilities for diagnosis, research and training in connection with other exotic virus diseases. In addition the laboratory would facilitate the safe importation into Australia of livestock, particularly exotic breeds of cattle.

The arguments used to justify this need for a MSL were that although the present arrangements with Pirbright for initial diagnosis were adequate, follow-up testing may need to be undertaken in Australia. "Further, in the event of a major European war (when Australia could become a target for bacterial warfare), the facilities of Pirbright might be completely unavailable." It was also pointed out that arrangements for diagnosis of other exotic diseases were less satisfactory than for FMD, mainly because of political instability of the countries involved.

In justifying the inclusion of a vaccine production unit, it was argued that:

It seems imprudent in the face of the already adopted policy for use of FMD vaccine in some situations in Australia, to rely upon importation of vaccines produced overseas for the following reasons:

i) No overseas supplier can guarantee to have available at all times stock of vaccine of all strains of FMD or of other vaccines which may be required.

ii) The F&M virus is antigenically somewhat labile and hence the greatest
degree of protection may be expected from the use in an inactivated vaccine of an early isolate of the strain responsible for the outbreak.

iii) The use even of inactivated vaccine of foreign origin cannot be lightly recommended if this can possibly be avoided, due to some risk of introducing into the national herd strains of virus not already in the country.12

It was on the basis of these arguments concerned with diagnosis and vaccine production that the Working Party concluded there was a need for the laboratory.

The functions they proposed were:

a) Initial diagnosis of FMD by CF test and mouse inoculation, using material submitted from suspect cases in the field, which has also been forwarded to Pirbright.

b) Continued confirmation of diagnosis during outbreaks of FMD.

c) Continued monitoring of field strains during outbreaks.

d) Establishment of eradication status by testing large numbers of specimens for FMD at conclusion of outbreaks.

e) Diagnosis of other exotic diseases.

f) Establishment of actual diagnosis of disease outbreaks not proving to be exotic diseases but where specimens have already been submitted upon suspicion.

g) Manufacture of homologous FMD vaccine (only in the event of an outbreak of FMD).

h) Safety and potency testing of FMD vaccine (only in the event of an outbreak of FMD).

i) Manufacture of other exotic disease vaccines if required.

j) Research into problems of exotic diseases.

k) Training of graduate and technical staff seconded from State laboratories in procedures for diagnosis of exotic disease.

l) Processing of specimens from imported stock held in quarantine to establish their freedom from exotic disease.13

An interesting feature of the Report, and an issue which became prominent in later debates, was the safety consideration. The Report stated:
Evidence was presented that it would be technically desirable to manipulate foot and mouth virus in the diagnostic unit in advance of an outbreak for preparation and monitoring of diagnostic reagents and for the training of staff. In the vaccine production unit it would be desirable to actually manufacture vaccine in a run-up exercise and preferably to manufacture occasional additional batches in the interest of developing the efficiency of the unit against the day when an emergency might occur.

The Working Party noted previous records of escape of FMD virus from laboratories leading to outbreaks of the disease, and had in mind the expressed opposition of influential sections of the grazing industry to the use of FMD virus in any Australian laboratory. Consideration was also given to the advice received from Sir John Ritchie and to the evidence of the scientists that the most efficiently constructed maximum security premises could not guarantee against escape of virus due to mechanical breakdown or more likely, human error.

Furthermore, it was learned that there is an agreement between the United States and Canada, (which enjoys a large reciprocal trade in livestock and meat products), that, whilst most exotic disease agents are manipulated at the Canadian laboratory on Gross Ile, FMD virus is not so manipulated there, but only at the USDA laboratory at Plum Island. Whilst it seems impolitic officially to clear with the United States authorities the proposed use of foot and mouth virus in Australia, it might be assumed that manipulation of FMD in this country in advance of an outbreak of the disease could be viewed with disfavour by some of our meat-importing customer countries, including U.S.A.

The Working Party considers that although the proposed facilities should be constructed to the highest possible standards of safety and security, FMD virus should not for the time being be manipulated therein in advance of an actual outbreak confirmed by Pirbright.14

The report also formally addressed the proposal for a high security animal quarantine station as well as the control of the laboratory. When it was first discovered that the CSVC was considering the establishment of the quarantine station, Pierce was warned that "this could strengthen McIntosh's case for this [i.e. the laboratory] to be a Department of Health facility."15 However, it could also be seen as a way of gaining primary industry organisation's support for the laboratory. It was reported that Sir William Kilpatrick, Chairman of the Charolais Society of Australia, after meeting with Mr. Anthony, the Minister for Primary Industry, and Mr. McIntosh, supported the establishment of a maximum security diagnostic laboratory and quarantine station. Sir William stated that "it would seem
that a maximum security diagnostic laboratory would be an essential prerequisite to a quarantine station" and that together they "could facilitate importation of animals which at present must be prohibited".  

The CSVC Report stated that:

There is a pressing national need for the early provision of a maximum security animal quarantine station for Australia which should be conducted in association with and be complementary to the proposed laboratory but not in geographical proximity to it.  

It also stated that "there is a demand from industry for the safe importation of special breeds and strains of a number of species" and that "such a facility would satisfy representation for importation of stock and would remove any incentive for smuggling stock or genetic material".  

There appears to have been no analysis of the viability of such a facility in terms of the benefits obtained or indeed the use which would be made of it. The Report stated, "to satisfy industry requirements the facility should be constructed to provide for the safe holding of at least 200 head of cattle from Africa as this is the most exacting task which the Working Party could visualise". No investigation of the feasibility, desirability, economics or likelihood of providing for 200 head of cattle appears to have been undertaken at this time. During discussions reference was made to the quarantine station being established by New Zealand, however, this facility would accommodate only 16 animals and was not intended for commercial purposes. In subsequent discussions, there was considerable disagreement regarding the size of the quarantine station, even among those who favoured its establishment.  

With regard to the control of the laboratory, the Report stated that none of the Commonwealth agencies with veterinary responsibilities or interests, i.e. the Departments of Health, Primary Industry and CSIRO,
... as at present constituted is suitable to assume overall control and supervision of this laboratory. Neither Health nor DPI has any highly trained veterinary diagnostic and research staff, and while CSIRO has such staff, diagnosis is not a normal part of its function.\textsuperscript{21}

The Report concluded that:

There is a clear need to consolidate veterinary activities with the Commonwealth, and it has long been evident that Australia would benefit from the establishment of a Commonwealth agency such as a Bureau of Animal Health to be responsible for export meat inspection, animal quarantine, and liaison with the States (through CSVC) in the financing and administration of national programmes for control of diseases, such as cattle tick, pleuropneumonia, tuberculosis and brucellosis and exotic diseases when they occur. Such a Bureau could effectively assume the control and supervision of the proposed maximum security laboratory and should preferably be created within the Commonwealth Department of Primary Industry, rather than another Commonwealth department or agency.\textsuperscript{22}

This Report was presented to the third CSVC Meeting in April 1969. At this meeting, Mr. Clay, of the Queensland Department of Agriculture, "drew attention to the earlier view, following Dr. Eichhorn’s visit, that it would be essential to manipulate a virus in advance of an outbreak in order to train staff and perfect techniques."\textsuperscript{23}

Mr. Flynn of Victoria, replied that:

The Working Party had been unanimous in their recommendations, particularly in respect of non-manipulation of FMD virus .... The Working Party had considered three points in coming to this recommendation: there have been escapes of virus from overseas laboratories and these may occur again; following Sir John Ritchie’s visit, the industry had expressed in no uncertain terms its fear of prior use of the virus; and the Working Party considered that this was of sufficient political importance to condemn the whole proposal unless modified as it was suggested; and the considerations relating to overseas trade. On the other hand the Working Party had considered that the laboratory might be less attractive to staff on this account. It had concluded that there would be sufficient problems of attracting and retaining staff to necessitate the laboratory being sited with regard to their convenience and accessibility to colleagues.\textsuperscript{24}

Mr. Gee of the Commonwealth Department of Health, added that he “thought it would be politically irresponsible and therefore practically impossible to contemplate the
use of FMD virus in advance of an outbreak".25

Mr Clay pointed out that he "found it difficult to visualise smooth production of FMD vaccine in a plant not previously in use for this purpose."26 However, Dr. Pierce argued that "it could be used for the production of other vaccines employing similar techniques" and that

... in any case, in an outbreak of FMD, there would be a period of time between diagnosis of FMD and any decision to use vaccine. This might be many months and during this period, vaccine production could have commenced.27

The question of the overall control of the laboratory and quarantine station and the recommendation that a Bureau of Animal Health should be established within the Department of Primary Industry sparked off a controversy, with McIntosh defending his Department's role. He argued that:

Adoption of the present proposal would in effect remove animal quarantine from the Department of Health where it is presently administratively linked with the general quarantine and plant quarantine services. It would be a retrograde step to separate these. The proposed association of animal quarantine with a department such as Primary Industry whose principal concern was an economic one would go some way towards destroying the present very satisfactory image of the quarantine service as being uninfluenced by national trade policies.28

According to Pierce there were two reasons for this proposal for a veterinary bureau within the Department of Primary Industry. In a letter to Gurnett-Smith, CSIRO representative on SCA, he wrote:

First there is at present a complete lack of confidence in the Department of Health's section - the Division of Veterinary Hygiene, and in both Mr McIntosh and his heir apparent, Mr Peisley. Secondly, there is a growing awareness that it is necessary to have stronger central authority to integrate national control programmes and perhaps the maintenance and control of a MSL.29

Following discussions, it was agreed by the CSVC that it would be impolitic to specify a particular Commonwealth department as being the most appropriate to
establish a Bureau of Animal Health, and the recommendation that this Bureau be
set up within the DPI \(^{30}\) was changed to read:

As the direction and administration of the maximum security virus
laboratory and the animal quarantine station would present some
problems, the Commonwealth Government should be invited to give special
consideration to these aspects.\(^{31}\)

CSIRO's withdrawal of any claim to administer the laboratory avoided its
involvement in any controversy over control at this stage. Pierce was instructed to
make no claims towards administration of the laboratory when the working party
submission was discussed at the 4th CSVC meeting.\(^{32}\) However, in September and
October 1969, that is, before the SCA and AAC meetings where the CSVC Report was
discussed, letters were exchanged between White, the Chairman of CSIRO,
Fraser, the Minister for Education and Science, and Anthony, the Minister for
Primary Industry, "indicating that if a Maximum Security Animal Health
Laboratory were to be set up, CSIRO would be an appropriate body" to administer
it.\(^{33}\)

So although it appeared that CSIRO had deferred to the arguments claiming
that the laboratory was a Department of Health responsibility, in fact, informal
moves were being made to gather support for CSIRO control. By apparently
withdrawing from the battle for control at this stage, at least at the
interdepartmental level, a unanimous report recommending the establishment of
the laboratory was able to go ahead, whilst a new campaign was undertaken by
CSIRO on another front. By adopting a strategy of losing a battle, CSIRO apparently
hoped to eventually win the war.

The recommendations of the CSVC Working Party, which were supported by all
the Chief Veterinary Officers (CVO's) , with McIntosh abstaining, then went before
the 82nd Meeting of the Standing Committee on Agriculture (SCA) in July 1969.
McIntosh, who, as Director of Veterinary Hygiene was a member of both the CSVC
and SCA, dominated the SCA meeting, and, as predicted by Pierce attempted to "pour cold water on the idea of a MSL". He began by pointing out some changes which had occurred since 1964 when he and Dr. Eichhorn had reported on the need for a laboratory. He argued that:

Air services have improved in frequency and routing; telephone and other communications with countries overseas have improved; arrangements with overseas laboratories for diagnosis of suspect material have been strengthened. A considerable number of Australian veterinarians have been sent overseas to study exotic diseases. A test of Australian fauna for susceptibility to FMD has been carried out at Pirbright Virus Research Institute. This was done on fauna sent from Australia and by scientists sent from Australia. The advice of experts in this field has been sought. Most of these experts have cautioned against the proposal.

He then went on to review the opinions of these overseas authorities. According to McIntosh, Dr. Jamieson, Director of the Animal Division of the New Zealand Department of Agriculture, claimed that suspected samples should be sent to experienced overseas laboratories. This was to be New Zealand's policy even when their high security quarantine station was operating, and also in the event of an outbreak. Follow-up diagnoses would be made in the field.

McIntosh also claimed that Dr. Kesteven, former Chief of the Division of Animal Production and Health of FAO, had stated that once FMD had been diagnosed at Pirbright, follow-up testing could be made in Australia using immune sera which do not contain virus. McIntosh told SCA that Kesteven had also agreed that overseas laboratories could handle quarantine station testing, and further maintained that Australia should conduct exotic disease research in overseas laboratories. With regard to vaccines, McIntosh reported that Kesteven had stated that:

...by a telephone call to FAO, advice could be obtained as to where vaccine of a particular type or strain of FMD could be obtained. He explained that limited reserve emergency supplies of FMD vaccines are kept at the Virus Research Institute at Pirbright.

Kesteven had also added that "the possibility of escape of virus could not be
discounted. \textsuperscript{37} Furthermore, Dr. Brooksby, Director of Pirbright had informed McIntosh that "he could prepare autogenous vaccine for use within six weeks of receipt of the virus." \textsuperscript{38}

Sir John Ritchie was quoted as having expressed the view that he was

\ldots loath to accept that a country which is free of a virus disease of animals should be working with it even under the very best methods of security\ldots Particularly would I consider that this is a dangerous step for a country which is in a position to set up reliable safeguards against the introduction of disease. \textsuperscript{39}

Mr John Reid, Chief Veterinary Officer of the British Ministry of Agriculture, Fisheries and Food (MAFF), and Professor Jansen, Director of Veterinary Research, Onderstopoort, South Africa, "were unanimous that they would not recommend the setting up in Australia of a maximum security laboratory. Their attitude was: why take the risk of escape of an exotic virus?" \textsuperscript{40}

McIntosh argued that "the advantages of having such a laboratory in Australia must be weighed against the possibility of risk of escape of viruses and the consequences were such an escape to take place." \textsuperscript{41} He then put forward alternative ways of achieving the advantages without the risks. First, he claimed that existing arrangements with overseas laboratories were adequate, pointing out that during a recent New Zealand FMD scare, specimens were flown to Pirbright and results communicated by telephone in three days. Second, follow-up diagnoses could be made using inactivated immune sera. Third, vaccines could be procured from overseas, either from Pirbright or a source recommended by FAO. Fourth, regarding the possibility of testing animals imported to a quarantine station he stated "there is no reason why material would not be sent to an overseas laboratory for testing". Fifth, experience and training could be gained by sending Australians overseas to work in laboratories. And finally, arrangements could be made with overseas laboratories to work on particular research problems. \textsuperscript{42}
He further suggested that as an alternative to a maximum security laboratory, existing laboratories in Australia should be examined

... to ascertain whether one or more could be adapted to meet the requirements of maximum security if and when the need became urgent. If so plans could now be prepared for such an eventuality so that immediate structural alterations could be made and management arrangement planned.43

According to McIntosh, it was "not a case of Australia standing on its own two feet, but rather a case of using the facilities which are continually operating in other countries.44

McIntosh's statements apparently surprised the other members of SCA. Dr. Wishart stated: "I wish I had time to collect my scattered thoughts, but I am most concerned about this turn of events."45 The Chairman of the SCA, Dr. Day, stated that he "presumed[ ] that these opinions were also made known in your discussions at CSVC meetings". When McIntosh answered that they were not, Dr. Day expressed surprise, stating, "it is somewhat strange that at a meeting of such a body, the views you put forward today, or the opinion of people, were not put before the Committee."46

McIntosh replied:

I did not have all of them and as I say, I wanted to get the complete run-down on this and clear it with my own Department's Director General before I put the view forward.47

However, it could be suggested that McIntosh saw little chance of influencing the other CSVC members, and preferred to attempt to gain some support from SCA. The CSVC Working Party were able to put together their report after only two meetings in December 1968 and March 1969. This would seem to indicate a strong concurrence of views on a wide range of issues, since the report dealt not only with the functions of the laboratory but also with its control, as well as the quarantine station.
The SCA Chairman seemed confused regarding McIntosh's views, stating:

... you have indicated that at one stage with Dr. Eichhorn, you were of the view that a MSL should be established and a recommendation was made that way in a report submitted by you and him. What are your present views about the establishment of a MSL? 48

McIntosh replied:

They are that this thing should not be taken without due consideration of the opinion of other people who are expert in these fields and who have been handling these diseases for many years and who have seen the risks and pitfalls entailed. At present I would not care to express an opinion as to whether or not this laboratory should be set up. 49

Dr. Day pointed out that:

... there is such a thing as a time factor, and since Dr. Eichhorn was out here four or five years ago one wonders if sufficient time has not elapsed whereby some definite views could be held and an expression of opinion given as to the virus laboratory at the Department of Health level. 50

A considerable amount of discussion followed, where committee members debated whether to reject McIntosh's contribution, especially the views of overseas experts, or to send the report back to CSVC for further consideration. Interestingly, they did not discuss the alternatives he proposed, nor recommend that CSVC consider these. Eventually it was agreed to send it back to CSVC for further consideration of the additional information provided by McIntosh, and also to further consider possible ways the laboratory might be administered and the advantages and disadvantages of these possibilities, so that when the report came back to SCA, strong recommendations could be made to AAC.

It is apparent that the idea of establishing a maximum security animal health laboratory was by now firmly embedded in the bureaucratic machinery. Collingridge makes a useful distinction between issues that are repeating and those that are non-repeating:
Repeating issues are more general than non-repeating ones, so that decisions about repeating issues form a framework in which decisions about non-repeating issues may be clarified and answered. ... The repeating issues may be regarded as relevant to strategic decisions, which once taken determine a framework for a whole set of lower order tactical decisions whose determination requires consideration of non-repeating issues.\textsuperscript{51}

By separating repeating and non-repeating issues, Collingridge argues that greater efficiency in decision-making can be achieved. Repeating or strategic decisions can be answered once and for all, instead of being reconsidered each time a tactical decision is required. Strategic decisions are complex and open-ended and almost always under ignorance. Unlike tactical decisions, many of which may be justified, since they are made under restricted uncertainty, risk, or even certainty, strategic decisions cannot be justified.\textsuperscript{52} However, because strategic decisions cannot be justified, a number of strategies are developed to avoid criticism, since this would reveal the subjective, biased, value-laden, non-rational nature of the judgement.\textsuperscript{53}

That there was a need to establish a maximum security animal health laboratory was a strategic decision. Once this decision was taken, questions of functions and control became much more straightforward and did not involve a reconsideration of whether or not the facility was required to achieve these goals. As shown in Chapter Two, the issues had been defined and the options selected even before Dr. Eichhorn's visit. At that stage, the only real opposition was from McIntosh himself, and this disappeared when his changed his view in the Eichhorn Report. McIntosh's failure to have alternatives considered at the SCA Meeting in July 1969, can be related to his attempt to challenge a strategic decision. By presenting alternative ways of performing the functions proposed for the laboratory, such as using overseas laboratories for diagnosis, research, training and supply of vaccines, he was forcing a reappraisal of the whole project, a project
which by this time had gathered considerable support and momentum.

That McIntosh attempted to do this now without prior negotiation or consultation, that is, without following the normal bureaucratic procedures, clearly put the SCA off balance. This would appear to reflect an assumption by the SCA that the important strategic issues had been settled and what remained now for consideration was not how best to achieve the stated goals, but whether it was desirable and feasible to establish a maximum security laboratory. McIntosh did not have sufficient influence, credibility or support to undermine the proposal for the laboratory, and the proponents rejected his recommendations rather than subject the proposal to wider critical evaluation.

The SCA next considered the animal quarantine station, and the question was raised as to whether or not it should be considered in its own right, separate from the laboratory. At this stage, the Secretary of the Department of Primary Industry, Mr Ives, spoke at length on a general approach or strategy. He stated that:

There is quite a bit of reservation at Commonwealth Government level about the wisdom of trying to establish a maximum security laboratory in this country, particularly because there is a very wide spread fear that if the virus were brought in it might get out. None of us ever wants to put that in an official document but that is the underlying situation. He then suggested that the CSVC might rewrite its paper, pointing out that:

...there are two separate and different, but equally strong cases for the MSL. One is the defence and that has been canvassed very fully. The other is positive. If you had such a laboratory and established such a quarantine station, you could bring new material into Australia.

He elaborated on how this positive aspect would "justify the existence of the laboratory even if we never have a crisis." Following Ives' speech, it was agreed that both the laboratory and quarantine station, and ways they could be administered, should be dealt with again by CSVC and then be reconsidered at the next SCA meeting.
The CSVC met again in November 1969 and noted in its second report the suggestion from SCA that:

...in its reconsideration, CSVC might present the proposition in a more positive way. The primary function might be facilitation of the importation of genetic material, a continuing research programme could be envisaged and the laboratory, once built, would constitute a basic defence against incursion of exotic disease.57

Although it was supposedly because of this new information provided by McIntosh to SCA that the report was sent back to CSVC for reconsideration, the Chairman of the Working Party, Mr Irving, informed the CSVC at this meeting that:

The first report had been written by the Working Party after consideration of the advice received from those authorities who had been quoted from Mr McIntosh at Standing Committee and that all had supported the proposal as now advanced by the Working Party.58

This claim is not, however, supported by the available evidence. Neither McIntosh nor the Working Party produced any of the correspondence concerned, although the Chairman of the CSVC said it could be produced at the appropriate time. Mr. Thornton, of the Department of Primary Industry, stated that he believed that the CSVC had adopted this attitude because "McIntosh did not produce his correspondence with these people but only quoted their views". 59

Although the CSVC had corresponded with Sir John Ritchie prior to finalising their first report, Dr. Jamieson of the New Zealand Department of Agriculture and Mr John Reid of the British Ministry of Agriculture, Fisheries and Food (MAFF) were not contacted until September 1969, that is, after the SCA meeting where McIntosh quoted their views. There is no evidence that the other authorities cited by McIntosh, namely Professor Jansen of South Africa or Dr. Brooksby of Pirbright, were contacted at all. Furthermore, of the three contacted, none supported the CSVC proposals.

The members of the CSVC were made aware of Sir John Ritchie's opposition to
the establishment of an exotic diseases laboratory in Australia when Dr. Pierce drew
their attention to a newspaper report of Sir John's address to representatives of the
Australian Meat and Allied Industries. Pierce pointed out that:

... the report contained a number of statements to graziers which were
superficially at variance with the official Australian views on preparation
for dealing with outbreaks of foot and mouth disease.60

Sir John Ritchie had held the position of Chief Veterinary Officer of the
British Ministry of Agriculture, Fisheries and Food (MAFF) from 1952 to 1965 and
was Chairman of the European Commission for the Control of Foot and Mouth Disease
from 1959 to 1965. At the time of his visit to Australia, which was sponsored by the
Post Graduate Foundation in Veterinary Science within the University of Sydney,
he was principal of the Royal Veterinary College, London. According to the press
report, Sir John had stated that from the point of view of diagnosis, it was not
necessary to establish such a laboratory, first, because "it did not take long
nowadays to get an accurate diagnosis"61, and second, that "it was better to send
material to a centre like Pirbright where a great deal of diagnostic work was done,
than to a place which did not have this experience."62 He also claimed that
"maximum security was a matter of degree"63, pointing out that escapes had
occurred in the past, that there was no great risk of introducing serious diseases
into Australia, nor was it likely to be brought into the country on incoming
travellers' clothing or footwear.

It was agreed that the CSVC should seek "clarification" of Sir John's views.64
and a letter outlining some of the CSVC proposals (notably excluding any reference
to FMD) was sent to him inviting comment and seeking "approval to use these views
in support of the submissions we may make to the Government".65

Sir John's reply made it quite clear that his views were more than
"superficially at variance" with those of the CSVC. He pointed out that despite
precautions, there is some minor degree of risk of escape of viruses from laboratories, and that he considered working with exotic viruses "a dangerous step for a country which is in a position to set up reliable safeguards against the introduction of disease." Furthermore, he suggested that it would be safer and less expensive to undertake research and train workers overseas, and that reliable safeguards could easily be established which would allow safe importation of live animals and semen. Not surprisingly the CSVC did not use these views to support their proposal.

The views of Mr Reid (British MAFF), which were sought almost a year later, supported those of Sir John Ritchie. He argued that there appeared little risk of an outbreak of exotic disease in Australia: "I know of no other country in the world that has built up through the years such a system of safeguards," and that risk of escape of viruses was an important consideration: "In a country like Australia security would have to be one hundred per cent and remain so for the whole duration." His only positive consideration was that it "would open up new interests and opportunities for veterinary and scientific research".

Dr. Jamieson, whilst favouring the establishment of maximum security quarantine stations, was strongly opposed to the development of the laboratory. He stated:

From the advice I have received from overseas workers and my own experience as quarantine officer, I would regard a virus laboratory, used for exotic disease viruses, even if specific foot and mouth disease virus was not included, as being a hazard which in spite of the utmost precautions would be ever present, and,

I do not agree with the proposal to develop a maximum security virus laboratory for the purposes of examining viruses and studying viruses which are not present in a country.

He also pointed out that if such a laboratory was established in Australia, it could affect the existing free trade agreement between Australia and New Zealand. With regard to the CSVC arguments of the need for the laboratory to undertake
diagnostic tests on livestock imported into the quarantine station. Dr. Jamieson argued that there would be "greater acceptance of the authenticity of tests done... in recognised reference laboratories" and that in discussions with the Directors of these laboratories he had "no indication that they would put any restrictions on the number of samples being sent to them."  

It is difficult to understand how this advice could have been interpreted by the Working Party as supporting their proposal. The proposal that Australia should establish a maximum security animal health laboratory had been strongly advanced by the CSVC without recourse to outside advice. There was no further discussion about the alternative proposal by McIntosh, nor about about the controversial expert opinion. The second report of the CSVC Working Party, which now emphasized the importance of establishing the laboratory and quarantine station in order to facilitate the importation of genetically useful stock into Australia, was presented to SCA in January 1970.

The SCA appeared already to favour the establishment of the laboratory, and Walter Ives had advised on the method of presentation of the CSVC Report most favourable to acceptance by the government. Furthermore, the members of SCA appeared reluctant to accept McIntosh's criticisms of the proposal or the alternatives he presented. At this meeting in January 1970, the Chairman of the CSVC pointed out to the SCA that the CSVC is the most senior veterinary authority in Australia whose function it is to advise Commonwealth and State governments on all matters relating to animal health and disease control. This assertion of the authority of the CSVC effectively quashed consideration of McIntosh's dissent. The SCA submitted its report to the AAC in February 1970, recommending the CSVC proposals be implemented as a matter of urgency.

At this AAC meeting Mr Anthony, Minister for Primary Industry and Chairman of AAC, stated: "I think it is quite essential that we have a maximum security virus laboratory. I have had this point of view for a long time." However
he expressed reservations about the quarantine station claiming that there were arguments for and against it and that an island site would be very expensive. It was decided that Mr. Anthony should discuss the establishment of the laboratory with his ministerial colleagues.

The CSVC Report had gained considerable authority and support for its proposal through its acceptance by SCA and AAC, and its consideration now by Ministers. The CSVC also enjoyed an advantage over the IDC Inquiry by being presented to AAC first, and by claiming to have considered, and essentially dismissed, the opposition presented by McIntosh. This was to prove an important factor when the IDC Report eventually came before SCA and AAC.
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CHAPTER VI

THE IDC REPORT

The Interdepartmental Committee, which had already held two meetings (in April and August 1968) before the CSVC Working Party was established, still had not completed its report by the time the CSVC Report was accepted by the AAC in February 1970. Pierce had provided the CSIRO Executive, the Minister for Science and Education, Mr. Bowen, and the Secretary of the Department of Primary Industry, Mr. Ives, with a draft of what he believed would be the final report of the IDC in September or October 1969. However, McIntosh had, by December 1969, prepared another version which Pierce claimed was "considerably modified".¹

Pierce wrote to McIntosh complaining of the overdominance of his views and stating that he could not agree to certain changes that had been made. He later wrote to the CSIRO Executive about the differences of opinion between himself and McIntosh, asking:

Would it be possible to reconvene the Committee with a new Chairman, preferably impartial and more widely based? Otherwise, is there some formula for terminating a Committee's activities, because I feel that we are unlikely to get anywhere as the Committee is presently constituted.²

This attempt to alter or dismantle the IDC was unsuccessful, and Pierce was still writing to McIntosh in April 1970 asking for the report to be finalised; two years after its first meeting, the IDC Report was still not completed. This contrasts sharply with the CSVC whose first report was completed after only three months, and whose second report was approved by the AAC only fourteen months after the first CSVC meeting.

Pierce was not the only member of the IDC who objected to McIntosh's second
draft report. Thornton of Primary Industry expressed surprise at the new draft, claiming that McIntosh had "completely altered the format from the first draft and in doing so [had] changed the emphasis of the report, particularly the Committee's final recommendation."³ Virtue of Treasury argued that "consideration of the alternative type of laboratory does not come within the scope of the present committee's terms of reference",⁴ and that a recent submission from the Commonwealth Serum Laboratories for a maximum security laboratory "would go a long way towards providing a service on the lines envisaged for the alternative type of laboratory being canvassed by the Committee."⁵

Although correspondence between members of the IDC suggests some dissatisfaction with the final draft, all eventually accepted it in order to avoid further delays. Virtue prefaced his agreement with the remark "with a view to expediting the completion and submission of the report".⁶ Pierce claimed that certain areas in the second draft had "been modified from those appearing in the reports of the meetings" ⁷, bringing them more into line with McIntosh's personal views. However, he went on to say that since "these meetings have been so protracted ... we should not delay matters further."⁸

It has been argued that "the process of report drafting is the arena in which the main features of IDC operations are revealed"⁹: after the first draft has been prepared, the process of compromise and consensus begins.¹⁰ In this case the IDC negotiations were so protracted that other events had overtaken these deliberations. Recognising this, as well as the difficulty of finding a true consensus, given the fundamental differences between McIntosh and Pierce, the members of the IDC now wanted only to complete the report. Painter and Carey claim that:

The consensus approach and the search for unanimity frequently produce reports with which none of the participants is satisfied. What often emerges is a false consensus which is purely an artifact of the IDC
This would appear to be an accurate description of the outcome of the IDC Inquiry.

The IDC Report was eventually released in May 1970 and presented to SCA in June 1970. Although McIntosh himself had proposed the terms of reference, only the first three, namely, the functions of the laboratory, the need for and advantages of such a laboratory, and possible disadvantages were referred to in the Report. An obvious omission was the consideration of control of the laboratory, but questions of site, staffing, cost and industry consultation were also excluded from the Report.

The recommendation presented in the IDC Report was that:

After full consideration, the unanimous view of the Committee is that it would be unwise to set up in Australia a 'Maximum Security Laboratory' for the holding or manipulation of foot-and-mouth virus or other serious exotic disease organisms, or material from animals known or suspected to be suffering from an exotic disease, in advance of an outbreak in Australia.

The Report then went on to recommend an alternative proposal

... for the setting up of a Maximum Security Animal Virus Diseases Laboratory limited to work on indigenous diseases in Australia only, which, in the event of an outbreak of exotic disease, would be ready to deal with the situation.

However, before presenting the Report to SCA, Pierce and other IDC members intervened, and the recommendation finally appeared as:

... a proposal for the setting up of a Maximum Security Animal Virus Research Laboratory to work on indigenous diseases in Australia, to establish techniques for the diagnosis of exotic diseases where the virulent virus is not required and which, in the event of an outbreak of exotic animal disease, would be ready to deal with the situation.

In Appendix B of the Report, where the alternative proposal was dealt with at further length, it was stated that the Committee "could see merit in the
establishment of a maximum security laboratory limited to work on indigenous
diseases only"15, but it then went on to list as possible functions, establishing
techniques for diagnosis of exotic diseases. More surprisingly however, given the
previously expressed view that it would be unwise to hold or manipulate material
from animals known or suspected to be suffering from an exotic disease, it
recommended the provision of "adequate facilities for limited testing of material
from an animal quarantine station."16 As Pierce recognised, "material coming from
a quarantine station may contain Foot and Mouth disease virus"17 or indeed other
exotic diseases.

The IDC Report listed the functions of an exotic diseases laboratory and the
advantages of and need for such a facility, but then went on to list the
disadvantages, and presented alternative ways of performing the functions, such
as using overseas laboratories for diagnosis of suspected outbreaks and quarantine
station testing as well as research and training and purchasing vaccine from
overseas.

The report also contained an extensive account of overseas experts who were
opposed to the idea of the laboratory. As discussed in the previous chapter, the CSVC
dismissed this opposition by claiming that these experts supported their proposal.
Pierce had adopted a different approach and questioned the expertise of these
authorities cited by McIntosh. In a letter to McIntosh, Pierce claimed that he would
not consider himself an authority on exotic virus disease and "therefore Dr.
Jamieson, an administrator in a country also free from exotic disease, should not be
identified as an overseas authority in this field".18 He likewise dismissed Sir John
Ritchie's opinion on the grounds that he was a veterinary administrator and not a
scientist or virologist, and also claimed that Dr. Kesteven, who was not a virologist,
"seems to have missed the point".19 Pierce also suggested that overseas authorities
may have "vested interests which may colour their views and that their thoughts
might be guided by their personal responsibilities and prejudices".20 As an
example he pointed out that Dr. Jamieson was involved in setting up a laboratory in South Africa. However, McIntosh pointed out that most of the serious virus diseases were already present in South Africa.

Pierce's criticism of the experts cited by McIntosh raises the important issue of the selection of experts and the definition of expertise. It was not suggested by Dr. Pierce that the opinions of Dr. Eichhorn or Dr. Callis, which were used to support the establishment of the laboratory, were biased, despite their involvement in exotic disease laboratories. However, when other experts disagreed with the proponents, their opinions were either rejected, ignored or concealed or else their expertise questioned. The CSIRO Executive, as we have seen, ignored Sir John Ritchie's warning of the dangers of establishing an exotic diseases laboratory, the CSVC concealed it and now Pierce was questioning not only the authority of the experts cited by McIntosh, but their motives by alluding to their "vested interests".

When disputes between experts occur, the layman is thrown back on his own resources and since he cannot judge the science involved, he can only rely on indirect evidence to make a decision. This, Ezrahi argues, provides a strong incentive for undermining the credibility of rivals.21

The IDC Report is a very confused document which seems to reflect the conflict between the Committee members, as well as the seemingly conflicting views of McIntosh himself. Although apparently favouring the establishment of a centralised laboratory for diagnosis and vaccine production in the Eichhorn Report, at the fourth IDC meeting in August 1969, McIntosh admitted changing his view. Reverting to the position he held prior to Eichhorn's visit, he was now advising against setting up a laboratory for the purpose of handling exotic disease agents.

In its report to AAC, the SCA stated that:

The Interdepartmental Committee recommended against the establishment of an exotic diseases maximum security laboratory in Australia but saw
merit in the establishment of a maximum security animal diseases laboratory limited to work on indigenous animal diseases, in advance of an outbreak of exotic disease, and to the examination of suspected material submitted by the Quarantine Station.22

It is interesting that SCA picked up the latter point, as it was only mentioned once as the final point to Appendix B in the IDC Report. This would seem to reflect SCA's adoption of Walters Ives' notion of putting forward to Cabinet the positive aspects of the laboratory to show its viability outside an outbreak situation. No mention was made of the alternate ways of performing the functions without establishing a laboratory which were presented in the IDC Report at much greater length than quarantine testing.

The report to AAC went on to state that:

The Interdepartmental Committee suggested also that the establishment of a Maximum Security Animal Quarantine Station (on an offshore island) might be considered further once the maximum security animal diseases laboratory is expected to be operative.23

This was not contained in the IDC Report, however, McIntosh at SCA apparently claimed that he considered it "unwise" to set up a quarantine station in advance of the laboratory24— a slightly different connotation.

At the SCA meeting which considered the IDC Report, it was pointed out out that CSVC was one of SCA's most senior sub committees "to whom [SCA] would look first and foremost and finally for advice on matters of this nature".25 Mr Irving argued that the proper course would be for SCA to refer the IDC Report to CSVC26, however, rather than recommend this action, he proposed the formation of a high level panel to advise government. He stated that:

... obviously we can assume that this submission [the IDC Report] can be taken in with the major one [the CSVC Report] without conflict. Because it is a lesser submission it will not figure very much in the discussions.27

The SCA overcame the dilemma posed by the IDC Report, not by judging the Report
on its scientific merit, but on the question of who had the superior scientific mandate.

The SCA reported to AAC that:

The recommendations of the Interdepartmental Committee were, with some reservations, in general agreement with the proposals for a Maximum Security Exotic Diseases Laboratory as recommended by the CSVC and considered by the Australian Agricultural Council at its 76th Meeting. However the Interdepartmental Committee recommendations are somewhat less broad than the recommendations of the CSVC and there is some change in the order of priorities.28

SCA concluded that the establishment of a maximum security laboratory and an animal quarantine station should proceed as a matter of urgency and that a Panel be formed

... comprising senior representatives of the States to hold consultations with senior Commonwealth officers (and if necessary with Commonwealth Ministers), on the range of issues involved in adequate protection of Australia’s animal industries against the threat of exotic diseases and the steps necessary to enable improvement of livestock despite this threat.29

When the SCA Report was submitted to AAC in July 1970, Mr Nixon, the Acting Chairman, stated:

Ministers may recall that in February the Agricultural Council in fact accepted a broader proposal than this. There should be no need for discussion of this matter. The only reason it is back before Council now is because it was referred to Mr Anthony who took it to an interdepartmental committee which reported back on a somewhat lesser proposal that what Council accepted in February. We have already accepted the proposal and therefore there is no reason for a discussion in depth on this paper.30

Thus it would appear that McIntosh’s manoeuvres at delaying or influencing the establishment of the laboratory had been unsuccessful and that Day (CSIRO Executive Member) was correct in his appraisal of the situation in March 1970, when he stated that “the matter of the MSL has gone beyond the IDC.”31 Even prior to the release of the IDC Report, discussions and correspondence were occurring
between CSIRO, Ives, Refshauge, Bowen and others in order to prepare a Cabinet submission.

That the idea of establishing a laboratory was firmly entrenched by this stage and alternatives not considered or looked for can be further illustrated. In June 1970, Pierce was informed by the U.S. Scientific Attache’ that it had been decided to discontinue bacteriological warfare research at Fort Detrick maximum security laboratory in the U.S. and that invitations could be extended to overseas scientists or their governments to use the facilities for the study of hazardous organisms.32

Pierce replied that:

The maximum security facility which is at present under consideration for development in Australia is a virological laboratory for research on endemic virus diseases of animals of economic importance, only one aspect of the work of the laboratory will be concerned with exotic diseases and this relates to their diagnosis. To be more explicit, the MSL will be in a position to diagnose exotic diseases within Australia where this function will not require the use of the virulent virus.

For these reasons, my view would be that the facilities to be provided at Fort Detrick -

a) Will not influence present negotiations regarding an MSL in Australia.

b) The changed function of Camp Detrick, even if and when we have an MSL, will still be of great potential interest to us for the study of diseases particularly exotic to Australia and using the virulent organism.33

There appears to have been no further discussion of this offer, nor any record of it having been made widely known as an alternative to establishing a laboratory in Australia. Moreover, Pierce’s reply is indicative of the way the various functions were presented, highlighted or interpreted to substantiate particular arguments.

In August 1970, it was agreed by Ives, Refshauge and Price, now Chairman of CSIRO replacing White, that a proposal should be put forward as a tripartite submission by the Ministers for Primary Industry, Health and Education and Science. A meeting was arranged for September 1970 to include Heads of the State Departments of Agriculture, as well as Ives, Refshauge, Price, Pierce, Kesteven and
McIntosh. It was also agreed that CSIRO should prepare a document which could be the basis for a Cabinet submission.\(^3^4\)

McIntosh had failed in his attempt to have alternatives to an exotic diseases laboratory accepted. There were a number of factors which contributed to this; first McIntosh had altered his stance several times and this reduced his credibility. Second, by the time the CSVC and IDC investigations were undertaken, the idea of establishing a maximum security animal health laboratory was firmly established and already embedded in the bureaucratic machinery. McIntosh lacked the authority and influence to challenge the proposal now it had reached this stage, and he was unable to gain support from other members of the IDC or SCA. Third, although connected to the previous two points, the IDC deliberations were overtaken by the CSVC Report. Once the CSVC Report had been accepted by the AAC, the IDC Report was considered a "lesser proposal". In subsequent reports and histories, the investigations of the IDC and CSVC are presented as independent inquiries and their recommendations as being in general agreement, thus giving the impression of a widely canvassed consensus.
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CHAPTER VII

THE CSIRO BID FOR CONTROL

The first explicit reference to the Department of Primary Industry having responsibility for a Bureau of Animal Health, and hence administrative responsibility for the Maximum Security Laboratory and quarantine station, was contained in the first CSVC Report. Prior to this it had been a two-way contest between CSIRO and the Department of Health, although criticism had been made earlier of the division of responsibility of primary industry matters between the Departments of Health and Primary Industry.

This new emphasis on Primary Industry having responsibility for the laboratory and quarantine station coincided with Ives, previously a part-time member of the CSIRO Executive, becoming Secretary for the Department of Primary Industry. However, Ives apparently favoured the idea of the laboratory becoming a CSIRO responsibility. In a letter to Day in July 1969, Pierce wrote:

Walter Ives, to put it mildly, is somewhat disenchanted by his veterinary officers nor have they shown any enthusiasm for increased responsibilities outside meat inspection. He is of the view that the existing bureaux have taken a long time to develop and to place the Bureau of Animal Health in his Department would be courting disappointment.¹

Pierce also told Day that he believed that:

This whole responsibility could come round to CSIRO from the other direction i.e. from the Federal Government back to CSIRO and it is my guess that Walter has this idea in mind. The CSVC will be discussing the whole matter again later this year, but before they do so, we shall be having a considerable amount of discussion during the two-week trip of most CVO's around the pleuropneumonia areas of northern Australia and again at an Executive meeting of CSVC in Canberra on 18th August. On these occasions, I will have the opportunity of influencing the thinking of the CSVC
members. However, as I pointed out to Walter Ives, I would be very unwilling to appear too eager to push them in the direction of his thinking since I feel that all will see the trend back to CSIRO in Walter’s thinking. Although I doubt very much whether they would object to this, I would not want to seem to be pushing it and, secondly, until I have some comment from the Executive, I would not know whether they would be prepared to accept these responsibilities even jointly with a bureau.\(^2\)

It is, perhaps, appropriate at this stage to re-examine the previous positions of the CSIRO with regard to the question of control of the proposed laboratory. At the meeting of Eichhorn, McIntosh and CV0’s in 1964, it was decided that CSIRO would be the appropriate body to undertake such a project. However, there was no further mention of this until September 1967, when Pierce asked for Executive support, and they agreed, in principle, that CSIRO would be the appropriate body to accept responsibility for the laboratory. In 1968, at the second meeting of the IDC, McIntosh made a strong claim for control by the Department of Health and argued against it being a CSIRO responsibility. This led to Pierce asking for Executive support again, and it was agreed that CSIRO should be responsible for the research programme associated with exotic diseases, but not for the other activities. In late 1968, the Executive became concerned about the laboratory competing with their other projects for resources. In early 1969, CSIRO decided that Health should have primary responsibility for the laboratory, but the reason given at this time was that no viable viruses were to be introduced and, therefore, there was little point in CSIRO being involved. In late 1969, after Ives made it known that he supported CSIRO and would support a separate funding arrangement for the laboratory, another change occurred, and the CSIRO Executive began advocating CSIRO responsibility for the laboratory. Price, who had replaced White as Chairman of CSIRO, wrote:

Initially I demurred, again because I thought the implications for the CSIRO budget might be reduced if it were put forward by Primary Industry and Health, with Education and Science supporting it. However, the view was expressed strongly by Mr Ives and Sir William that this should not be so, and that the capital cost could be against the CSIRO vote without
affecting our normal building programme.  

A draft of a letter to be sent to Fraser, was sent to Pierce and Ives for comment before the October 1969 CSIRO Executive meeting. This draft, which was asking for support and approval for CSIRO to undertake responsibility for the laboratory stated that:

... [previously the Executive], had decided that CSIRO should not press to be given primary responsibility of the operation of the laboratory. This was because it was envisaged, at that time, that the facility would be used to deal with a range of non-research problems such as the diagnosis of diseases, quarantine testing and the production of vaccines.

It is difficult to understand what this meant, or how it could justify the change of attitude of the Executive. It was still proposed that the laboratory perform diagnosis, quarantine testing and vaccine production and, if anything, these functions were by now even more entrenched.

Also included in the letter to Fraser was a copy of a draft of the IDC Report (not yet distributed), "provided informally by Dr. Pierce" with the following comments from CSIRO:

1. The Executive supports the recommendation of the Committee that a Maximum Security Animal Virus Laboratory, as it is recommended in this report, be established in Australia. It would provide an essential facility in the event of an exotic disease emergency. Consideration might be given to the use of the descriptive title 'Maximum Security Animal Health Laboratory' to imply that the facility may, if necessary, be used for work with pathogens other than viruses.

2. Until such time as circumstances indicate otherwise, the Executive considers that it would be unwise to introduce serious exotic disease organisms, particularly the foot and mouth disease virus, into this laboratory for research or any other purpose. The Executive is satisfied that the facility, if used for research on virus diseases already present in Australia would provide the stimulus and the type of training for virologists which is so urgently required if we are to have effective scientific backing for disease control in the future.

It should be noted that this constituted a complete change from their previous position, where the Executive claimed they saw little point in CSIRO being involved
in research without viable exotic viruses to work on. However, it does reflect Pierce's earlier submission to the Executive when he was asked to provide justification for CSIRO involvement in the laboratory.

The final comment on the draft IDC Report was:

3. As the main function of the laboratory would be to undertake research, it would be appropriate if prime responsibility for the design, construction, staffing and maintenance of this facility rested with CSIRO. This was the first time it had been suggested that the main function of the laboratory would be research, and clearly demonstrates how particular functions were highlighted to substantiate claims for responsibility. Pierce himself had previously stated that:

... the prime justification for the MSL was for the rapid and accurate diagnosis of any disease which may penetrate the Australian quarantine barriers ... the research aspect would have to be considered secondary to the diagnostic responsibility of the MSL.

The CSVC Report stated that:

There is an urgent need for a laboratory, primarily for the purposes of providing facilities for the diagnosis of F&M disease and for vaccine production in the event of an outbreak in Australia.

Thus, there would appear to be no justification for the claim that the main function would be research, except that it provided justification for CSIRO involvement.

Ives' reply to the CSIRO Executive regarding the draft letter was that he thought "it would be worthwhile to spell out the reasons for the proposed Laboratory being with CSIRO ... I do want a specific and reasonably well argued case why the Laboratory should be placed with you." As a result of this advice from Ives, the justification for CSIRO having responsibility for the laboratory was expanded and the third point now continued:
There are three main reasons for this-

i) CSIRO has already constructed and operated for some years a 'medium security' laboratory for the study of virus diseases. This experience would be invaluable in the construction and operation of a 'Maximum Security Laboratory';

ii) Veterinarians and virologists of the competence to operate such a facility are in short supply in Australia and indeed in the world. CSIRO already has the qualified staff to operate a MSL, and the conditions of employment of CSIRO are conducive to recruitment.

iii) CSIRO already has research work in progress on viral diseases of animals. The direction of such work could only be undertaken in an organisation that is 'research-oriented'.

Pierce's reply regarding the draft letters was that "[he had] no comments regarding these letters, which are in accord with [our] previous discussions". However, he went on to inform Day of the complications which might be caused by the CSVC recommendations. The CSVC were advocating that the MSL and quarantine station should be administratively linked. Furthermore, Pierce told Day that "since, in their view, the Bureau should take over quarantine from Health, and since the MSL would also have vaccine production facilities, they do not think CSIRO would be an appropriate organisation."^12

Pierce went on to point out that the CSVC had "not considered alternatives to the Bureau idea, only alternatives as to what body should administer a Bureau."^13 He continued:

I am sure that this is a big mistake and could make things difficult for Walter (Ives) and the Ministers. However, we will put the point that the MSL could be administered separately from the Quarantine Station, with the clear acceptance of three areas of responsibility by the MSL administering authority:

1) Research.
2) Processing material where commensurate with safety from the Quarantine Station.
3) Developing facilities for diagnosing exotic diseases where they could be done with safety.

These three areas of responsibility are all identified in the CSVC recommendations and research is well to the fore, but they are using the MSL and quarantine as a means of gaining the Bureau. Certainly, if they
stick to this attitude, they will put the various Ministers in complete opposition to each other, whereas our Interdepartmental Committee report would not. We may be able to improve their recommendation to CSVC, but I doubt if they will wish to weaken their Bureau idea by suggesting more acceptable (to Ministers etc.) alternatives.¹⁴

Previously Pierce had claimed that the States had considered CSIRO the appropriate organisation to accept responsibility for the laboratory,¹⁵ and Eichhorn, in his discussions with Chief Veterinary Officers, CSIRO and McIntosh, had considered CSIRO capable of undertaking the project. The CSIRO Executive now supported Pierce in his bid for this laboratory becoming a CSIRO responsibility, as did Walter Ives. However, the States had now altered their views, advocating control by a Bureau of Animal Health to be established within the Department of Primary Industry, and as Pierce pointed out, they were using the functions of the laboratory to justify not only the establishment of the quarantine station but also the Bureau.

It is interesting to note that when the Exotic Diseases Committee of the Australian Veterinary Association originally put forward the idea of a laboratory and a veterinary bureau, they recommended that they be a Department of Health responsibility. However, at that time McIntosh, the Director of Veterinary Hygiene in the Department of Health, was opposed to the establishment of both a laboratory and a veterinary bureau. Once CSIRO began to make a serious bid for control, McIntosh claimed it as his responsibility. Although Pierce was clearly a keen advocate for CSIRO control of the facility, the CSIRO Executive vacillated between accepting and rejecting responsibility. Finally, when the States began advocating it as a Primary Industry responsibility through a bureau, the Secretary of the Department of Primary Industry, Ives, opposed the move, favouring CSIRO control instead.
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CHAPTER VIII

THE P.E.T. REPORT AND THE VACCINE PRODUCTION UNIT

Following the recommendations to the Australian Agricultural Council in July 1970, a Panel of senior representatives of the States and senior Commonwealth officers was formed to consider ways of protecting Australia against exotic diseases and improving livestock. At the first meeting, an eleven-man Advisory Proposal Committee (APC), chaired by Pierce, was formed, which in turn established a Proposal Evaluation Team (PET). This Proposal Evaluation Team was to undertake a study of overseas maximum security laboratories and report on the feasibility and cost of establishing such a laboratory in Australia.

At the same time, CSIRO had been asked to prepare a document as the basis for a Cabinet submission. In this document, the functions of the laboratory were divided into three categories:

a) Relating to increased preparedness to combat exotic diseases of animals

(i) To provide maximum security accommodation for research, especially on viruses, in which can be built up the team of highly trained virologists necessary in the event of an exotic disease outbreak.

(ii) To conduct research on endemic virus infections, to contribute to their control and hence to the reduction of loss to the animal industries. It has been agreed that no research will be undertaken in Australia with dangerous exotic disease organisms, such as foot and mouth disease virus, in advance of an outbreak.

(iii) To provide training for field staff in the recognition and presumptive diagnosis of virus diseases, and laboratory staff in techniques for the isolation and identification of viruses.

(iv) To develop techniques for the rapid diagnosis of exotic virus diseases where these do not involve the use of exotic virulent virus. Consideration may have to be given, however, to the importation and use for this purpose, of avirulent strains of some viruses.
(b) **Relating to the combating of an exotic disease outbreak.**

(v) **Diagnosis.**
To provide staff and facilities for rapid, initial diagnosis, for continuing diagnosis of many samples during the eradication campaign and, finally, for definitively establishing freedom from disease. It will also be necessary to monitor the strains of virus isolated during an outbreak.

(vi) **Manufacture of vaccines.**
In the event of the outbreak of certain diseases, particularly bluetongue and perhaps foot and mouth disease, rapid vaccination may become necessary utilising the particular strain of the introduced organism. While eradication is being attempted, such vaccines, with the exception of the production of foot and mouth disease vaccine, would be produced under conditions of high security and it is expected that this would be a function of the Commonwealth Serum Laboratories. Adequate supplies of a foot and mouth vaccine, effective against the Australian strain, could be prepared overseas at very short notice. If eradication is unsuccessful and the disease becomes endemic, vaccine for general use should be produced commercially in Australia. Vaccine production would not be a function of this laboratory.

(vii) **Vaccine potency testing.**
To provide special maximum security laboratory and animal accommodation for the testing for safety and potency of imported and locally produced vaccines against exotic diseases; this demands the use of fully virulent infective agents for challenging large animals.

(viii) **Staff training.**
To provide training for field and laboratory staff in the recognition and methods of control of the particular disease concerned.

(c) **In relation to the genetic improvement of Australia's livestock.**

(ix) **Final testing of livestock for freedom from exotic disease.**

(x) **Final testing of semen for freedom from exotic disease.**

The States were dissatisfied with the CSIRO submission on three counts. First, they wanted the animal quarantine station and veterinary bureau explicitly mentioned, since the laboratory "in their eyes was one part of a three-part submission accepted by the Agricultural Council." Second, they argued that research should not be the first function listed, and wanted to substitute diagnosis as the main function. And finally, they demanded the inclusion of vaccine production facilities.
Just before the meeting of Commonwealth and State representatives in September 1970, CSIRO confirmed that FMD vaccines could "be made at Pirbright from a strain active in Australia and imported, just as quickly as we can manufacture it ourselves", and that "Bluetongue vaccine and vaccines for other exotic diseases could be made by the Commonwealth Serum Laboratories with facilities which are at present being provided." Despite the arguments which could have been used against the States' proposal to include a vaccine production unit, arguments which had in fact been prepared, the Commonwealth representatives at this meeting, that is, the Department of Health, the Department of Primary Industry and CSIRO, agreed to the inclusion of a vaccine production unit. A clue to the possible reasons for this may be gained from a letter written by Pierce to the Chairman of CSIRO. He wrote:

The responsibility for vaccine production should rest with the Commonwealth Serum Laboratory under the Department of Health. My own view . . . would be that this should help rather than hinder the Cabinet submission in that it will be easier for the Minister for Health to support the submission. It was agreed that this facility should be used in the absence of any requirement for a vaccine against an exotic disease for the production of any vaccine by CSL, therefore, they are getting additional production facilities. This has a special advantage to us; it would be inconceivable that the maximum security facilities should be extended to a production unit and therefore they would be located in a separate building outside the maximum security parameter.

A few weeks after this meeting, Pierce wrote to Ives giving him a number of arguments against establishing a vaccine production unit (VPU). He stated that CSL, "would need most careful supervision if they were to make F&M disease vaccine", that security arrangements could be difficult if two different agencies were responsible, and that staff would be "untrained in high security attitudes". Furthermore, he argued, the cost of the VPU would be very high, and "equipment installed say for F&M may not be used for 20 years (if ever) and during this time could become quite unsuitable for the production of improved vaccines." He also
pointed out that:

... the risk in production of vaccine to F&M is potentially higher than working on foot and mouth problems in the Animal Research Laboratory. Thousands of litres of very virulent viruses have to be grown and handled by comparatively (as compared with scientists) unskilled technicians ... [and] F&M vaccine could be imported which would be more reliable, more rapidly available and safer for the country.  

The State Directors of Agriculture and representatives of the Departments of Primary Industry and Health and the CSIRO met again in October 1970 to discuss a revised submission. Possibly reflecting their membership of SCA and Ives' earlier admonition to them to present the positive aspects of the laboratory, the State Directors of Agriculture presented the view at this meeting that:

... the major purpose be stressed more strongly, that is, the function of the laboratory as an adjunct to a quarantine station. Thus they wished both the quarantine station and the laboratory to receive equal emphasis.  

Originally the laboratory was promoted as a means of protecting Australia's livestock should an outbreak of exotic disease occur; it was argued that the laboratory would undertake diagnosis and facilitate eradication. The CSIRO, as we have already seen, began emphasizing the research aspects to help substantiate their claim for responsibility for the laboratory. However, the States expressed concern that "the immediate exercise had developed into a bid by CSIRO to get the best laboratory in the world". Now the States were claiming that the major function was to facilitate importation of livestock, and in this way used the laboratory and the quarantine station to justify each other. The State Directors of Agriculture also expressed the wish that the veterinary bureau be mentioned, although Dr. Kesteven, who had been included in discussions as an advisor to the Department of Primary Industry, expressed the view that "all could be lost if the veterinary bureau was also strongly pushed". Furthermore, the States were adamant that a vaccine production unit be included.
The Department of Health's view at this second meeting was that the submission heading should include the quarantine facility. Furthermore, they stated that they "would not support the submission unless a sentence went in to the effect that the quarantine facility was a Department of Health responsibility" and "that reference must go in recounting the work of the Department of Health in protecting Australia's livestock." However, they considered that the vaccine production facility was "unnecessary and unwarranted" and that apart from foot-and-mouth vaccine, CSL could cope at their own laboratory.

Pierce tried to sway the States on the VPU question. In his report of the meeting, Pierce stated that:

...[he] told them that a vaccine production unit had been built into the project evaluation team's terms of reference, but that at every turn it was the vaccine production unit and not the high security laboratory which had given rise to the greatest difficulties and raised the major problems. I outlined some of these indicating the possible order of cost \((4\times10^8)\) to produce F&M vaccine and problems of security, control etc. I doubt if they took these seriously, although States should. Finally, Walter Ives asked me directly if I favoured F&M production. He forced me into agreeing with Mr. McIntosh\(^{11}\) [sic] that this would be unnecessary and far more dangerous than running the laboratory side (I hope this is what he wanted me to say, it was my honest opinion).\(^{12}\)

The meeting concluded that Dr. Kesteven, who had "indicated that he had personal entree to Sir William Refshauge and would check with him that he could support the Cabinet submission in its final form", "should draw up a new document."\(^{13}\)

The vaccine production unit became a major stumbling block in the drafting of a Cabinet submission. McIntosh had retired at the end of 1970, thus putting an end to arguments against establishing the laboratory. Nevertheless, the drafting of the submission became a complex political exercise with each of the three Commonwealth agencies (Primary Industry, Health and CSIRO) along with the States, protecting and promoting their areas of interest.
In January 1971 a meeting was held between Pierce, French, Snowdon and Dunn*, all of CSIRO, where Pierce summarised the prevailing attitudes on the vaccine production unit. Pierce noted that the CSIRO Executive considered that CSIRO could not accept responsibility for vaccine production, but that they would take responsibility for safety and potency testing.\textsuperscript{15} The testing aspect had arisen previously. In notes prepared for the discussion in September 1970, Price stated that:

*CSIRO would almost certainly have to be prepared to undertake potency testing of vaccine made in Australia, but we should be coy about this and allow ourselves only to be pushed into it. It would involve handling large animals and fully virulent viruses.\textsuperscript{16}

The Department of Primary Industry’s view at this time was that they were “prepared to consider some building for F&M vaccine production but generally considered that this vaccine could be safely imported.”\textsuperscript{17}

Pierce also reported that:

*CSL wish to put up a high security vaccine production unit, and with a relatively small amount of additional funds this could handle exotic disease vaccines with the exception of F&M. Sir William [Refshauge] unlikely to be in favour of CSIRO manufacturing vaccines; would prefer the VPU is associated with CSL. However, potency and safety testing would be the responsibility of MSL.\textsuperscript{18}

However, Pierce believed that the States still regarded the VPU as necessary, and although he thought “some may be less adamant... Victoria would be very determined”\textsuperscript{19}, because Mr Flynn, Chief Veterinary Officer for Victoria, had chaired the CSVC Working Party which recommended the vaccine production function and had it approved by AAC.

Pierce himself still believed that “vaccine could be imported safely and that this would be preferable to manufacture in Australia.”\textsuperscript{20} However, some of the

*Snowdon and Dunn were the CSIRO representatives on PET.
points arising from this meeting appeared to reflect Snowdon and Dunn's membership of PET which apparently favoured inclusion of a small VPU within the MSL.

Pierce concluded:

Some reassessment may be required as to whether the Commonwealth Departments, Primary Industry, Health and CSIRO, should reconsider their attitudes regarding a modest V.P.U. capable, in an emergency situation, of manufacturing F&M vaccine, while accepting that all other vaccines could be produced by CSL. Responsibility for the production of F&M vaccine requires further discussion but careful security supervision and know-how might of necessity involve MSL staff.

Pierce then communicated these views to Price, "to ensure we are all thinking along similar lines and to influence others in the 'right' direction." Refshauge's personal view, like Pierce, was that he did not favour the production of FMD vaccine in Australia. He wrote asking Pierce's advice regarding investing in overseas stocks of FMD vaccine against an emergency. Pierce informed Refshauge that Burroughs Wellcome at Pirbright, U.K., would be the safest and most reliable source of supply. Mr Mirch of this company visited Australia recently and estimated that the cost of a univalent Foot and Mouth vaccine would be between 10 and 15 cents per dose.

However Pierce pointed out that storage was not a very practical solution since it may be necessary to cover seven different strains which could involve storage of 1.4 million doses and the shelf-life was only twelve months. As an alternative Pierce suggested that:

... since it would be unlikely that vaccine would be required immediately on confirmation of diagnosis (and possibly not for months while we were attempting to eradicate the disease by other means), there is time available for Pirbright to produce the necessary vaccine, as there is a clear indication that a standard type could be manufactured and tested in 4 weeks and an aberrant type in not less than 6-8 weeks."
However, Pierce pointed out to Refshauge that PET had "doubts as to whether Australia should be completely dependent on overseas sources for Foot and Mouth vaccine."  

Pierce was in a difficult position in regard to the PET recommendations since he was Chairman of the Advisory Proposal Committee, the parent committee of PET. He was also concerned about the attitude of the States and the effect his opposition to the VPU would have on his working relationship with them. In an attempt to overcome this problem he asked whether Refshauge would see some point in carrying out research into some of the problems unique to cell culture techniques used for the growth of Foot and Mouth virus for vaccine production. None of this work would necessitate the use of Foot and Mouth virus ... The equipment for this research is not particularly costly and I suggest that we consider including it as a part of the MSL. The inclusion of such research and equipment in the MSL might help to satisfy the Directors of Agriculture of the States and Territories that we have gone some of the way towards meeting their requirements under emergency conditions for a vaccine production unit in the proposed MSL, at least as far as Foot and Mouth vaccine is concerned.

Not only did this suggestion allow Pierce to possibly save face with PET and CSWC, but it strengthened CSIRO's role in the MSL by connecting research to vaccine production.

Whilst in Europe in February 1971, Pierce had three meetings with Burroughs Wellcome to discuss the provision of emergency supplies of FMD vaccine. As a result, Burroughs Wellcome prepared a set of documents outlining the services they could provide on the basis of the information given by Pierce. They considered three areas: immediate vaccine availability, priority production arrangements and an Australian production unit.

With regard to immediate vaccine availability Burroughs Wellcome stated that they could:

A. Provide production, storage, packing and despatch facilities to cover the supply, at any one time, of, say, 60,000 - 100,000 doses of monovalent
vaccine produced from an agreed list of sub-types.

B. We calculate that 8 or 10 sub-types would have given a suitable cover in Australia at any one time over the past twenty years, and would propose that, for calculation purposes, we pre-suppose a need for 10 sub-types at a 100,000-dose level; i.e. one million doses of vaccine to be available at all times for preparation and despatch to Australia within 25 days. This would form the Australian Strategic Supply (A.S.S.).

They also agreed to consult with Australia at 6 monthly intervals on the most appropriate vaccines to hold for the next twelve months, to prepare, if required, vaccines of sub-types not currently produced by them, to make protocols of manufacture and testing available to Australian authorities and in the event of vaccine being required for use in Australia, would undertake:

... special tests or packing requirements to provide additional safeguards that might help to reduce apprehension in Australia that any disease agent might be transported in the vaccine or packaging materials.

The cost of maintaining such a service was estimated at about $100,000 per year with a further charge for dispensing, packaging and transport should supplies be required in Australia.

In addition to an Australian Strategic Supply, but as an extension of this service, they would also agree to:

A. Undertake to commence production, at not more than (say) 4 weeks' notice, of vaccine prepared from any of our adapted sub-types, and at any level above 100,000 doses.

B. Provide continuity of supply at up to (say) 500,000 doses per month whilst a campaign was in progress.

C. Undertake to commence immediate adaptation of the invading virus to BHK production and testing procedures, whether or not there was then an intention to employ vaccine in the field.

The estimated cost of this service was $20,000 to cover additional facilities required and special measures to alleviate disruption of other commitments.

The third section covered the provision of comprehensive advice and training
as well as plant, equipment and biological reagents if Australia wished to set up its own VPU. As an alternative to installing and maintaining a fully-operative but non-producing plant, they suggested that if the arrangements for immediate vaccine availability and priority production were in force, then "time pressures because of an outbreak would be less, and expenditure on plant and subsequent deterioration could be delayed." This would mean that the building could be used for other purposes and converted to vaccine production should the need arise.

In April 1971, the CSVC was informed that PET had reported that Australia could not rely on overseas sources of foot and mouth disease vaccine since:

... vaccine from some countries would be unacceptable to Australia for quarantine reasons, while many laboratories make only monovalent products. The only vaccines readily available on short notice were those in regular production. Burroughs Wellcome, for instance, was not primarily concerned with vaccines against Asian strains of foot and mouth virus, which were likely to be the strains required in Australia. Therefore, the Proposal Evaluation Team will include a vaccine production unit in its plans for the facility.

However, the document that Pierce had received from Burroughs Wellcome noted that:

... it seems logical that vaccines for primary use should be held covering all the main strains known to be in circulation in Europe, the Middle East, the Indian sub-continent, S.E Asia, East and South Africa and South and Central America.

Furthermore it stated that where Burroughs Wellcome do not currently produce vaccine against an agreed sub-type, work would be put in hand to develop a BHK suspended cell culture adapted virus, and to improve the antigenic qualities to the point where a standard dose vaccine could be prepared.

In June 1971, Pierce wrote to Ives asking for his views on the Burroughs Wellcome proposals, his own view being that:
provided a reasonable cost can be arrived at, all these arrangements are worth pursuing now, particularly with regard to (a) and (b) [i.e. immediate vaccine and priority production arrangements], as we are moving towards a view that seven, not five years is a more realistic estimate of the time before NIAD [National Institute of Animal Diseases] is functional.36

It would appear then, that adequate arrangements could be made for guaranteed supplies of vaccine of any strain, even new types, from a reliable source. This raises the questions of why it had been argued previously that Australia needed a VPU, and why PET, who had just completed an overseas tour of maximum security laboratories, thought that overseas sources could not be relied on. It is important to note that even before their investigation of overseas laboratories, PET had formed opinions about vaccine production whilst still undergoing a briefing on the background to the laboratory. Pierce wrote to Ives in September 1970 that:

...there seems no doubt in PET's mind, for many reasons, that the VPU should be completely separate from, but associated with the Animal Disease Laboratory side of NIAD [National Institute of Animal Disease].37

Another interesting question is why, in subsequent debates over the need for vaccine production facilities, the comprehensive services available from Burroughs Wellcome at Pirbright were not made widely known.

In July 1970, after AAC had approved the CSVC and IDC reports, Dr. Day of the CSIRO Executive had "anticipated that a Cabinet submission should be prepared by the end of this year."38 However, by June 1971, the 17th re-draft of the submission was being undertaken, and it was not until September 1972, after many more redrafts that a submission was finally agreed to by all parties.

Although the vaccine production unit (VPU) was a major point of conflict, this was exacerbated by the large number of Ministerial changes during the period. During Gorton's Ministry (January 1968 - March 1971), Anthony was Minister for Primary Industry and Forbes was Minister for Health. Prior to becoming Prime
Minister, Gorton was Minister for Science & Education, a portfolio he retained until handing over to Bowen. Fraser was Assistant Minister for Science & Education, eventually becoming Minister during this period.

From March 1971 to December 1972, the period of McMahon’s Ministry, Primary Industry passed to Sinclair, with Anthony becoming Deputy Prime Minister. Health passed to Greenwood and then Anderson, and Science & Education to Fairbairn and then Fraser again. This meant that during the period the submission was being prepared, the approval of nine different Ministers was sought; two for Primary Industry, three for Health and four for Science & Education.

In July 1971, Senator Greenwood, Minister for Health, “substantially redrafted the Cabinet submission”, omitting the vaccine production unit. This amended submission led Pierce to write to Price:

The negotiations regarding this laboratory have become so protracted and confused that it seemed to me some, possibly over-simplified, account of the developments might bring you up-to-date.

1) The original submission from CSVC, accepted by Agricultural Council, was for the construction of a Maximum Security Laboratory and Vaccine Production Unit (VPU).

2) The drafts of the Cabinet Submission, up to the last one, included the provision of the VPU.

3) CSIRO was never keen on having the VPU as part of its responsibility and it cut across a genuine responsibility of the Department of Health.

4) The Project Evaluation Team (PET) has a firm directive to plan a VPU in the Maximum Security Laboratory. This clearly indicates the early intentions of the first drafts of the Cabinet Submission.

5) The PET concluded that we could not rely on overseas supplies of F&M vaccine that would be acceptable to the Australian Chief Veterinary Officers. Kesteven, from his experience and standards adopted for the Middle east etc., disagreed with this view.

6) The PET view prompted me to persuade yourself and Walter Ives that we should have facilities for the manufacture of F&M vaccine in Australia.

7) A lack of confidence by States and others in standards etc. at CSL gave rise to the view that F&M vaccine should not be manufactured by them, but
by NIAD, although other exotic disease vaccines could be manufactured by CSL.

8) In view of the delay (seven years) before we could manufacture Foot & Mouth vaccine, I discussed safe and acceptable interim arrangements for F&M vaccine manufacture in the UK.

9) While (largely because of delays by the Department Health) the Cabinet Submission was being rewritten over and over again, the Department of Health submitted to Cabinet a proposal for the erection of a high (maximum?) security vaccine production unit which I understand has been accepted by Cabinet.  

Pierce then went on to point out that in this latest submission "there is a total deletion of all mention of a VPU in the MSL " and that:

... in the recommendations there are two (out of a total of four) new items:

(3) agree in principle with the development of further vaccine production facilities and security at the Commonwealth Serum Laboratories to handle the production of exotic animal vaccines other than foot and mouth disease vaccine.

(4) agree to negotiations being entered into with a United Kingdom establishment with a view to ensuring priority in the supply of foot and mouth disease vaccine to Australia if the need for such vaccine ever arose.

Pierce’s personal view coincided with those expressed in this new submission. He stated:

I can put up very few and not very strong reasons for the inclusion of a VPU in NIAD for the production of F&M vaccine. I could put up a better case for not doing if we can negotiate a satisfactory arrangement with the UK. You will remember that we reintroduced the VPU as a necessary component on advice from the PET group, who were not asked or informed about alternative plans.

Furthermore, Pierce now saw a distinct advantage to CSIRO in deleting the VPU. He stated:

Apart from the fact that we did not want it, rather it was wished upon us, it is not our true function and by its deletion I feel we should win some concessions, particularly freedom from interference from the Department of Health.
However, Pierce was obviously annoyed about the way these changes had been made. He wrote that: "CSIRO has carried the burden and the responsibility for all the real progress in this matter" 46, that Health "has been incredibly autocratic" 47, that Primary Industry "could have been a little more open with us about their change of stand" 48, and that Kesteven, who was advising Health as well as Primary Industry, "was consciously ... avoiding being reasonably honest in not drawing our attention to these considerable changes" 49.

But of greater concern to Pierce was the effect this change would have on his relationship with the States. He stated:

The States will probably blame CSIRO, and myself in particular, for the loss of the VPU. Since vaccine production is not our function, they will feel that CSIRO has turned the whole proposal to their advantage, dropped vaccine production, developed the research angle, and I might point out, it is I negotiating in the UK with the Wellcome Foundation for the alternative arrangement. Thus my standing with my peers and CSIRO's is likely to take a turn for the worse 50.

Pierce wanted Ives to talk to the States' representatives to convince them that the alternatives, i.e. CSL to produce all except FMD vaccine, and the UK to supply FMD vaccine, were satisfactory so that "the States will be far less critical of CSIRO" 51. However, he was doubtful that this would succeed "because the States have little confidence in CSL or their products and do not want to be wholly dependent on overseas for F&M vaccine." 52

Shortly after writing to Price, Pierce also wrote to Day, informing him of the changes to the Cabinet Submission. In this letter he stated, "there is one possible compromise which may satisfy the States and that is the provision of space (only) for a VPU." 53

The following day he again wrote to Price, providing him with a detailed analysis of the of the most recent submission. Again Pierce indicated his personal opinion regarding the VPU:
If I were asked for sound scientific reasons in support of a F&M vaccine production unit in the UK compared with a similar facility in Australia, I could make out a far better case than I could for the reverse situation.

He also repeated his concern regarding the attitudes of the States:

Should Mr Ives decide to discuss this submission with the States, CSIRO should try to make it clear that we were willing to include this vaccine production unit and that it is not at our request that it has been dropped. Also that any negotiations with the UK were initially, as far as CSIRO were concerned, to be a temporary arrangement until the Vaccine Production Unit in the NIAD was built and functional.

If Mr Ives can convince the States that the manufacture of F&M vaccine in the UK is satisfactory and we can be protected from any loss of face with the States, I do not feel that the deletion of the VPU, from CSIRO's point of view, is anything but advantageous.

In his letter to Price, Pierce gave a fuller account of the idea of providing space for the VPU as a compromise. He stated:

In my discussion with Dr. Franklands at the Department of Health, and later with Dr. Kesteven, it became clear that both Health and Primary Industry, in keeping with a comment of your own, appear to want the inclusion in the NIAD of a room empty but which could house, should the need arise, a Foot & Mouth vaccine production unit. However, they are quite unprepared to build such a recommendation into the Cabinet Submission. I would have thought that if it were indicated that these facilities would only be used should the disease become endemic, i.e., no longer exotic, or in an unforeseen emergency, and that they were of the view that Foot & Mouth was a special risk and therefore would be more safely manufactured in the NIAD environment than at CSL, the Ministers would be unlikely to find this a difficult or unacceptable concept.

Two days later Pierce took this matter up with some of the PET group (the members from the Department of Works were excluded). He informed Price that the outcome of this meeting was:

1) The area required for the VPU as at present planning and as a minimum estimate is 3,500 sq.ft.

2) It was not considered to be feasible to hide an area of this size, which would remain empty, under any disguising title -
a) because it is so large for no apparent purpose,

b) because no other reasonable 'cover' could be found other than the real function.

c) because the additional cost of servicing to be provided, air-conditioning, effluent air and waste treatment, for the area will be a considerable proportion of the overall estimate of cost.

d) because we feel that the true purpose would be uncovered eventually on examination of the proposal by the Parliamentary Works Committee and the detection of an attempt to mislead in an institute of this nature could jeopardise the whole programme. 57

Pierce also informed Price that he had heard from Mr. Gee, the Director of Veterinary Hygiene replacing McIntosh, that Refshauge, when faced with the alternatives of, including the VPU, deleting the whole VPU, or including space only, had "decided unequivocally for the space only".58 However, Gee was not prepared to put this in writing, stating, according to Pierce, "the less in writing the better".59

Pierce concluded that the inclusion of space for a VPU was a reasonable compromise, but advised deleting the whole VPU proposal.

... if the Departments of Health and Primary Industry find it impossible to put anything in writing with regard to
a) advice to the PET
b) an honest statement of intent in the Cabinet Submission 60 .

since he believed "CSIRO could come out of it badly if there is nothing in writing from the other Departments."61

However, after being shown Pierce's letter by Price, Ives still claimed that he was

... quite strongly of the opinion that when the study group is working up its detailed thinking about the laboratory it should certainly see that the planning can be carried out in such a way as to provide appropriate space for such a unit. I would hope though that this could be done in a fairly inconspicuous way. 62

So the situation now was, that despite the arguments against inclusion of a VPU, including the advice regarding supply of vaccine from overseas, and despite
Greenwood's draft submission which excluded the VPU, moves were being made towards a compromise position which provided space only for the VPU. In this way it was hoped that consensus could be achieved, thus avoiding conflict with the States and with the PET.

Another meeting took place in August 1971 between the State Directors of Agriculture and Ives and Kesteven for Primary Industry, Gee for Health, with Price, the Chairman of CSIRO, taking the place of Pierce who was overseas at the time. At this meeting Price stated that CSIRO had been concerned as to whether they should accept responsibility for the laboratory and described their position as that of "reluctant bride". He then suggested that space for a VPU be included in the MSL, since, "it would be foolish to pay a sum of the order of $20m as an insurance premium and not pay a further premium of $300,000 - $400,000 to make a more complete cover."  

By late September 1971, an amended Cabinet Submission had been prepared and approved by the Minister for Science and Education and the Minister for Primary Industry, and was only awaiting approval by the new Minister for Health, Anderson. However, instead of approving it, Anderson prepared yet another submission for consideration by the other Departments in December 1971, this time including a VPU, although recommending that arrangements for supplies of vaccine from the UK be explored.

CSIRO largely agreed with the new draft, however, they wanted a clearer statement of CSIRO's responsibility for the laboratory and clarification of the vaccine testing function, which had now been extended to testing of any exotic vaccine and not just Foot-and-Mouth vaccine. As Pierce pointed out:

The Department of Health have realised that it is one thing to manufacture vaccine at CSL using perhaps a relatively safe attenuated virus, but quite another to safety and potency test it. CSL have no facilities for this because virulent virus must be used to challenge the immunised cattle and this required maximum security. I do not feel that we can, or should, seek to prevent this use of the animal accommodation, as this part of the NLAD
complex is one of the most expensive. Primary Industry also received the new draft favourably, adding only the need for research on endemic viruses.

Throughout all these negotiations PET had been preparing its report, which was finally tabled at the APC meeting in August 1972. However, the contents and recommendations of the PET Report were well known to those involved in the drafting of the Cabinet Submission before this date, and in fact appeared to have a considerable influence on the draft submission of April 1972 and on the CSIRO report that was to be attached to that submission.

The PET consisted of Mr. Snowdon, Division of Animal Health CSIRO, Mr. Dunn, Chief Building Officer CSIRO, Dr. Howes, National Biological Standards Laboratory, Department of Health, Mr. Walters, architect, Department of Works, and Mr. Moy, engineer, Department of Works. The PET Report, which had taken almost 2 years to prepare, was divided into three comprehensive volumes: Volume I: Visits to Overseas Establishments, Volume II: Evaluations and Recommendations, and Volume III: Brief, Design and Estimates of cost, with attachments IIA, IIA and IIIA containing figures and plans.

As stated in the introduction to the PET Report, the principal objectives of PET were:

... to determine the feasibility and make estimates of the cost of establishing within Australia, high security laboratory and animal accommodation and a unit for producing FMD vaccine.

Despite the debate about whether or not vaccine production was to be included as a function of the laboratory, the PET pursued its original directive. Their terms of reference did not include consideration of the need for or desirability of a VPU, just feasibility and cost, and as Pierce pointed out they "were not asked or informed about alternative plans."

The first step in determining feasibility, according to PET, was to determine
the functions of the laboratory. Once these were identified then the facilities necessary to perform these functions could be determined. The functions listed in the PET Report were:

a) To establish techniques for the rapid diagnosis of exotic or foreign virus diseases

b) Conduct research on indigenous virus infections of animals and assist in their control

c) Train field staff in the recognition and presumptive diagnosis of virus diseases, and laboratory staff in techniques for the isolation and identification of viruses.

d) Provide highly trained virologists and maximum security laboratory accommodation which would be required if an exotic disease were introduced into Australia.

e) It would enable the testing of materials collected from animals imported into a high security quarantine station.

f) The production of vaccine with particular reference to the highly infectious foot and mouth disease. A vaccine production unit would be incorporated and would be capable of producing 200,000 doses of FMD vaccine per month.

g) Provide facilities for the safety and potency testing of vaccines prepared against exotic disease.

The reason given for including a VPU was that:

Australia would be solely dependent on the vaccine production facilities at Pirbright in England. These facilities could well be committed at the time to the production of vaccines for use in other countries.

There was no reference made in the Report to the possibility of negotiating a guaranteed supply as Pierce had explored with Burroughs Wellcome.

CSIRO had also prepared, with the approval of the Departments of Health and Primary Industry, a report entitled "Exotic Diseases of Livestock: The Need for an Australian Maximum-Security Laboratory", to provide Ministers with background information to the proposal. This Report provided a detailed statement of the increasing risk of the entry of an exotic disease, the value of the Australian
livestock industry and the cost of an outbreak. The various functions of the laboratory were also explained and justifications for a Maximum Security Laboratory (MSL) to undertake these activities were given.

It was argued that uncertainties and delays could result from a dependence on overseas laboratories for diagnosis. Furthermore, it was argued that overseas laboratories could not be expected to undertake follow-up testing following an outbreak and that the establishment of a laboratory could reduce the period of bans on meat exports. The Report stated:

... the U.S., in the absence of any other evidence, would normally require that a country remain free of Foot-and-Mouth Disease for a period of 5 years before resuming imports of meat from that country. On the other hand, if Australia had maximum-security diagnostic facilities, the U.S. might be expected to reduce this period considerably. A reduction in lost trading time of even a few months could represent a gain of tens of millions of dollars.72

Whilst it was not made clear how the existence of the laboratory would achieve this reduction, the argument was to be repeated many times over the next 10 years.

The research function was also discussed at length and it was argued that not only was research important in its own right, but that it would provide an on-going function for the laboratory and ensure the presence of scientists of high calibre should an outbreak occur.73

However, of greater interest was the section dealing with vaccine production. The CSIRO Report stated:

At present the only place in the world where Australia could have an acceptable FMD vaccine prepared to combat an outbreak would be at Pirbright, England. Too much reliance should not be placed on the availability of these facilities. Pirbright has no special commitment to Australia and would be in no position to consider an Australian request for FMD vaccine if it was otherwise engaged in producing vaccine for another country or, more particularly, if it was committed to coping with an FMD outbreak in England. Moreover, there is no guarantee that Pirbright would be prepared to manufacture vaccine for Australia if it involved a strain of FMD not previously encountered in Britain or Europe.
The only way in which Australia can guarantee the availability of vaccine in the event of an FMD outbreak, is to have its own maximum-security, FMD vaccine-producing facilities.

Although not stated explicitly, it would seem that the Report is referring to the British Government maximum-security laboratory, the Animal Virus Research Institute, at Pirbright and not the Burroughs Wellcome laboratory at Pirbright. As discussed previously, Burroughs Wellcome offered a wide range of services, guaranteeing supplies of vaccine to Australia.

Pierce was clearly uneasy about the inclusion of the vaccine production unit. He had tried to convince the States, on scientific grounds, that it was unnecessary and unwise to undertake vaccine production at ANAHL, however the PET Report favoured the States' position. Pierce had also tried, through his discussions with Burroughs Wellcome, to establish a viable alternative to present to the States. However, Mr. Gee intimated to Pierce that the Department of Health believed the Wellcome proposals too costly.

During another visit to Britain, subsequent to his visit to Burroughs Wellcome, Pierce spoke to Dr. Brooksby, the Director of the Government laboratory at Pirbright, about vaccine production. Following this discussion Pierce wrote to Price that:

... it is possible that we would do better to come to some formal arrangement with him [i.e. Brooksby] for a limited guaranteed supply of foot & mouth vaccine which I think could be more reliable than to negotiate with the Wellcome Foundation. This is because our requirements appear to be relatively modest and possibly could be made by Brooksby's limited production facilities.

Pierce also informed Gee of this possibility, suggesting that, although he had the personal assurance of Dr. Brooksby, the Director of Pirbright, a formal arrangement be made whereby Pirbright supplied vaccines in an emergency situation. In April 1972, Pierce again visited Pirbright gaining further assurances from Brooksby that vaccine would be supplied "at no cost unless some demand is
made, then a voluntary contribution could be considered." 77 This agreement was ratified at a meeting of the Governing Body of the Animal Virus Research Institute, Pirbright, in October 1972, following a formal request from Refshauge, the Director-General of Health, and further offers of help in the form of advice and assistance on the field control of the disease were made.

Nevertheless, despite the scientific arguments against including a vaccine production unit, and despite the possible alternatives suggested, the final proposal was to include a unit capable of producing 200,000 doses of FMD vaccine per month. Although there would appear to be no evidence for the claim that the only way to guarantee vaccine was to produce it in Australia, this argument was used for the next 10 years to justify the inclusion of a vaccine production unit in the laboratory.

The drafting of the Cabinet submission was a lengthy and complex process of negotiation and compromise, involving incremental change in each of the successive amendments in order to reach a consensus. The problem of producing a submission acceptable to all parties was exacerbated by a "tendency for departmental representatives to act as delegates and to see their role primarily in terms of defending departmental interests, territory, procedures and policies",78 or of extending these interests. In order to overcome this divisive potential, efforts were made to find formulae that concealed or avoided irreconcilable differences79, and these efforts were aided by the sharing on a common culture, by the norms of reciprocity, by the unanimity expectation and by the consensus style of decision making.80 Furthermore, once the decision was made that vaccine production should go ahead, all the proponents of the laboratory presented a united front and endorsed the arguments substantiating this conclusion, regardless of their original position. Opposing arguments and alternatives were not included in the submission or made widely known, and although the decision to go ahead with the vaccine production unit was not based on scientific considerations, scientific arguments were constructed to justify the decision.
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CHAPTER IX

CABINET APPROVAL

By May 1972, it appeared that the draft Cabinet Submission of April 1972 would be the final draft. However, in June 1972, Sinclair the Minister for Primary Industry, wrote to Fraser, the Minister for Education and Science, that:

... because of the possible costs of the laboratory as they have been mentioned to me, I consider that it may well be necessary to consider rather less comprehensive plans than those now contemplated.¹

He went on to state that he agreed it was important to protect Australia from animal diseases, but that all he "would contemplate at this stage [was] that Cabinet be asked to sanction a thorough going study"² of the "best way in which such a laboratory should be designed and operated".³

In his reply, Fraser pointed out that PET had already undertaken an exhaustive study "as regards feasibility of the project and probable orders of cost".⁴ Fraser claimed that he too, was concerned with the estimated cost, but pointed out that "a reduction in cost could be achieved only by a curtailment in functions or a lowering in standards".⁵

It would appear that the debate over the VPU was over, at least for the time being. However, now there was concern over the cost of the facility. In 1970, at a meeting between Ives, Kesteven, Price, Pierce and Day, "it was decided that the cost [of the laboratory] could be reduced from the estimated $16m to $10m", although Pierce preferred an estimate of $12m.⁶ This figure of $16m had been estimated by the Building Section of CSIRO to provide some order of costs for preliminary discussions. The reduction which was made to this figure was based on building the
laboratory close enough to the CSIRO Parkville laboratory so that some facilities could be shared.7 Pierce, however, argued that there was no assurance that it could be built there, and also indicated

... the limits of the validity of the figures which were discussed. It must be appreciated that they cannot be considered anything more than an order of magnitude for the simple reason that they have been produced as a result of the intensive effort of only a few days' work and were only based on a series of discussions between Head Office and officers of my Division. There has been no study in depth of the detailed requirements and these cannot be assessed until similar facilities overseas have been carefully examined by architects and engineers together with an expert virologist. The limits of the validity of all figures which have been used must be recognised now or serious financial problems will be encountered in the future.8

By 1971, a cost of $20 million was mentioned to Ministers, although Price stated, "it would be preferred that this [figure] be not quoted since it might assume some significance that it does not have."9 However, by August 1972, the cost being mentioned by Pierce was $33-35 million.10

At this time, Pierce suggested that the submission should request approval for the proposed laboratory "to be developed in design to the point where it is ready for examination by the Parliamentary Standing Committee on Public Works", rather than just requesting approval in principle.11 Price replied that he and Ives believed they would

... achieve all that is required at this stage if Cabinet gives approval for the Department of Primary Industry to obtain the $200,000 required for the development of a final proposal, including costs. It is recognised, of course, that a second approach to Cabinet for the final decision relating to the NLAD [National Laboratory for Animal Diseases] will have to be made and by that time they may have been preconditioned to accept the large financial commitment.12

In August 1972, the Minister for Health circulated an amended draft in which the quarantine station now featured prominently. This latest draft led Pierce to write to Price that it would "simplify the procedures if Health would agree to
manage their own Quarantine Station [and make a separate submission] and DPI with us, the NLAD [National Laboratory for Animal Diseases].

Pierce concluded:

I think in this way, we might be able to clear the lines a little and perhaps get some action, at least there would be a fewer number of Ministers involved and the initiative would rest with DPI and at their request with the Department of Works and ourselves.

After consultation with Ives and Kesteven, Price rejected Pierce's proposal, replying that:

While the Department of Health is, I know, most anxious to make progress, it now agrees that any approach to Cabinet will be along the lines originally proposed and that every effort must be made to keep the NLAD and Quarantine Station proposals closely associated.

Although the proposal to establish a quarantine station had been presented to, and approved by the AAC at the same time as the laboratory, there appeared to be little detailed planning or discussion of this facility, other than in reference to justifications for establishing the laboratory. This could have been because the greater cost and complexity of the laboratory overshadowed the quarantine station. However, it could also be seen as a reflection of the lack of support by Anthony and McIntosh. The quarantine station was clearly a Department of Health responsibility, and therefore could not be taken up by CSIRO. Anthony, who had told the AAC that while strongly favouring the laboratory, he could see problems with the quarantine station, was unlikely to become an advocate or exert any pressure to begin planning. McIntosh believed that if a quarantine station was to be established, it should follow the establishment of the laboratory and therefore, was not of immediate concern.

A change of Ministers in 1971, and the retirement of McIntosh, saw renewed activity on the quarantine station. In August 1971, at a meeting of the Panel of
Senior representatives of the States appointed by the AAC, it was noted that:

...little had been done so far towards the establishment of a high security quarantine station. However, a working party had recently been established to draft the conceptual needs of such a station. The party consists of Messrs. Gee, Kesteven, Carroll, Flynn and Cameron-Stephen and will report to the Director-General of Health.\(^6\)

In 1972, a feasibility study of the siting of the quarantine station on Norfolk Island was undertaken, as well as preliminary design work by the Department of Works. Advice was also sought from the Animal Production Committee of the SCA and following this the SCA re-affirmed its support of the proposal.\(^7\)

These studies now gave the quarantine station proposal some substance and a separate submission was prepared. Although it was pointed out that the functions of the quarantine station and laboratory were complementary, arguments were now put forward to justify establishing the quarantine station in advance of the laboratory. It was argued that imports of livestock from Europe and North America could commence prior to the establishment of the laboratory, since these are areas of lower disease-risk, and the countries concerned would cooperate with testing. It was also argued that:

...development and operation of the quarantine station should considerably assist in the working up of techniques and managerial practices for the eventual operation of the maximum security laboratory.\(^8\)

So each of the facilities was used to justify the other, and acceptance of one by Cabinet, implied acceptance of the other.

Finally, after more than 2 years of negotiation, agreement was achieved and two submissions went before Cabinet in October 1972; one for the maximum-security animal disease laboratory and a separate one for the quarantine station.

At the same time as the Department of Health was actively planning the quarantine station, it also reintroduced discussions on the veterinary bureau. The
Exotic Diseases Committee of the AVA, in the early 1960's, originally proposed the establishment of a veterinary bureau within the Division of Veterinary Hygiene of the Department of Health. However, when the CSVC considered the idea of a veterinary bureau in 1969, they recommended that it be located within the Department of Primary Industry. On advice from the SCA, this recommendation was changed and the CSVC, in its second report, concluded that there was a need to establish a veterinary bureau and that it be located in an "appropriate Commonwealth Department". After further discussions the AAC had concluded that "there is no real case to support the creation of a Commonwealth Bureau of Animal Health".

In September 1971, the proposal for a Bureau of Animal Health was again brought up, this time by Refshauge, Director-General of Health. In a letter to the Chairman of CSIRO, he pointed out that the original proposals for a maximum security laboratory and a quarantine station "were associated with recommendations from the States that the Commonwealth should review its veterinary activities." Refshauge stated that he agreed in general with the proposal, and recommended establishing an Interdepartmental Committee, representing CSIRO, Health and Primary Industry, to review the existing services and needs. He put forward Gee, then Assistant-Director-General (Animal Quarantine), as Chairman of the IDC, with Carroll, Assistant Director-General (Planning & Research) as the second member representing Health.

The terms of reference he suggested were:

1. To review veterinary and animal health services at present provided by the Commonwealth and their relationship to State services.

2. To consider the need for veterinary and animal health functions and services not presently provided by the Commonwealth or States.

3. To consider the desirability or need for integration of Commonwealth veterinary and animal health services and if appropriate to suggest means
whereby this integration can be achieved.22

The first meeting of this IDC was held in November 1971, with Gee and Carroll for Health, Kesteven and Wilson for Primary Industry, and Pierce and Butler for CSIRO. It was decided here that not only should each of the participating Departments produce a document setting out its own functions, but that interested organisations, such as industry groups, research and professional groups, along with State and overseas Departments of Agriculture, should be approached for their views.23

This renewed interest and activity by the Department of Health, and the implications it could have for CSIRO, apparently concerned Pierce. In March 1972, he presented a paper to the CSIRO executive on the laboratory and its relationship to the Division of Animal Health, in which he argued strongly for CSIRO responsibility for the laboratory. He claimed there had been "a movement of activity and initiative away from the Department of Primary Industry and, to a lesser extent, from CSIRO, towards the Department of Health.24

To substantiate this claim he claimed that the original proposals for a veterinary bureau, quarantine station and laboratory, all referred to the Department of Primary Industry, however the veterinary bureau idea, which was shelved, had now been taken up by the Department of Health. Furthermore, he believed that if CSIRO hesitated in pursuing the laboratory, the Department of Health would assume responsibility for it because of its "current and future need for several of the functions" of the laboratory.25 He argued that the High Security Virus Vaccine Laboratory currently being constructed by the Department of Health needed a maximum security facility for safety and potency testing of vaccines, that the plans being actively developed for the quarantine station could only function if backed up by the laboratory, that the vaccine production unit was a Department of Health responsibility, and that the Department of Health lacked an intrinsic source
of technical advice on quarantine matters which could be provided by the staff of
the laboratory.26

The Department of Health had recently constructed a high security virus
laboratory and large animal accommodation superior to that of the CSIRO Division of
Animal Health, and Pierce stated that he believed that this increased interest in
veterinary research and vaccines was due to problems of financial viability of the
human vaccines and antibiotics produced by CSL.27 The implication of these
activities was, according to Pierce, that they would "drastically reduce the
significance of the virological research of the Division of Animal Health."28 Pierce
also pointed out, that due to other responsibilities and staff reductions, "at a time
when we [i.e.CSIRO] should be able to show unequivically the expertise of the
Division in virology, we have, in fact, only one graduate, Mr Snowdon."29

Pierce concluded that CSIRO should take responsibility for the laboratory,
pointing out that the Division of Animal Health would be "immensely strengthened"
if it did so, but "very seriously weakened" if it did not, since "the laboratory will be
very powerful and a centre of excellence based on a world-wide assessment" and
would attract top scientists and drastically reduce the significance of the virological
research of the CSIRO Division of Animal Health.30 Control of the laboratory was
seen by Pierce as a way of building up CSIRO by protecting and extending its
territory. However, the strong challenge from the Department of Health
threatened CSIRO's bid for control. Each of the Departments involved acted in ways
which sought to protect and promote their interests and areas of expertise and it
was these manoeuvres, rather than rational and scientific decision making which
dictated the functions and organisation of the laboratory, the quarantine station
and veterinary bureau.

In October 1972, Cabinet agreed in principle to the establishment of a
maximum security animal health laboratory and recommended that $200,000 be
made available for further investigation of the design specifications. Following
this decision, Refshauge, Ives and Price met to consider the steps necessary to prepare a comprehensive submission to Cabinet to obtain a definitive decision.

It was agreed that an Interdepartmental Co-ordinating Committee, comprising Pierce, Gee and Kesteven, be established to report to the three Department Heads, i.e. Price, Refshauge and Ives, who would then advise their Ministers. It was also decided that CSIRO should have the responsibility for further developing the project to the Cabinet Submission stage, although the Submission itself would require the approval of the Ministers for Health and Primary Industry.

A National Laboratory for Animal Diseases (NLAD) Working Party was formed by CSIRO to prepare a comprehensive Cabinet Submission, and a feasibility study was undertaken in collaboration with the Department of Works and the Department of Health. Although initially planned as a number of attachments to the Cabinet Submission, the Working Party produced a comprehensive report entitled: "NAHL - A Proposal for a National Animal Health Laboratory", covering the history, need, functions and capabilities of the laboratory, to provide Ministers and members of Government, and later, other interested groups, with background to the proposal. It was during the preparation of this report that the name of the laboratory changed once more, this time from National Laboratory for Animal Diseases (NLAD) to National Animal Health Laboratory (NAHL).

This report was essentially an expanded re-statement of the report produced by CSIRO in conjunction with the Departments of Health and Primary Industry which accompanied the first Cabinet Submission in 1972, plus an abridged version of the PET Report on site selection, along with a brief history of events leading to this proposal. Thus, it would appear that after approval in principle had been obtained in 1972, no changes were made to the functions or to areas of responsibility, and all efforts were concentrated on obtaining definitive approval from Cabinet.

The change from a Liberal Government to a Labor Government in December
1972 meant a substantial re-statement of the issues, and it was suggested that the Ministers involved be acquainted with the "complexities of the project" early in 1973. It was also pointed out that:

The approach to Cabinet may be different to the procedures that have been followed under the Liberal Government because of the size of the proposed Labor Cabinet which would consist of 27 Ministers, not 12 as was the case of the previous Government. Also there may be a reconstructing of Government Departments which may have an impact on the number of approvals to be obtained during the preparation of the Submission.

Although the target dates of March 1973 for completion of the draft, and May 1973 for submission to Cabinet, were not met, drafting of the submission proceeded with little difficulty. It was pointed out to the new Minister for Science, Mr Morrison, that the establishment of the quarantine station and laboratory were part of the Labor Party's platform and that, "in terms of what has gone before, it is incumbent on him, whether he supports the proposal or not, to confer with the Ministers for Primary Industry and Health." Morrison agreed to meet with the other Ministers and requested that the Minister for Northern Development also be involved. At a meeting in June 1973 these Ministers agreed to support the proposal but requested that the final choice of a site be made by the Minister for Urban and Regional Development.

The PET Report of 1972 had set down guidelines for selecting a suitable site. It stated that the ideal site should be:

- about 25 to 30 acres in extent and preferably of similar dimensions in both directions
- located on ground with sound load bearing qualities for building structural purposes
- accessible to all major urban services such as power, water, sewerage and gas
- remote from susceptible livestock by half a mile, preferably one mile. This would mean being remote not only from farms but also from racecourses, showgrounds, abattoirs and saleyards
- within a reasonable distance of a major university containing well established departments of microbiology and biochemistry. There would also be some advantage in being close to a university with a veterinary school.

- within reasonable distance of other tertiary education establishments, such as a major technical college.

- within a city containing a major airport to ensure rapid transport of specimens and material should an outbreak of an exotic disease occur in a part of the country remote from the laboratory.

- within a reasonable distance of residential areas.  

The Cabinet Submission of October 1972 made no reference to possible sites for the laboratory, but Cabinet noted at that time that consideration might be given to a site in a country centre. PET re-examined the situation, but concluded that there were severe disadvantages and no particular advantages in locating the laboratory in a country centre. In preparing their Report of May 1973, CSIRO along with the Department of Works, investigated a number of sites including a possible site at Geelong. They recommended that:

Geelong should not be selected for the location of the National Animal Health Laboratory in preference to any of the sites recommended in Melbourne, Canberra, Brisbane or Sydney. 

and that "the four capital city sites are considered superior to the island sites, Geelong or country sites."  

However, representations had been made to the Victorian Premier by the Geelong Regional Planning Authority and Geelong Promotion Committee, claiming that the State as a whole would benefit if Geelong was selected, and that its chance would be enhanced if Geelong were selected as the site for Victoria’s fourth university. In 1973 Geelong was selected as the site for a university and was also designated a regional growth centre. Geelong was finally chosen "on the advice of the Cities Commission in the light of the Government’s policy of developing specific growth centres and with the approval of the Victorian Government" and CSIRO
and the Department of Works undertook an environmental impact study on the site.

The final submission, along with an Environmental Impact Statement, was first listed for consideration by Cabinet in December 1973. However, it was not until April 1st, 1974, that the proposal was discussed by Cabinet and approved. During this period, the estimated cost stated in the Submission had risen from $42m to $56m. The following day, the Prime Minister, in a press release, announced that the Government had approved the establishment of the NAHL on the Geelong Rifle Range site, and had approved the documentation of the project by the Department of Housing and Construction to the point where reference could be made to the Parliamentary Standing Committee on Public Works.

In July 1974, the proposal was referred to the Parliamentary Standing Committee on Public Works by the House of Representatives, and in September 1974 a public inquiry was held at Geelong.

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The preceding chapters give a detailed account of the growth of the decision to establish a maximum security animal health laboratory. Despite geographical isolation, past freedom from serious exotic diseases, stringent quarantine precautions, and arrangements with overseas laboratories, it was argued by those proposing the establishment of the facility, that exotic diseases posed a substantial threat to Australia's livestock industry, and that steps should be taken to prepare against an outbreak of exotic diseases.

Whilst it is difficult to disagree with the claim that the livestock is important to Australia's economy and that an outbreak of exotic disease would have serious economic effects, these "facts" do not provide a justification for establishing a centralised maximum security animal health laboratory. The question of how Australia could best protect itself from, or at least reduce the consequences of, an exotic disease outbreak, assuming that a risk existed, appears capable of being
answered in a number of ways. For example, more stringent quarantine measures could be taken, existing laboratories could be extended, arrangements could be made with overseas laboratories for training, research and vaccine production, or laboratories staffed by Australian scientists and technicians could be established in overseas locations where serious diseases are endemic.

However, the conclusion that Australia needed a maximum security animal health laboratory was formed at a very early stage in the discussions, and once support had been gathered, goals were then selected that were consistent with, and reinforced this conclusion. In other words, the process did not follow the rational model of decision-making, where it was found that there was a need to produce vaccine, to train veterinary officers and laboratory staff, to undertake research on exotic disease viruses and to test animals from the proposed quarantine station, and, following consideration of the various ways these goals could be achieved, the conclusion reached that a maximum security laboratory was the best way of achieving these ends. Instead, it was approached from the opposite direction. The strategic decision, that a laboratory was needed, was taken first, and functions and arguments justifying it sought. This "reverse" reasoning effectively eliminated alternatives. If alternatives were put forward, they were quickly rejected, since they would damage the case being established in favour of the laboratory. In fact, any action which could conceivably damage the case for establishing the laboratory was avoided: for example, CSIRO had argued strongly for the importation of attenuated rinderpest virus in 1968, but later decided not to follow up the importation, "mainly for political considerations", and the CSVC "agreed that manipulation of rinderpest at Parkville could undermine the case for the high security laboratory".

Whilst the number of inquiries into the proposal, and the long period of consideration, gave the appearance of a comprehensive investigation, in fact, the process involved relatively few individuals, and was confined almost entirely
within the bureaucracy. Originating from discussions among veterinary scientists, the proposal was defined as one for expert scientific consideration, and primary producers, later defined as beneficiaries of the proposal, were excluded from the decision-making process.

The final outcome was the result of negotiation, bargaining and consensus formation, with participants promoting their interests and adjusting to each other's claims. Functions were included to justify the cost of the facility, and the show that its use was not just confined to disease emergencies. Secondly, functions were included, or expanded and emphasised, to justify the involvement of particular organisations in the decision-making process, and their claims for the control of the laboratory. And thirdly, functions were used to either gain or retain the support of particular groups, and to justify other proposals such as the quarantine station and the veterinary bureau.

The proposal to establish a maximum security animal health laboratory did not emerge from a rational scientific process of decision-making. Although the proposal was defined as one for scientific consideration, the reasons for the establishment of the facility and its proposed functions were not based on scientific evidence and arguments, but on political considerations. The shape and functions of the laboratory were almost entirely a product of bureaucratic competition and territorialism, and had little to do with scientific and technical considerations.

The next section looks at the way in which the decision-making process was publicly portrayed, and at the arguments which were presented to the Parliamentary Public Works Committee justifying the establishment of the laboratory.
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PART TWO

THE PARLIAMENTARY PUBLIC WORKS COMMITTEE INQUIRY

"... every building costing over $2 million must go before the parliamentary public works committee (PWC). We might suppose that this provides a nice democratic check, or balance. Yet, as is clear from the [Ross] Report, the herd of white elephants that was uncovered had cantered through this process in fine style. A major problem is that the technical input to the PWC comes almost entirely from the expert agencies who wanted the laboratories in the first place."

CHAPTER X

THE INQUIRY

The Parliamentary Public Works Committee (PWC) Inquiry is an important milestone in the history of AAHL. It is important because it is the culmination of more than ten years discussion, negotiation and planning; because the recommendations of the PWC were subsequently endorsed by the Government; and because it provides documentation of the public arguments used to justify the laboratory and its proposed functions. The PWC Inquiry also plays an important part in the later controversy over the importation of live foot-and-mouth disease virus since it was the PWC Report which recommended that the laboratory be authorised to handle live FMD virus prior to an outbreak.

Before considering the public arguments used at the PWC Inquiry and examining them in the light of the preceding detailed history, it is important to look at the procedures and structure of a PWC Inquiry. The Parliamentary Standing Committee on Public Works (PWC) is a statutory committee established to examine major public works programmes and report on these to the Parliament. The Committee consists of nine members - six from the House of Representatives and three from the Senate. The PWC Act 1969 requires that any public work costing $2 million or more be referred to the Committee for investigation and report to the Parliament. Works can be exempted from PWC scrutiny only on defence grounds or urgency grounds.

In a Ministerial statement to the House of Representatives, the Minister for Housing and Construction, Mr McVeigh, indicated the importance of the PWC:

The Public Works Committee fulfills a key role in the overall process of scrutiny of public works proposals. There are government and
departmental procedures associated with the development of public works
proposals but the PWC provides that important step where a proposal is
publicly examined and justified.  

Submissions from the sponsoring departments or agencies are presented to
the PWC, and representatives from these agencies may be cross-examined by the
Committee. Submissions from interested individuals or organisations may also be
presented, however, there are two difficulties here. The first is that potentially
interested parties may not know about the inquiry. In its Briefing Notes, the PWC
states:

It is customary for notice of the impending inquiry to be placed in the
local press and by this means interested private persons are advised to
make written submissions or attend to give evidence in person at a public
hearing. Concurrently, the Committee writes to local organisations such
as local government and community groups or individuals who are known
to be interested in the project.

However, this procedure is oriented towards constructions of local
significance, rather than proposals of national importance, and assumes that only
those who live near the planned public work are likely to be interested.
Furthermore, it assumes that those groups and individuals "known to be interested"
constitute all those who would be interested if they knew about the proposal or the
inquiry.

The second difficulty is that while the sponsoring departments have had
considerable time and resources to prepare their briefs, the public, even the public
which has some interest in the matter, has not been involved in the
decision-making process, is usually uninform ed, and has fewer resources at its
disposal.

The PWC Inquiry into the proposal to establish an animal health laboratory at
Geelong was advertised locally, and a public relations campaign was undertaken
there to allay the fears of local residents. Much later, during the public debate on
the importation of live FMD virus into the laboratory, it was revealed that most
primary producers and their organisations were unaware of the inquiry at the time. The Public Works Committee did contact the Australian National Cattlemans Council (ANCC) and the Australian Veterinary Association (AVA). However, these letters were not written until Friday 23rd August, allowing only ten working days before the hearing for delivery, consideration and reply. The ANCC wrote their reply on 28th August, but the AVA did not write theirs until 3rd September, and consequently it had to be added to the evidence at a later date. No representatives of primary producer groups attended the hearing.

Apart from Commonwealth government agencies, submissions were received from the Geelong City Council, The Geelong Regional Planning Authority (GRPA), the Geelong Harbour Trust and the Geelong Promotion Committee. There was, however, considerable overlap in the membership of these organisations: members of the Geelong Promotion Committee included McCann and Fidge of the Geelong Harbour Trust, the Mayor of Geelong, and Atkins of the GRPA, as well as Senator Poyser, a member of the Public Works Committee examining the proposal. This overlap would suggest a quite narrow local public representation. Only one private citizen, a Mr. Zula, of Geelong, presented a submission. In expressing his concern, he concluded:

I wonder if the Geelong people, like myself, are concerned by this aura of mystery surrounding the decision makers and have asked themselves that penetrating question "What specifically is its threat"?

Thus whilst the inquiry may appear accessible to the wider community, in fact, few outside those immediately concerned with the project were involved. An examination of the Minutes of Evidence reveals that the PWC Inquiry was dominated by the sponsoring Commonwealth agencies, that is, the Departments of Health, Primary Industry, Housing and Construction, and CSIRO, with further submissions from the Department of Northern Development supporting the proposal, and the
Bureau of Agricultural Economics, a division of the Department of Primary Industry, providing a cost-benefit analysis. This is not to suggest a conspiracy to exclude the public, but rather reflects the procedures of decision-making and the inquiry itself. The public were not involved either because they were unconcerned about the proposal, or were unaware of the hearing, or because they lacked time, money, expertise or information about the proposal.

It has been stated that an inquiry with its

... public hearings techniques and ability to prepare a report with definite recommendations, parallels our conception of rational sequential decision-making where a problem is defined, analysis made and proposals suggested.5

Inquiries are seen as fact finding exercises and "as a 'neutral' method of providing policy advice."6 Allison7 argues that this rational model view of decision-making determines the sorts of questions asked in examining a decision or proposal: whereas other perspectives may ask questions about organisational and individual goals, about power and influence, or about political motives, the rational model poses questions about need, function, and costs and benefits.

The Public Works Committee Act states that the terms of reference of a PWC Inquiry are as follows:

In considering and reporting on a public work, the Committee shall have regard to -

a) the stated purpose of the work and its suitability for that purpose;

b) the necessity for, or the advisability of, carrying out the work;

c) the most effective use that can be made, in the carrying out of the work, of the moneys to be expended on the work;

d) where the work purports to be of a revenue-producing character, the amount of revenue that it may reasonably be expected to produce; and

e) the present and prospective public value of the work.8
These terms of reference suggest an underlying assumption of a rational model of decision making, and this is made quite explicit in the information and briefing material from the Public Works Committee to sponsoring departments. In these instructions the process is depicted as a linear one passing through five stages:

1. Formulating a proposal.
2. Obtaining approval for a specific project.
3. Obtaining Parliament's agreement for a major project.
4. Design and Documentation.
5. Construction and commissioning.

Each of these stages is broken down further into specific activities which need to be carried out. The activities listed in Stage 1, which culminate in an approval in principle, are:

a) identify needs
b) ascertain related causes
c) prepare an outline of functional needs and brief for indicative cost
d) identify options
e) identify possible alternative sites
f) undertake feasibility studies
g) undertake environmental studies
h) prepare notice of intention
i) produce indicative cost
j) advise on timing
k) prepare report on feasibility studies
l) recommend preferred option.

These instructions to sponsoring departments reflect the assumption that the application of scientific thinking and the scientific method will produce objective, politically-neutral decisions. Scientific knowledge is assumed to be politically neutral since it is based on objective data gathered through rational procedures.
Furthermore, the terms of reference are framed in such a way as to limit the issues to those which can be expressed in objective, rational and scientific terms.

The recommendations of the sponsoring agencies are held to be rational since they have been revealed by an objective, scientific investigation which followed the rational model of decision-making laid down by the PWC. The conclusions of the PWC are likewise held to be rational, since the Committee has examined this scientific evidence and assessed its validity following the judicial procedure, where evidence is given under oath, witnesses are cross-examined by the Committee, and, it is believed, the facts are established.

Three important criticisms can be made of this procedure and its underlying assumptions. The first is that once the issues have been defined as scientific or technical, the PWC is dependent on the advice of experts. The members of the PWC are not selected on the basis of any special expertise they may bring to bear on the proposal under consideration, but are chosen to represent a cross section of both Houses of Parliament. The Committee examining the AAHL proposal included five ALP members, three Liberals and one Country Party member. Whilst two of the members were farmers, the remainder covered a diverse range of backgrounds from construction company owner and trade union official to optometrist. Although the Act provides that independent experts can be called, the PWC, in this case, decided that the sponsoring departments were the only experts available in Australia, and thus relied solely on them for scientific advice. This meant that the sponsoring organisations, who had defined the problem and prepared the solution, also assessed the proposal, since the PWC did not have the expertise to evaluate either the technology itself or the scientific arguments put forward justifying the proposal.

The second criticism is that the procedure results in proposals being removed from their historical context, and thus any prior political commitments and interests are concealed. By 1970 it had been agreed by various institutions and
organisations that a need for AAHL existed. The CSVC and IDC had both reported to SCA, who recommended to AAC that the laboratory be established. This was supported by the AVA, CSIRO and the Departments of Health and Primary Industry. The PET Report which took two years to write and required six volumes for its findings, gave added authority to arguments for establishing the laboratory. In fact, it would appear that the number of investigations and reports and the large commitments already made in terms of time and money had a cumulative effect on the authority of the decision, making it difficult to challenge. By 1972, the Commonwealth Government had agreed in principle to the establishment of AAHL, and recommended that $200,000 be made available to complete design specifications. Five months prior to the PWC Inquiry, the Government approved establishment of AAHL on the Geelong Rifle Range site, agreed to the formation of a Consultative Committee to assist in the management of AAHL, approved documentation of the project by the Department of Housing and Construction, and noted that the recurrent costs would be additional to the CSIRO's budget requirements. Thus it could be argued that the function of the PWC was to provide a public justification and to legitimate a decision which had already been taken.

The final criticism concerns the procedures laid down for sponsoring departments, the underlying assumption being that the proposal developed according to the rational model of decision-making. However, as we have seen in Part One, the decision-making process was characterised as much by political considerations as scientific and technical ones. Therefore, in order to conform to the PWC framework, rational, scientific arguments justifying the proposed laboratory and its functions had to be reconstructed by the proponents.

The PWC Inquiry into the animal health laboratory was essentially an "in-house" inquiry, where the proponents of the laboratory dominated the proceedings. The narrow formal mechanisms restricted investigation by assuming a rational model of decision-making, and by defining the issues as scientific and
technical. As Wynne points out, "this is at the expense of any appreciation or encouragement of the underlying non-factual premises and commitments of all the parties concerned."^{12}

The Public Works Committee, on the basis of the evidence before it concluded that:

1. There is a need to establish a maximum security Animal Health Laboratory to ensure the prompt and reliable diagnosis of exotic animal diseases.

2. The proposal is economically justified.

3. The "box within a box" principal of design of the Laboratory will ensure microbiological security.

4. The proposed functions of the Laboratory are appropriate.

5. The precautions taken to prevent the escape of infectious disease viruses have been based on and are an improvement on measures which have been successful in a number of similar laboratories overseas.

6. After a suitable proving period the Laboratory should be authorised to handle foot and mouth disease virus prior to an outbreak of the disease in this country.

7. The site selected is suitable.

8. The Committee recommend the construction of the work in this reference.

9. The estimated cost of the proposal when referred to the Committee was $56 million.

10. The reappraised estimate of cost as presented to the Committee is $64 million.

11. The Committee consider that the construction and establishment of the Laboratory should proceed as a matter of urgency.^{13}

In the following chapters, the public arguments used to justify these conclusions, and the way these arguments were assessed by the PWC will be examined.
REFERENCES

2. PWC. *Briefing Notes for Sponsoring Departments*, p.2.
4. ibid., p.94.
6. ibid., p.5
10. ibid.
CHAPTER XI

THE ARGUMENTS: NEED AND FUNCTIONS

The Need for the Laboratory.

The CSIRO submission to the PWC justified the need for AAHL using the same two arguments that had been used in earlier reports. The first focused on the value of the livestock industry, its economic importance to Australia and the likely cost of an exotic disease outbreak. As discussed previously, these "facts" alone do not provide a justification for establishing a centralised maximum security animal health laboratory.

The second argument rested on the claim that increased volume and speed of air traffic "inevitably" increased the risk of an outbreak. Now although air traffic had increased considerably by 1974, when the PWC Hearing was held, at the time the initial discussions regarding establishing a laboratory were occurring there was not a large increase in the number of travellers to Australia. The PWC Report stated that: "in the last ten years, the number of people arriving from overseas by air has increased from less than a quarter of a million to more than one million". However, Bureau of Statistic figures show that the greatest increase had occurred after 1964, the year that Eichhorn recommended the establishment of the laboratory. Prior to that time the increase had been comparatively small.

Thus, to argue that increased air traffic led to identifying a need, would appear an anachronism. Either the proponents of the laboratory had accurately predicted a great increase in travellers to Australia, although there is no evidence to suggest that this was ever a consideration in discussions of the laboratory, or, more likely, the current increase in air traffic was applied retrospectively to an earlier decision. Nevertheless, the implicit argument presented in the PWC Report
was that a need for the laboratory became apparent after recognising an increase in travellers coming to Australia. As with the argument about the economic importance of the livestock industry, the "fact" of increasing numbers of travellers and increasing speed of travel does not justify establishing an animal health laboratory. A more obvious conclusion would be that quarantine measures needed to be improved, as Mr. Gee had suggested to the Committee.

No evidence was presented to substantiate the claim that the increasing risk was inevitable, nor was it made explicit in the CSIRO submission that this was an opinion and hence value-laden. Only during cross-examination, when Dr. Pierce's statement that there is a "real and growing probability that an exotic virus will, sooner or later, penetrate Australia's quarantine barriers" was questioned, was the nature of the claim revealed. Dr. Allen, for the CSIRO, replied that "it does not represent a formal assessment on our part, but it is a fact which I think most people are aware of and it is fairly widely quoted."

Senator Poyser also expressed surprise that a discussion of the adequacy of quarantine was included in the submission by CSIRO, and not the Department of Health. The Department of Health submission made brief reference to the value of the livestock industry and its dependence on a disease-free status, but understandably, in view of its responsibility in regard to quarantine control, avoided negative evaluation of the quarantine service, concentrating instead on ANAHL's relationship to the high security quarantine station on the Cocos Islands. Approval had already been granted to construct this facility, and the Department of Health rested its case of need for ANAHL on the essential support it would provide the quarantine station.

Mr. Gee, for the Department of Health, was extensively questioned during cross-examination on CSIRO's assessment of risk of entry of exotic disease. He replied:
I think that our precautions at the moment are adequate... I think as air
traffic increases that we will require more staff to be able to handle the
people and their goods... the main answer I think will be people to deal
with the increased numbers of passengers and increased numbers of
aeroplanes rather than involved and expensive equipment or research.6

He further stated: "I am sure that we can cope with the increased risk... I am
satisfied that we will be able to effectively maintain our existing quarantine
security"; and, "no, I do not think that it [an outbreak of exotic disease] is
inevitable."7 However, in the PWC Report these opinions were omitted and the
assessment of need was justified on the basis of the CSIRO arguments alone.

Instructions to sponsoring departments clearly state that they should
compare draft submissions, "to ensure that there is no overlapping and above all,
no conflict".8 The Department of Health submission did not discuss the issue of
increasing risk and adequacy of quarantine, presumably to avoid any self criticism,
and to avoid conflict with the CSIRO submission. However, as shown above,
questioning revealed differences of opinion and interpretation. The PWC seemed
unable to resolve these conflicting opinions, and favoured the formal statement
contained in the CSIRO submission over the informal comments of the Department
of Health representative made during cross-examination, even though quarantine
matters were the responsibility of the Department of Health and not CSIRO. In fact,
it could be argued that since the Department of Health was clearly in favour of
establishing the facility, the PWC saw no point in using Mr. Gee's evidence which
would only reduce the case for establishing need.

The PWC accepted that a need for ANAHL had been established, although the
arguments used do not appear compelling ones. The choice offered to the PWC was
between doing nothing, and establishing the laboratory. Wynne argues that this is
a common characteristic of technology assessment since evaluation of a single
technology avoids the "more overtly political question" of relative benefits.9 The
arguments of need were presented in the submissions as objective, scientific facts.
and the subjective nature of the interpretation of this data was clouded. Although scientists were presenting opinions, these opinions took on the authority of scientific facts and by focusing on questions of risks and costs, which can be phrased in factual terms, value judgements about needs and benefits need not be made explicit.\textsuperscript{10}

Furthermore, the justifications used at the PWC Inquiry appealed to consideration of the "public good": should an outbreak occur, not only would primary producers be affected, but the economy in general would be disrupted. In this way the proponents avoided any criticisms of narrow self interest. However, as Wynne points out, policy options are established by members of committed institutions which

\ldots gradually come to define social goals in terms of 'needs' for major public investment in a particular form of technology. And their perception of need - their definition of social values - naturally reflect their commitments, since that is their raison d'être.\textsuperscript{11}

Although the PWC was meant to investigate and report on need, by the time the proposal reached the PWC, this need was considered evident. The strategic decision, that Australia needed a maximum security animal health laboratory, was taken before Eichhorn's visit to Australia, and subsequent reports became vehicles of advocacy rather than assessments of the need for the laboratory. The sponsoring departments went through the ritual of presenting arguments of need to the PWC, but expected no challenges to these arguments; and to ensure success, presented no alternatives. Once the issue was posed in terms of doing something to help protect the valuable livestock industry, or doing nothing, it became virtually impossible to produce grounds to oppose the need for the facility.

The Functions of the Laboratory

The Public Works Committee Report did not elaborate on, or recommend,
particular functions for ANAHL; it merely concluded that "the proposed functions of the laboratory are appropriate". The proposed functions were diagnosis, research, training and vaccine production.

**Diagnostic Function**

It was argued that:

One of the most important functions for a maximum security laboratory would be to establish a firm diagnosis, [since] the rapid detection or accurate diagnosis of an exotic disease is a vital factor for its subsequent control and eradication.

It was, however, admitted that Pirbright, as a world reference centre for FMD, was obliged to undertake initial diagnosis and that:

... on receipt of [a specimen] they could give you a diagnosis possibly within two or three to four hours. If they have to grow it up in tissue culture, which is the second procedure, I would say that it would take 48 hours, but possibly 24 if everything works well.

Thus the saving in time between a diagnosis performed at Pirbright, "where it is a very routine operation" and one performed at AAHL would only be the difference in the time taken in getting samples to Pirbright or Geelong.

Furthermore, it was admitted in evidence that "measures to contain the spread of the disease would be taken at the site of a suggested outbreak before a positive diagnosis was obtained", and that "total and immediate eradication by the slaughter of all infected and in contact stock whether showing signs of infection or not" would be undertaken. This would indicate that eradication would commence immediately, on the basis of clinical symptoms alone without waiting for laboratory confirmation, and therefore, there would be no advantage, in respect of the time period involved, from the presence of AAHL.

It was also argued that AAHL was necessary to perform follow-up testing after
an outbreak had been confirmed. Dr. Pierce (CSIRO) stated that "overseas laboratories could not be expected to carry out tests on anything like the scale that may be required during this phase." When challenged on this point by Mr. Kelly (PWC Member), Pierce replied that the costs for this testing would be high and that specimens may need to be accompanied by a courier.

... but whether the negotiations have been carried out, whether the questions have been asked as to how many tests they would be prepared to carry out, I would rather you questioned the Department of Health on that. All I know is that we requested that they confirm an initial tentative diagnosis.

When the Hearing resumed the following day, Dr. Pierce offered this additional information:

I spoke to the Director [of Pirbright], Dr. John Brooksby, by telephone last night and he said simply, no. They have not got available facilities for carrying out extensive testing for overseas countries, nor did they consider this their responsibility. The Director could not make nor could he hold such facilities for immediate readiness for such an emergency. I asked him whether he would do so if Australia were prepared to pay for the service. He again said, no.

The Department of Health's submission stated that there was no "contractual agreement by which any overseas laboratory is committed to accepting specimens on a continuing basis from this country." It is interesting to note that while both CSIRO's and the Department of Health's submissions stated that overseas laboratories could not carry out this testing, this had to be confirmed by a member of CSIRO during the inquiry. Furthermore, Brooksby's reported reply would appear to contradict his earlier offers of assistance. It will be remembered that following negotiations between Brooksby and Pierce regarding vaccine production, the Governing Body of Pirbright had offered Refshauge help in the form of advice and assistance in field control in the event of a disease outbreak.

Follow-up testing had always been included as a function of the laboratory
from the earliest discussions, and was listed as a function in the Exotic Diseases Committee Report of March 1964 and the Eichhorn Report of 1964. However, both these reports allowed that initial diagnosis would be performed overseas.

The Commonwealth-States Veterinary Committee (CSVC) Working Party Report of 1969 expanded on this original function of follow-up testing to list six separate functions concerned with diagnosis, namely:

a) Initial diagnosis of FMD by CF test and mouse inoculation, using material submitted from suspect cases in the field, which has also been forwarded to Pirbright.

b) Continued confirmation of diagnosis during outbreaks of FMD.

c) Continued monitoring of field strains during outbreaks.

d) Establishment of eradication status by testing large numbers of specimens for FMD at conclusion of outbreaks.

e) Diagnosis of other exotic diseases.

f) Establishment of actual diagnosis of disease outbreaks not proving to be exotic diseases but where specimens have already been submitted upon suspicion.22

It would appear that the CSVC wanted to stress the importance of the laboratory for diagnosis, however, it must be kept in mind that all of these six functions require either a confirmed outbreak or a suspected outbreak of disease. And as Mr Gee (Department of Health) pointed out to the PWC Inquiry, the Consultative Committee, which only meets in the face of a suspected disease outbreak, had met only twice in the previous ten years23 Thus, while diagnosis may provide a justification for establishing the laboratory, it would not provide a continuing activity.

The diagnostic function also included testing of livestock imported into the proposed high security quarantine station. This was an important addition to the functions of the laboratory for a number of reasons. First, it tied the laboratory to the quarantine station, which had, by the time of the PWC Inquiry, been approved
by Parliament. Mr Kelly remarked at the beginning of the inquiry that:

... it seems to me that we are tackling this problem probably from the wrong way round in terms of time. One would have thought that the proper way for the machine to run would be to have the animal health bureau first, and it would recommend the erection of the Animal Health Laboratory, and then afterwards would come the quarantine station.24

Whilst this argument seems logical, it does not recognise the political factors involved. The quarantine station was less sophisticated technically and much less expensive than the laboratory and could, therefore, be established much faster. Furthermore, although it had been argued that the operating costs would be offset by the charges made to those using the facility, the quarantine station provided a way for government to be seen to be doing something positive for the livestock industry.

More importantly, the relationship of the quarantine station to the laboratory is an asymmetric one: in order to function effectively, the quarantine station required the support of a maximum security laboratory for testing for freedom from exotic diseases. The laboratory, on the other hand, did not require a quarantine station, except to provide a diagnostic function outside of a disease outbreak situation. Therefore, it would seem that is was politically wise to gain approval for the quarantine station first: if approval was not granted, the laboratory could try for approval on its other grounds, but if the quarantine station was approved, then approval for the laboratory seemed assured. During the Inquiry, Mr Kelly stated that: "Mr Gee prepared the ground for this laboratory particularly competently"25 (at the PWC Inquiry into the High Security Quarantine Station), and later he added:

It ought to be pointed out to the new members of the Committee* that the evidence that you [i.e.Gee] gave on the quarantine station was not a complete but a very well documented reasoning, or one of the reasons, for ANAHL to be set up here.26
As already mentioned, testing of imported livestock provided another function for the laboratory outside an outbreak situation. The idea of a quarantine station was not included in the Exotic Diseases Committee Report or the Eichhorn Report, but was introduced at the time the CSVC and Interdepartmental Committee were considering the establishment of a laboratory. The CSVC recognised that the quarantine station was a way of gaining primary producer support, and followed Walter Ives advice that they should emphasize the positive aspects of the laboratory in enabling Australia to enrich its genetic pool of livestock, rather than the negative aspects of its function if an outbreak of exotic disease occurred. In fact, it could be argued that the proponents of the laboratory recognised that their arguments of need for the laboratory were tenuous, and their claim that the risk of an outbreak was significantly increasing debatable. Therefore, it was necessary to show that the laboratory could be used to advantage even if no outbreak occurred.

Furthermore, each of the sponsoring departments had a reason for advocating the establishment of a quarantine station. As mentioned before, Ives, the Secretary of Primary Industry, saw it as a way of gaining Cabinet support for the proposal without relying solely on the dangers or likelihood of an outbreak. The Department of Health wanted it because quarantine matters were clearly their responsibility and it would give them a legitimate interest in the laboratory at a time when their involvement was being questioned. And CSIRO wanted it because they saw it as a way of satisfying Health whilst keeping control of the laboratory for themselves. Thus, it would appear that the inclusion of the quarantine testing

*Messrs. Johnson, Kelly, Keogh and Senators Jessop and Poyser were members of the Committee which considered the quarantine station proposal. Messrs McVeigh, Garrick, Bonnett and Senator Melzer were the new members referred to by Kelly.*
function not only provided a further justification for establishing the laboratory, but it also satisfied a number of departmental and political interests.

Research Function.

The research function was put forward as a way of utilising the laboratory in the absence of an outbreak of exotic disease and to attract scientists who could be called upon if an outbreak occurred. As Dr. Pierce said at the Inquiry: "It is very important for you to understand that this laboratory is not a white elephant between the times when there are outbreaks."\(^{27}\)

Although originally it was envisaged that only research on endemic disease would be undertaken, this was expanded to include research on exotic diseases. It could be argued that this was done to justify research being carried out under maximum security conditions, since research on endemic disease could be, and in fact was already being carried out in less secure conditions. Alternative ways of undertaking research were not presented since this function was necessary to justify the establishment of the laboratory and to provide trained staff in the event of an outbreak. Furthermore, it justified CSIRO's involvement.* Pierce had recognised that Health was responsible for quarantine matters, and therefore, he set out to emphasize the research function, to the point where he began proclaiming it the main function of the laboratory.\(^{28}\) When this argument was not accepted and he was unable to provide a strong justification for research requiring maximum security conditions, he attached the diagnostic function to research and claimed it as CSIRO's responsibility.

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* Lascelles, Chief of the Division of Animal Health, was later to write to the Chairman of CSIRO: "What troubles people most is the grandioseness of the Laboratory, now calling for a major research development to justify its cost and for retaining it in CSIRO even though there is no pressing need for research of a CSIRO character." [A. Lascelles, Letter to Wild, 16/10/81]
Training Function

The training function had also expanded during the ten years prior to the PWC Inquiry. The EDC recommended that staff might train Australians for State laboratories at post graduate level, as did the Eichhorn Report and the CSVC Report. It was not until 1970, in a document prepared by CSIRO as the basis for a Cabinet submission, that the training function came to include training of field staff in the recognition and presumptive diagnosis of virus diseases and methods of control. Alternative training methods not requiring a maximum security laboratory or which would involve visits to overseas laboratories or outbreaks were not seriously considered since this function provided a justification for maximum security animal accommodation "where animals can be infected and examined by field staff and a presumptive diagnosis, based on clinical features given."

Vaccine Production Function

The vaccine production unit was included as a proposed function in the Eichhorn Report, no doubt reflecting Eichhorn's background in an FMD vaccine production laboratory, and remained a function in subsequent reports, including submissions to the PWC. However, underlying the apparent stability and consensus in the submissions to the PWC was a good deal of political activity which was shown in Part One to be quite unrelated to the scientific arguments concerning vaccine production. The Department of Health considered that a vaccine production unit was "unnecessary and unwarranted", Walter Ives gave a number of arguments against its inclusion, and Pierce claimed he could "put up a better case for not [including the vaccine production unit]."

It was the States and the Proposal Evaluation Team who argued for the inclusion of this function. It is uncertain why the States saw it as an important function, except that it was included in the CSVC Report which had been approved
by SCA and AAC, and perhaps any changes were seen by them as a threat to their influence. The PET, on the other hand, appeared to be following the imperative, that if something can be done then it ought to be done. Its terms of reference included feasibility and cost, and not desirability or need, and Pierce pointed out that PET was “not asked or informed about alternative plans”. Much of their time had been spent on the vaccine production unit and it had caused most of the difficulties of design. Also a representative from the Biological Standards Laboratory had been included in the PET specifically to study vaccine production. At first a compromise was attempted, where space only was allocated, but eventually the full vaccine production unit capable of producing 200,000 doses of FMD vaccine per month was included in the proposal despite scientific arguments against it.

The arguments given to the PWC justifying this function were presented as objective and scientific, with no hint of the political nature of the decision to include vaccine production. Whilst the departments sponsoring the laboratory privately agreed that the inclusion of a vaccine production unit was unnecessary or unwise, they constructed rational scientific arguments to substantiate and legitimate this political decision.

Alternatives

As pointed out previously, the evaluation of a single technology without consideration of viable alternatives is a feature of most technology assessment. The CSIRO submission did include a section entitled "Consideration of Alternative Methods of Performing the Functions Proposed for ANAHL”, however, these alternatives were not presented to the PWC as real choices, but to demonstrate their inadequacies, and to show that there was no feasible alternative to the establishment of ANAHL. It was alleged that dependence on overseas laboratories for diagnosis could result in delays, uncertainties and misunderstandings, and that they could not carry out large numbers of tests. Yet no measures had been taken to
strengthen these arrangements. Mr. Snowdon argued that the only alternative to establishing ANAHL was "to provide separate facilities in each of the States," but dismissed this as "excessively costly and completely unwarranted."

It was also stated in the submissions that ANAHL was necessary for undertaking research important to Australia, or else be wholly dependent on overseas laboratories. Furthermore, it was claimed that "the only satisfactory way of ensuring the continuing presence of a team of the calibre required is for the laboratory to have a continuous involvement in relevant research."

Training, it was argued, "could only be undertaken on the scale required" at ANAHL, the alternative being use of overseas laboratories where opportunities are "limited." Again no real alternatives were presented.

Mr. Snowdon also stated that "a number of alternatives to producing FMD vaccine in ANAHL are available, they have been considered and have been deemed unsatisfactory." The finality of this conclusion left no room for debate. The question of the likelihood or advisability of using vaccination in the event of an outbreak was not raised, despite the clear guidelines that Australia would adopt a "slaughter-out" policy. CSIRO merely stated that it "may be necessary" to vaccinate and this was accepted by the PWC.

It has been argued that "the way a decision is arrived at and the way it is rationally accounted for post hoc on a consistent basis are not the same." The historical data presented in Part One shows that the proposal to establish the laboratory preceded the elaboration of most of the functions presented to the PWC. Following the decision that a maximum security laboratory was needed, functions were included for a variety of reasons. However, in order to comply with the requirements of rational, scientific decision-making, and to avoid making explicit the uncertainties, value-judgements and political factors involved in the decision-making process, rational scientific arguments had to be reconstructed.
The arguments to the PWC justifying the proposed functions were constructed in such a way as to show that scientific investigation had revealed that (i) the proposed functions were essential if the livestock industry was to be adequately protected, and, (ii) these functions could only be performed at AAHL.

The submissions to the PWC, with their reconstructed rational arguments, provide a remarkable contrast to the process of decision-making described in Part One. Uncertainty disappeared, and the arguments were presented as absolute fact, with no indications of opposing views or of the political motivations which played a significant role in determining the functions.

The dominance of the proponents of the laboratory at the PWC Inquiry, and the lack of expertise of the Committee members ensured that there was no challenge to the arguments of the need to perform the proposed functions. And the conclusive dismissal, by the proponents, of alternative ways of performing these functions left the Committee with no choice but to conclude that the laboratory was essential.
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CHAPTER XII

THE ARGUMENTS: MICROBIOLOGICAL SECURITY AND COST-BENEFIT ANALYSIS

Microbiological Security.

On the basis of the evidence presented by the Department of Housing and Construction and CSIRO, the Public Works Committee concluded that:

The 'box within a box' principle of design of the Laboratory will ensure microbiological security¹, and,

... the precautions taken to prevent the escape of infectious disease viruses have been based on and are an improvement on measures which have been successful in a number of similar laboratories overseas.²

The 'box within a box' principle means "that high hazard activities are located several barriers away from the environment requiring protection."³ As a further safeguard, "a system of differential air pressures which ensures flow of air towards sources of high hazard at all times"⁴ was incorporated into the design. The Department of Housing and Construction representative, Mr. Walters, was asked if there were alternatives to the "box within a box' design. He replied that alternatives had been investigated, but that "it seems most economical, most sensible, and the method that gives greatest flexibility, to utilise this 'box within a box' principle."⁵ When asked if alternatives would be safer, Walters replied: "No, they would not be more safe. They would be far more restrictive in the operational ways of doing it."⁶

The CSIRO submission included a section on microbiological security which outlined the design of the facility and the security measures taken. However, questions by PWC Members on this section were referred to the Department of Housing and Construction for technical answers. The Department of Housing and
Construction submission briefly described the architectural and engineering features of the facility. Both these submissions relied heavily on the PET Report, at times quoting directly from it. Mr Kelly (PWC Member) remarked on the lack of documentation provided to the PWC, pointing out that in other large projects investigated by them, "the documentation was so large that it had to come in a separate series of documents."7

During the course of the inquiry, questions from the Committee revealed that many of the design and engineering features were still in the experimental or even conceptual stage. It was stated that a prototype laboratory was to be built at Maribyrnong, to develop and test the various components required in AAHL. Although much was made of the air lock doors safety feature, it was revealed that the design of these had not been decided upon, although the aircraft industry had been asked to submit a brief which, according to Mr Walters "looks very, very hopeful"8

Another area of discussion by Committee members was the danger of an outbreak of fire inside the laboratory. They were reassured that this possibility was well catered for, but in another context it was revealed that smoke detectors were under development, but not yet approved.9 Mr Walters also revealed that the use of sealants to ensure containment was still in the research stage, although he claimed: "we are certain that we can achieve this with our technological know how with the tremendous cooperation from the industry itself."10 In fact, what the PWC was being asked to do was not to evaluate the safety and security of AAHL, but to take on trust that the facility would be safe on completion.

Apparently on the basis of the evidence supplied by the CSIRO and the Department of Housing and Construction, the PWC concluded that the 'box within a box' principle of design would ensure microbiological security. The certainty expressed in this conclusion does not, however, reflect an independent examination of the evidence, either by the Public Works Committee themselves or by
non-partisan experts. Instead, it is a restatement of the proponents own
cconclusions. That the credibility and trustworthiness of the institutions submitting
the proposal was the basis for concluding that security was ensured, was
demonstrated quite clearly by Mr. Kelly. He stated:

Mr. Parker, we have power under the Act to employ an assessor. I say that
because the complexity of this project, the cost and the vital importance of
being right, made me turn over in my mind whether maybe in this case
we ought to use this as check against the professional advice we were
receiving. Then it became clear that there would be no one in Australia of
the experience to do the assessing.11

Rather than assessing scientific and technical arguments, PWC Members could
only rely on the reassurances of the witnesses. Senator Poyser asked Mr. Snowdon:

Are you perfectly satisfied, on your knowledge of what has occurred
overseas, that means of averting escapes in this laboratory have been well
catered for?12

During questioning, following the presentation of CSIRO’s evidence, Mr
McVeigh (PWC Member) stated:

As men competent in your field, you are again certain, within your
professional qualifications, that with the proposed ‘box within a box’
principle there is no hope of any viruses escaping. But we must bear in
mind that one of the members said yesterday that at Pirbright in 1961
something did get out. As professional men - and it is going to be your
responsibility - you are certain that this is the best principle to adopt in
cases like this?

Dr. Allen (CSIRO): Yes.13

The submission from the Department of Housing and Construction dealt with
the technicalities of design and engineering which were clearly beyond the
capabilities of the PWC Members. Mr. Kelly had to ask the meaning of “autoclave”*
and “laminar flow”*, and it is perhaps significant that more time appeared to be

*Autoclave = steam sterilizer.  *Laminar flow = ensuring direction of air so it
will not escape in unwanted directions.
spent discussing the fencing and its aesthetics than more technical matters. In fact Mr. Kelly summed up this dependence on the expertise of the proponents when he asked:

There must be something you chaps have overlooked. I am just trying to find out what it is. Can you remember anything you have forgotten?14

The CSIRO included in its submission a small section, consisting of only three paragraphs, headed “Weighing up the Risks”.15 It was pointed out here that ANAHL would not be working with FMD Virus prior to an outbreak and that:

... in respect of other exotic diseases, the risk of disease organisms escaping from the maximum security laboratory, if such a risk exists at all, is infinitesimal compared with the real and growing probability that an exotic virus will, sooner or later, penetrate Australia’s quarantine barriers.16

Although expressing an opinion, CSIRO presented this assertion as an undisputed fact, and the authority of the statement was not questioned by the PWC. It was left to the Department of Housing and Construction to discuss the risk of an escape from ANAHL. The only aspect of the risk of escape of a disease organism that was quantified and discussed in any detail was that of treatment of contaminated air. Mr Wilson in answer to a question on this subject stated:

In these areas where you require a high degree of certainty, which is in my language synonymous with a pretty good probability of being safe, you put in a system where the probability of the escape of one infective dose is the probability of one escape in 330 years. This is not just dragged out of the air. What has happened on this job is that we have assembled a whole lot of well-known, well-proven and tested sub-systems into a most unusual total system and this is because of our experience with the particular building blocks, such as the filters and the air flow regulators and the like. We have used them all. Because we have built them in this country, therefore we know what the costs are, and we know their efficiency. About one infective dose in 330 years is the calculated probability of escape.17

Mr Walters went on to add, “of course that hour of that day in that 330 years in which an escape occurs can be now.”18
Rather than reassuring the Committee of the safety of the laboratory, this information caused some concern. When the inquiry resumed the following day, Mr Kelly said "I have been worrying about that figure of once in 330 years". He went on to state:

I know what the Press is likely to do with a figure like that - take it out and say: Well any time within 330 years. Maybe in the first year we are going to get a foot and mouth escape. I think that for the Committee's sake and also for the sake of the reputation of the laboratory you should be saying how you arrive at that figure.

In an effort to reassure the Committee, Mr Wickham, from the Department of Housing and Construction, then discussed the imprecision of measurement, pointing out that "even if the apparatus appears to be perfect, one qualifies it by the accuracy to which one can measure its performance." He added, "the figure was introduced to enable an experienced committee such as yours to gauge the type of risk attached to that enterprise.

Mr. Snowdon from CSIRO, then offered to comment on this question, pointing out that the information came from the PET Report. He went on to state:

There is one slight correction which I should make before we go further. In making these calculations certain assumptions, of course, are made, and looking at the realistic situation with which we were faced these figures are based really on the amount of virus produced within the large animal accommodation over a 12-month period, assuming you have so many batches of animals infected within that animal house. So, really, it is not one in 330; it becomes one in 3,330.

Although it is not clear how this figure was arrived at, Snowdon then went on to explain how much of the virus would have to escape to cause an outbreak of the disease. He argued that in the PET Report, one infectious dose of virus is defined as the minimum amount of virus required to infect a cow when that virus is injected into its tongue, and that 100 doses would be required to infect an animal by breathing it in. He further claimed that a cow which "is eating grass and picks up
the virus, requires one million of those single infectious doses." He concluded:

... so to get the thing in the right perspective, one has really to see that
under natural spread conditions the risks are so very small, so difficult to
calculate - it is up to you, then, to assess it.

This apparently allayed the Committee's fears regarding the safety of the
laboratory. However, apart from the question of the validity of these arguments,
Snowdon's claims raise another important question which was not considered by
the PWC. If, as Mr. Snowdon said, one million infective doses are required to infect
a cow eating grass, why was there "a real and growing probability" that the virus
would be introduced into Australia by travellers from FMD areas?

Although the scenarios presented to the PWC suggested that most disease
outbreaks overseas were the result of the movement of infected stock, the
arguments of risk of entry of the disease to Australia focused on the increasing
number of travellers and the speed of travel, thus suggesting that people entering
Australia from areas where FMD is endemic will carry the virus on their person
or clothing or will smuggle in contaminated animal products. However, if we apply
Dr. Snowdon's reasoning to this situation, the chance of someone coming into
contact with a susceptible animal and infecting it assumes i) that they were in
contact with an infected animal; ii) that the virus would survive the plane trip and
effects of the environment; iii) that it would be present in a large enough amount
to be infectious, and iv) that they would then come into contact with a susceptible
animal and infect it; or else contaminated foodstuffs brought in illegally would be
fed to susceptible animals. It is interesting to note that one argument favouring the
establishment of AAHL focused on the problem of samples reaching Pirbright in a
satisfactory condition after a 24 hour plane trip, even if they had been packaged
correctly. On the other hand, the argument of risk suggests that the virus could
survive the plane trip on passengers' shoes. In fact, it could be argued that the
accidental introduction of an exotic virus, which is dependent on the combination of a number of chance occurrences, appears less likely than the possibility of the virus escaping when it is already in the country in large amounts.

It should be noted that a comparison of the risk of entry of the disease and a risk of escape from ANAHL was not pursued, either in the submissions to the PWC, or during questioning. Instead the arguments focused on the risk of escape versus the risk of not having the laboratory. The CSIRO submission listed the consequences of not having ANAHL as:

a) Early diagnosis of an introduced exotic virus disease could be delayed with consequent possibility of greater spread resulting in increased difficulty in eradication and increased economic losses.

b) Essential facilities for monitoring the spread of an exotic disease and for accelerating the final declaration of eradication of the disease would not be available.

c) There would not be a competent team of research virologists immediately available to assist in the eradication.

d) The development of tests to differentiate between exotic and endemic virus diseases would be delayed and false reports of the presence of an exotic disease could occur causing unnecessary loss of exports.

e) There would be a limitation on the breeds of livestock which could be imported to improve the productivity of our livestock.

f) The credibility of reports relating to an exotic disease outbreak could be queried unless Australia had a maximum security laboratory similar to those possessed by the major importers of our livestock products.

g) Control of virus diseases affecting both livestock and man would be delayed.

h) If an exotic disease were accidentally introduced and vaccines had to be used, there would be no facilities available to carry out safety and potency tests.

i) In the event of having to vaccinate against foot and mouth disease, Australia would be solely dependent on the vaccine production facilities at Pirbright. These facilities could well be committed at the time to production of vaccine for another country.26

This presentation avoids the question of whether there is, or has been, a significant
increase in the risk of an outbreak, or indeed whether there is a need for ANAHL, but rather assumes this to be so.

Most of the discussion on safety focused on the design and construction of the facility, and not on human error. However, the chief CSIRO architect and PET member, Mr. Dunn, had previously written that:

... the designers will not be able to guarantee security as inferred above; security will be as much a housekeeping function as a design function, and the establishment would not be proof against escape of exotic diseases no matter how good it is designed unless the management and housekeeping of the establishment are first class.\(^{27}\)

Discussion of this type of risk would, by its very nature, admit an unknown degree of uncertainty since human error is difficult, if not impossible, to quantify or even define. Furthermore, Wynne argues that often authorities appear

... to be incapable of accepting that 'small break' accidents (of relatively high probability) could lead to serious effects; they reassuringly attended to 'large break' accidents whose (very significant) effects could be practically ignored because of their extremely low probability.\(^{25}\)

Uncertainties and value-judgements were not made explicit in the evidence presented; in fact arguments in the submissions were constructed in spuriously certain terms. The Committee did not challenge any of the arguments or assertions made by the proponents; the definition of the issue as scientific and technical, combined with the lack of expertise of the PWC and the absence of non-partisan experts, precluded this. The PWC merely asked for, and accepted, reassurances from the proponents. In fact, it could be argued that the scientific and technical evidence itself was unnecessary, serving merely a ritual function, and concealing the real basis of the assessment of risk. The credibility and past record of both CSIRO and the Department of Housing and Construction, along with their perceived expertise and authority, were more important in the evaluation of microbiological security than the scientific evidence presented.
The Cost-Benefit Analysis\textsuperscript{29}

In June 1974, the Bureau of Agricultural Economics was asked by Dr. Kesteven, consultant to the Department of Agriculture, to prepare a cost-benefit analysis for the PWC Inquiry. It was on the basis of this study that the PWC concluded that the proposal was economically justified.

The question of economic viability had not been seriously addressed by the sponsoring departments prior to this study. That benefits would result from the establishment of AAHL was assumed, and the frequent reference to the value of the livestock industry implied that the cost was justified.

It was not until late 1967 that a preliminary cost estimate of $2 million was obtained by the Minister for Health from the Department of Works, but no attempt was made to estimate benefits. Although the terms of reference proposed by McIntosh for the Interdepartmental Committee inquiry included reference to advantages and to cost and methods of financing, these were overshadowed by discussions of control of the laboratory. However, McIntosh did state that "there would be no direct benefit to the livestock industries from the work of the laboratory", and therefore it should be financed by the Commonwealth as an insurance policy.\textsuperscript{30} The terms of reference of the CSVC Working Party did not even include consideration of cost. The Proposal Evaluation Team (PET) was instructed to estimate cost and feasibility, but not to undertake a cost-benefit analysis.

By 1971, a cost of $20 million was being mentioned, with the proviso that it "not be quoted since it might assume some significance that it does not have."\textsuperscript{31} The tentative nature of the estimates of cost were revealed by Pierce, who stated that they could not be "considered anything more than an order of magnitude", since they had been produced as a result of "only a few days work" based on discussions between CSIRO Head Office and the Division of Animal Health.\textsuperscript{32} However, White,
the Chairman of CSIRO, argued that Cabinet approval was first required to obtain $200,000 for developing the final proposal. By the time the second approach was made to Cabinet for final decision, White believed "they may have been preconditioned to accept the large financial commitment".33

The only reservation expressed about cost during this period was by Mr. Sinclair, the Minister for Primary Industry, when he wrote to Mr. Fraser in 1972, that because of the possible costs, "it may well be necessary to consider rather less comprehensive plans".34 Fraser replied that a reduction in cost "could only be achieved by a curtailment in functions or at a lowering in standards."35

When the proposal went to Cabinet in October 1972, no formal cost was attached. This caused Mr. Kelly of the PWC to comment that "it is unusual that it should go to Cabinet without a price tag on it."36 Neither the CSIRO, nor the Department of Health submissions to the PWC included a statement of the cost, again causing Mr. Kelly to remark:

This is the first time I have seen such a submission without any mention of the question of the cost of it. There is a certain coyness in the evidence. No one mentions such a mundane matter as money, but one of the things you must do when you have to evaluate the need for it is put alongside the cost of it. What is also notable is that there has been no discussion about the operating costs of it.37

Given that there had been little concern over the cost of the facility and no discussion of its economic viability in the past, it may seem surprising at first, that a cost-benefit analysis was included in the submissions to the PWC. However, if we consider the terms of reference of the PWC, and the assumption of a rational model of decision-making which underlies them, then the study can be seen as an attempt to provide a rational, economic justification for establishing the laboratory. The procedures and structure of the PWC Inquiry determined the type of evidence presented, and, as with the assessment of microbiological security, the Committee was dependent on the expertise of those presenting the evidence.
The approach taken by the Bureau of Agricultural Economics (BAE) was to attempt to calculate the magnitude of the benefits needed to equal the estimated costs of building and running AAHL, and it was assumed that tangible benefits would result, and that these benefits could be measured in monetary terms. The report admitted the analysis was extremely approximate:

There is a large degree of uncertainty associated with the type of benefits, their possible magnitude and time of occurrence. Virtually no data were available on any of these aspects.38

However, three sources of benefits were identified on the basis of "various descriptions of the objectives and function"39 of AAHL, and were listed as:

a) the prevention of substantial losses in export revenues earned from livestock product sales;

b) the reduction in production losses and livestock slaughters that might be considered necessary without an ANAHL; and

c) the benefits which might be expected to be derived from programs of research at the laboratory.40

In order to give an estimate of these benefits in monetary terms, twelve assumptions were adopted by the BAE.41 These assumptions can be divided into two types. The first type included estimates of the number of livestock and the value of livestock and livestock products, along with estimates of the cost of AAHL and the time of construction; these could be described as scale assumptions. Whilst there is room for debate over the precise value assigned to these assumptions, the validity of the item itself is not in dispute. The second type of assumption is more problematic. This group involves assumptions about events that may occur, about the period of time over which the laboratory will be active, and about the benefits resulting from AAHL; these could be described as substantive assumptions. For example, the basis for selecting forty years as the effective life of the laboratory was questioned by Mr. McVeigh.
Mr. McVeigh: "You have just taken this as a period of forty years for the purpose of your exercise, not because some expert from another department said that this is going to last forty or fifty years? You have just taken this?"

Mr. Miller (Acting Director, BAE): "That is correct.

The assumption made regarding the annual operating costs contains both scale and substantive assumptions. The cost under a quiescent disease situation is an assumption of scale and was estimated at $2.8 million per annum. The cost of operation in an outbreak situation would involve substantive assumptions, but although the BAE recognised that these costs would "increase substantially" during an outbreak, "no assumption as to the magnitude of the possible increase was made". This means that the potential benefits were calculated on the basis of an outbreak of FMD, but the BAE "considered it unnecessary" to estimate the true costs to AAHL of handling an FMD outbreak.

Each of the three identified sources of benefits was considered separately, and using the remaining assumptions,

... an attempt was made to demonstrate the feasibility of obtaining the magnitude of benefits during the period from year 11 to 50 which would at least equal the magnitude of cost of the NAHL.

The first benefit considered was the prevention of substantial losses in export sales. According to the discounting assumptions, it was calculated that if an outbreak of FMD occurred in year 11, $120 million of export revenue would have to be saved. If the outbreak occurred in year 46, the complete export revenue of about $2,000 million would need to be saved. In that case, AAHL would not only have to "reduce export losses", but prevent them altogether, an assumption that is not made explicit anywhere in the report, and indeed one which is contrary to any evidence presented in any of the submissions. It is also interesting that year 46 was chosen in this example, whereas year 50 was used in other examples. If the year 50 had
been used, the benefits would need to be $2582 million, that is, more than the entire export revenue. An alternative calculation in this example showed that if AAHL prevented losses of $10 million each year from years 11 to 50, this would equal the investment in the laboratory.

In concluding, the BAE stated that these examples "provide a clear indication of the order of magnitude of benefits which might be expected in the event of an exotic disease outbreak occurring." However, this appears to be a deliberate inversion of the argument. As noted previously, the calculations are based on the magnitude of benefits which would be required to equal the costs of AAHL, with no discussion or indication of the feasibility of achieving this result.

The second example used by the BAE looked at the benefits from a reduction in production and slaughter losses that might be considered necessary without an AAHL. Again calculations were undertaken to indicate the order of magnitude of the benefits, in this case the reduced slaughter and production losses, required to equal the costs of AAHL. And again, the conclusion formed was that these required benefits were, in fact, benefits that might be expected from the operation of AAHL, without any examination of the ways in which this might be achieved.

In order to achieve the required magnitude of benefit it was assumed that 0.6% of Australia's livestock was affected by an exotic disease outbreak each year, and that the presence of AAHL would reduce the effects of the disease to a nine month period each year and that it would save half the value of stock slaughtered. However, the CSIRO evidence claimed that in the event of an outbreak all stock in the area would be slaughtered, "whether showing signs of infection or not." There appears to be no reasonable basis for the assumption that AAHL could reduce the time period of the disease from twelve months to nine months, and the basis for assuming 0.6% disease rate seems to be that it gives the correct answer.

It was discovered that if 0.6% of Australia's sheep and cattle population is affected by an exotic disease outbreak each year, the annual benefits from
savings in production and disease control slaughterings combined are $10.97 million, which exceed the annuity required for the NAHL project to break even.48

The third example considered the benefits resulting from research at AAHL. Although the BAE admitted that "estimates of the monetary returns which might be expected from research programs are subject to a very large degree of uncertainty",49 they were able to give the following "simple examples":

Assume a research breakthrough occurred in year 11. If the value of that technological advance added $10 million or 0.29 per cent to the gross value of $3,384 million of livestock production in that year, and no further increase was achieved through the research efforts of the NAHL staff, the project would break even in economic terms, i.e., from years 11 to 50 the annual gross value of livestock production in 1972-73 prices would be $3,394 million.

Alternatively a contribution from research at the NAHL to the annual gross value of livestock production ($3,384 million) equivalent in value to a compound rate of gain of 0.007 per cent per year from year 11 to 50 would be required for the project to break even. Even if it is assumed that a 10 year period elapses between a research discovery and adoption of the practice, the necessary compound rate of gain in value terms for the project to break even rises from 0.007 per cent over 40 years to 0.02 per cent from year 21 to 50.50

From these examples, and apparently despite the uncertainty surrounding research, the BAE was able to conclude that AAHL "could be a viable proposition as a result of the expected benefits arising from research programs alone."51

No attempt was made to determine the likelihood of a research breakthrough which would add $10 million to the value of livestock production. Indeed, there was no attempt to address the particular area at all. Rather, this is an abstract calculation which could be used to justify the value of a $60 million investment in research in any field. The returns on research were apparently considered so self-evident that they needed no justification. Indeed, one might wonder why the logic of the argument was not turned on its head and a case made that the increase in the value of production might well be $20 million, so the government should invest $100 million of public money in AAHL.
Although the BAE maintained that AAHL could be viable on the basis of research alone, it added that "if these benefits were combined with a disease outbreak situation there seems to be little doubt about the economic viability of the ANAHL proposal". This could be taken as suggesting that AAHL might not be viable on the basis of prevention of substantial losses in export revenue, production and slaughtering alone, a suggestion that would seem to run counter to the much repeated justification of AAHL.

The strength of the conclusion that AAHL could be viable on the basis of research would appear inconsistent with the BAE's admission of the very high degree of uncertainty surrounding the benefits of research. Furthermore, the nature of the research was not discussed. If the research is concerned with exotic diseases, it is difficult to understand how economic advantages can be derived from it when the disease is not present in Australia. In fact, if breakthroughs were made in the control or eradication of FMD, and other countries made use of this, Australia's export market could be disadvantaged since its present advantage is dependent on its FMD-free status. If, on the other hand, the research gains are through work on endemic diseases, the possibility that these advances could be made in laboratories other than AAHL was overlooked.

The basic assumptions and methods of calculation were not questioned by the PWC, and, in fact, there were few questions at all. One PWC member stated:

I have no question, Mr. Chairman. I think this submission asserts that it is a necessary organisation and economically viable.

Another stated:

If somebody such as Mr. Miller [Acting Director, BAE] and others are convinced of the economic viability of it, with CSIRO running it, we are not in disagreement with the question.

The authority of the institutions and individuals, together with the
mystification of numbers and scientific method, apparently precluded any serious examination of the validity of these arguments. This was in spite of the admission during questioning, of the extremely weak basis of the calculations. Mr Miller stated:

The data simply does not exist for the type of analysis that would need to be done before one could say professionally that this laboratory is definitely an economic proposition. What we have done is to, if you like, do some scribbling on the back of a used envelope, pulled some figures out of a hat and tried to provide the interdepartmental committee and this Committee with some figures which will help to form a judgement as to whether an insurance policy of this type is likely to be beneficial.55

Not only does this statement appear to have been overlooked in assessing the evidence, but it is quite inconsistent with the authoritative and scientific tone of the BAE Report itself.

It would seem that when the data are too technical or complex, requiring special expertise, or at least detailed critical analysis, the attention of those assessing the evidence is drawn to the conclusions only, and then the credibility and authority of the organisation providing the evidence is assessed instead. And, as Wynne has argued, one way this authority and expertise can be negotiated is by presenting reports and decisions as if they are "based on sophisticated technical forecasting and similar calculations, as opposed to structurally 'given' presumptions and guesswork."56 This image of expertise serves to legitimate political decisions.

The BAE Report provides a classic illustration of many of the problems associated with cost-benefit analysis. All the costs and benefits cannot be known, included or measured: the BAE admitted that their economic framework "ignores any consideration of the impacts of environmental and social welfare" 57, and that "often these aspects may not be possible to quantify, but nevertheless have an important bearing on a decision to invest in a particular project."58 In fact it could
be argued that it is impossible to ascribe values to costs and benefits at all, since it is in the realm of conjecture rather than an objective scientific exercise. The use of cost-benefit analysis in technology assessment is a political act which "produces a spurious mathematical precision for very imprecisely known relationships and uses the power of numbers to give an appearance of authenticity to decisions."\(^5^9\)

In discussing the analytical framework used, the BAE claimed that:

... ideally the economic criteria [of estimated costs, estimated benefits and the time period over which the costs and benefits are expected to be incurred and received] should be used to compare a number of projects in order to select those with the greatest expected net benefits and to determine how a limited supply of capital should be allocated to the projects in the most economically efficient way.\(^6^0\)

Since there were no alternatives presented, the analysis compared the "magnitude of estimated livestock product losses without a NAHL with the possible saving of a proportion of those losses if the NAHL was built."\(^6^1\) Such a comparison could give only one answer. Indeed, it could easily be argued that the cost-benefit analysis was framed and conducted with only one possible outcome in mind: the provision of a particular kind of authoritative support for the construction of AAHL.
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13. ibid., p.51.

14. ibid., p.127.

15. ibid., p.7.

16. ibid.

17. ibid., p.113.

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19. ibid., p.118.

20. ibid., p.119.

21. ibid.

22. ibid.

23. ibid., p.127.

24. ibid., p.128.

25. ibid.


29. Much of the material in the cost-benefit analysis section has been treated previously in P. Scott, "The Politics of Technological Decision-Making: The Establishment of ANAHL", Unpublished M.A. Thesis, University of Wollongong, 1983. It has been included here to complete the analysis of the PWC Inquiry.
32. A.Pierce, Letter to M.Day, 24/6/70
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CHAPTER XIII

THE ARGUMENTS: THE USE OF LIVE VIRUS

There was one further conclusion made by the Public Works Committee which was to have far-reaching consequences; the conclusion that "after a suitable proving period, the Laboratory should be authorised to handle foot and mouth disease virus prior to an outbreak of the disease in this country."

The original concept for the laboratory put forward by the Exotic Diseases Committee in the early 1960's did not include the use of live exotic viruses prior to an outbreak. At that stage, the functions proposed did not require live virus: research was to be carried out on endemic diseases, training did not include inducing exotic diseases in large animals to observe clinical symptoms, but was concerned with the training of State laboratory staff in diagnostic techniques, initial diagnosis was to be carried out overseas and therefore only follow-up testing would be performed at the laboratory, and vaccine production was not included as a function. When there was no explicit mention of using live exotic virus, and when the proposed functions appeared not to warrant its use, McIntosh clearly stated that he was strongly opposed to importation of live virus and that the Director of Quarantine would support him in this opposition.

However, in the 1964 Eichhorn-McIntosh Report, where functions were extended to include vaccine production, with facilities for inoculation into large animals, it was stated that "in order to enable the Central Laboratory to function in this manner, it will be necessary to permit the importation of living virus". When the Special FMD Committee, which comprised McIntosh, State Veterinary Officers and CSIRO, met with Eichhorn to discuss the Report, it was agreed that "FMD virus can be safely handled by competent virologists". This was even before the
feasibility of constructing a secure facility had been investigated.

In 1968, in an Interdepartmental Committee agenda paper, McIntosh again made reference to the need to import live virus in order to undertake the proposed functions. However, in 1969, the CSIRO Executive stated "it is not clear at this stage if viable viruses would be introduced; if not, there appeared to be little point in CSIRO being responsible for the research." Pierce replied that he believed it "would be a rather irresponsible approach to carry out large scale research using exotic viruses in a country such as Australia," and the research functions he proposed did not require live virus.

The Commonwealth-States Veterinary Committee Working party tackled the subject head on, pointing out that although evidence suggested it would be "technically desirable to manipulate foot and mouth virus," in view of the risks involved, "FMD virus should not for the time being be manipulated therein in advance of an actual outbreak confirmed by Pirbright." When the CSVC Working Party Report was presented to the CSVC in April 1969, it was pointed out by one member that an "earlier view, following Dr. Eichhorn's visit [was] that it would be essential to manipulate a virus in advance of an outbreak." Mr. Flynn (CVO Victoria) replied that the Working Party was unanimous in its recommendation, and this decision was then supported by Dr. Pierce and by Mr. Gee, who thought it "politically irresponsible" to import live virus. The political dimension was made quite explicit by Mr. Thornton who stated that:

he believed approval would not be obtained to build the laboratory if it was proposed to use virulent exotic viruses therein in advance of an outbreak.

The CSIRO Executive also changed its stance in October 1969, claiming that "it would be unwise to introduce serious exotic disease organisms, particularly the foot and mouth disease virus, into this laboratory for research or any other purpose."
And to complete this 'about-face', the IDC Report stated "the unanimous view of the Committee is that it would be unwise to set up in Australia a Maximum Security Laboratory for the holding or manipulation of foot-and-mouth virus or other serious exotic disease organisms."¹⁴

The 1970 document prepared by CSIRO as the basis for a Cabinet submission noted that "it has been agreed that no research will be undertaken in Australia with dangerous exotic disease organisms, such as foot and mouth disease virus, in advance of an outbreak" and that "consideration may have to be given, however, to the importation and use for this purpose [of developing techniques for diagnosis] of avirulent strains of some viruses."¹⁵

It is not clear why the live virus was deemed necessary for the laboratory to perform its functions in 1964, but not required, according to subsequent reports, when there was no curtailment of functions. Over this period of time the functions of the laboratory had not been reduced, but rather extended and elaborated. It is possible that consideration had been given to alternatives, such as use of avirulent strains and inactivated diagnostic agents, and that vaccine production would not be undertaken until after an outbreak. Or it could be, as Pierce suggested to the Chairman of CSIRO, that the members of these committees were technically uninformed,¹⁶ and therefore, unable to judge whether or not live virus was necessary to undertake the various functions. Furthermore, it was recognised that introducing live exotic virus into Australia would be a highly contentious issue, and if justification for the laboratory rested on the need to import live virus, then it could be doomed to failure.

No further mention of the need to import live exotic virus to undertake the proposed functions was made, although it had always been agreed the laboratory should be built to the standard of security required to contain FMD virus, the most feared and the most highly infectious of the exotic animal viruses.

In the CSIRO submission to the PWC, it was pointed out six times that the
laboratory would not be working on highly virulent viruses, such as FMD, in advance of an outbreak. As Mr Kelly (PWC Member) stated at the end of the CSIRO evidence, "all the evidence has been clear that there is not going to be any FMD work done in Australia until there is an outbreak here," and later, "you [i.e. CSIRO] have made it specific that they are not going to be working on FMD." 

The first shift came a short time later in the PWC proceedings when Mr. Kelly suggested that, as he had "sufficient confidence in the people designing the outfit", he believed work could be undertaken using live FMD virus. Mr. Snowdon (CSIRO) replied that the "Laboratory could work on foot-and-mouth disease after a satisfactory running-in period, a commissioning period, because that is the disease which we have taken as a basis for the design." Dr. Allen (CSIRO) added that the Australian Agricultural Council and CSVC had made the decisions regarding importation and that "we have for the moment accepted that constraint as being a reasonable one," although he pointed out that "there is nothing which would make us desirous of not going on with work on foot and mouth disease." Dr. Pierce then pointed out that "it would be imprudent, I think, in the eyes of the Commonwealth Veterinary Officers of the States and of the Department of Health, to engage a new laboratory in work with a most dangerous virus in its early stages of operation," but he believed this decision could be modified once they saw how the laboratory operated. Mr. Kelly replied that he thought "it would be a risk that we would be prepared to run in the future" and that he would question Mr. Gee on it. The following day in reply to a question, Mr. Snowdon stated that, "we believe that it is safe to handle foot and mouth disease within that laboratory."

In the Department of Health submission it was clearly stated that "there is no intention of using the virus of foot and mouth disease, even in the secure conditions of the laboratory, in advance of an outbreak." However, during questioning, this statement was qualified by Mr. Gee when he stated that "the laboratory and the personnel would be more effective if they were skilled in the
use and manipulation of foot and mouth disease virus"\(^29\) and that he was "confident the laboratory could safely handle foot and mouth disease virus."\(^30\) He also argued that once the laboratory was "running properly, it would be appropriate to reassess whether or not this is a reasonable or necessary restriction"\(^31\) and that he believed eventually the laboratory would handle live foot and mouth disease virus. The difficulties he saw about having live FMD virus in the laboratory were possible adverse trade repercussions and the danger that if an outbreak of FMD occurred in Victoria, ANAHL would be blamed.\(^32\)

There would appear to be a difference between the absolute statements contained in the submissions to the PWC, and the informal answers and statements given during questioning by the Committee. There was no suggestion in the submissions that use of live FMD virus would be reassessed after commissioning of the laboratory, nor that the laboratory would be unable to function effectively without the virus. Yet this was being strongly suggested by the proponents during cross-examination, along with reassurances of the safety of the laboratory to handle the virus.

A reading of the Minutes of Evidence would suggest that another level of dialogue between the proponents and Mr. Kelly was operating, with Kelly asking leading questions and making statements about being prepared to run the risk. As the inquiry progressed, these suggestions and hints were made quite explicit. Mr. Kelly stated:

Mr. Gee, I was very interested in your reaction to the suggestion of using FMD, working on FMD before the outbreak. I am not going to say anything more than to say that the support from a person of your quality to the statements already made by CSIRO, I think, should carry some weight in the future and I agree it is proper to wait until the machine is running and the driver knows how to drive and to see how well it works. Then is it your opinion that it would give us a chance to hold the frontier of the disease further back in other countries if we could work on the disease ourselves?

Mr. Gee: Yes.\(^33\)
Near the end of the inquiry, when CSIRO was re-examined, Kelly posed a similar proposition to Mr. Snowdon. Kelly stated:

I get the picture of an unusually competent examination of the health, of the freedom from risk, of the laboratory. That being so strengthens me in my feeling that it would make proper use of this ultra-safe facility if we were to use it quicker than is now planned for the actual work on the FMD virus. Would you agree with that Dr. Snowdon?34

Snowdon replied that "after it has been demonstrated that the laboratory is capable of operating to the level at which it was designed, then I would agree with you."35

The PWC Report contained three separate statements that live FMD virus would not be handled in the laboratory prior to an outbreak.36 The last of these deserves to be quoted in full.

78. Foot and mouth disease virus. As mentioned previously, it is not intended that the Animal Health Laboratory would work on the highly virulent foot and mouth disease virus prior to any accidental introduction of the disease into this country. Whilst appreciating the reasons for this decision, the Committee believe it is important to bear in mind that the Animal Health Laboratory has been designed to be microbiologically secure specifically against the foot and mouth disease virus. It is the virus against which any evaluation of the microbiological security should be made on the premise that if foot and mouth disease virus can be handled with safety then the Animal Health Laboratory would be capable of handling any of the known exotic disease agents.

79. It is apparent that the Animal Health Laboratory would be more effective in the event of a foot and mouth disease outbreak in Australia if the staff were actively skilled in the use and manipulation of foot and mouth disease virus prior to any such outbreak. It would also enable the Laboratory to give more effective assistance to neighbouring countries in combating foot and mouth disease.

80. Committee's conclusion. After a suitable proving period, the Laboratory should be authorised to handle foot and mouth disease virus prior to an outbreak of the disease in this country.37

In a recent interview, Mr. Gee admitted that the PWC Report was unusual in that it extended the role of the laboratory, and that "it would have been a different
Report if not for Bert Kelly. Gee claimed that Kelly was a far sighted and innovative man who, since he had a son who was a vet, understood the problems. However, Gee also admitted that out of session, "but not secret", discussions had occurred between himself, Kelly and CSIRO during the PWC Inquiry. Kelly is reported to have later claimed that although it was not what the proponents said, what they wanted was access to the live virus.

Whether Kelly acted on his own initiative or on behalf of the proponents is not clear. Nevertheless, the conclusion that live FMD could be handled in the laboratory was to have significant repercussions in the future. The reaction, however, was delayed, mainly because few people knew of it. As shown earlier, the inquiry was attended by few outside the sponsoring departments. The Australian Veterinary Association and Australian National Cattleman’s Council had not sent representatives to the inquiry, and other interested groups or individuals outside government departments had not been contacted. Even so, it would have been difficult to have foreseen the inclusion of this conclusion in the Report merely from attending the hearing, especially in view of the reassurances in the formal submissions. That no one, outside of the interested government institutions, appeared to have read the Report would seem to reflect an ignorance of the inquiry itself, or an ignorance that it could contain such a controversial issue, given that there had been no consultation or prior discussion, and in fact reassurance had been given that live virus would not be used. Furthermore, it must be recognised that primary producer groups were not highly organised at that stage; the National Farmers’ Federation was not established and the Australian Meat Research Council was not aware of the inquiry.

The "live virus issue" did not erupt as a public controversy until after April 1981 when Professor Bede Morris addressed the Annual Conference of the Cattle Council. His criticism of the cost of establishing the laboratory and his claim that the expense was unwarranted, together with the discovery that ANAHL intended
working on live FMD virus, caused a widespread outcry amongst primary producers and their organisations and eventually called into question the role of ANAHL. The fact that the decision to import live FMD virus had been taken some months earlier in secret and endorsed by the Prime Minister without consulting industry, angered many primary producers.

These developments will be described and discussed in detail in Part Three, however, it is important to note here that although the opposition to importing live virus, and the subsequent questioning of the need for AAHL, has been explained as a result of the great fear primary producers have of FMD, it could be argued that it was also a reaction to the way the decision was made and a questioning of its authority and legitimacy. An internal BAH minute stated:

> It is evident that animal industries in Australia are upset that they have not been fully consulted on the change in attitude on this matter [live FMD virus importation]. Industry feels it has not been given an opportunity to debate the merits and disadvantages of handling exotic disease agents within ANAHL.  

Unlike the other conclusions of the PWC, the live virus decision was not "revealed" by the evidence, and, in fact, much of the evidence presented contradicted the claim that live virus was needed. Apart from the assertions that live FMD virus would not be handled in the laboratory, the PWC were told that a diagnosis of FMD could be performed without having the live virus, using reagents available from overseas laboratories, that the best vaccine was one prepared from the outbreak strain, and therefore, production of vaccine could not commence until after an outbreak, and that "a great deal of important virus research needs to be carried out on endemic viruses". That left only the training function. There were two aspects to training: one, "the training of laboratory staff in techniques for the isolation and identification of virus" where avirulent forms or endemic viruses could be used, and two, the training of field staff, "where animals can be
infected and examined." There would seem to be no alternative to using live virus to induce the disease in large animals, and it was never explained how this function would have operated without access to live virus.

Whereas other conclusions of the PWC could be legitimated by an appeal to the authority of science, and be shown as emerging from the evidence presented, this decision clearly could not. And it was the eventual recognition of this lack of authority for the decision that called into question the basis of authority for the other decisions concerning the laboratory.
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27. ibid., p.45.
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30. ibid.
31. ibid.
32. ibid.
33. ibid. p.75.
34. ibid. p.129.
35. ibid.
37. ibid. p.9.
38. Personal interview with Mr.Gee, 4/7/84.
39. ibid.
40. Conversation with W.Southcott.
41. Not only were these assurances given in the submissions to the PWC, but Mr.Flynn (CVO Victoria) was asked for reassurance by the cattle industry and the AMRC, and he was quoted in Grazing, December 1973 as saying "it is not intended that any form of foot and mouth disease virus, or any other highly infectious or pathogenic exotic disease agent, will be introduced into Australia prior to an outbreak of these particular diseases in Australia."
42. ABAH, Minute, L81/91, 5/6/81.
44. ibid. p.7.
45. ibid.
46. ibid.
"This sort of debate conjures up the murky corridors of power described so well by C.P. Snow in which scientist-bureaucrats devise plans and projects seemingly beyond the understanding of other more ordinary mortals. And because the community finds it difficult to follow the merits of a particular project when boffins fall out over it, we are inclined to let them settle the matter between themselves. What has happened with the National Animal Health Laboratory should be a cautionary tale pointing to the need for greater scrutiny by Government officials and more openness by those concerned with complex projects."

Sydney Morning Herald.
Editorial, 6/3/82.
CHAPTER XIV

THE DECISION TO COMMENCE BUILDING

The period from late 1974 to late 1977 was one in which efforts were concentrated on gaining Cabinet approval for finance to commence construction: numerous meetings and briefings were held, and approaches to individual Ministers and Cabinet were made. However, the proponents of the laboratory, now totally unified in their efforts, faced the problem of a Government committed to restraint in public spending.

The favourable report by the Public Works Committee, recommending that the project proceed as a matter of urgency, was approved by Parliament on November 14, 1974, and detailed design work and documentation by the Department of Construction and CSIRO proceeded. In the August 1975 budget, $4 million was provided for some site preparation and development works. However, following the elections in December 1975, the new Government decided to defer commencement of this work as part of its policy of restraint in Government spending.1

In March 1976, the Ministers for Science and Primary Industry presented a submission to Cabinet, asking that this deferment of construction be limited to the 1975/76 financial year and that construction commence in 1976/77, but this was rejected. A further submission from the same Ministers was presented to Cabinet early in 1977, requesting that the laboratory be admitted to the 1977/78 Civil Works Programme, but again this was rejected. This period of time also saw much less involvement by the Department of Health. McIntosh had retired as Director of Veterinary Hygiene at the end of 1970 and was replaced by Mr. Gee. However, in December 1974, the Bureau of Animal Health was established within the Department of Primary Industry, and Gee became its first Director. Although the Department of
Health, along with the Department of Construction, was represented on the Interdepartmental Coordination Committee, sponsorship of the laboratory was now limited to CSIRO and the Department of Primary Industry.

At a meeting of this committee in January 1977, a time when hopes for approval of finance were fading, it was "decided to seek support from as wide a group as possible of Departments and Permanent Heads and Ministers". In order to achieve this, it was decided that a meeting of Permanent Heads be arranged, "to inform other Departments in the event that they are asked to brief their Ministers". This was to be followed by a meeting with Ministers for a briefing on the importance of the project. Approaches were to be made to the Departments of Overseas Trade, Finance, Northern Territory, and the Department of Defence was to be consulted "to see whether they are interested in the laboratory and whether their support in Cabinet could be obtained."

Although the Government rejected these submissions calling for a start to construction, approval was given for the Specialist Groups within CSIRO and the Department of Construction to continue with design development and documentation. Apparently in response to these restrictions on finance, and the failure of the submissions to convince Cabinet of the importance of commencing construction immediately, a review of the project was undertaken in March 1977. The reviewing team concluded that:

... a re-arrangement of the buildings and services making up the complex (by placing all the secure elements within the one building envelope), could produce a facility for which construction costs would be reduced, and operating procedures greatly improved without prejudicing the required level of security.

This modified scheme had a further advantage of lending itself to staged development, thus reducing initial capital expenditure and making it a more attractive proposition for the Government.
At an Interdepartmental Coordination Committee meeting in July 1977, the results of this review were considered, and it was agreed that it warranted further study to determine whether it could form an option for presentation to the Government as a method of constructing and financing ANAHL, while meeting the Government's policy of reducing levels of capital expenditure to the lowest practicable level.8

By October 1977, estimates and technical assessments were completed and it was concluded that the new configuration was not only feasible but an improvement on the old design and significantly less costly. Whereas the estimated cost of the original design was $97 million, at October 1977 prices, the new design was estimated at $83 million and the Stage 1 option at $62 million.7

At around this time the proposal was re-submitted to the Parliamentary Public Works Committee for approval of the new design, although no record of this exists.8 The PWC Act requires that if there is cause during the development of the design to depart significantly from the accepted concept in scope, purpose, function, design solution, space or cost, the Department of Construction must appraise the Committee of the details and where necessary, seek its concurrence.9 The PWC apparently considered the change a refinement of the original design and not a new design, and therefore did not re-appraise it.10 This was despite an explicit statement of the variations covering not only a changed configuration of the building and the cost, but changes in foundation levels and filling, involving a reassessment of flood levels, airtight doors and modifications to engineering systems.11

Meanwhile, the Prime Minister, Mr Fraser, had asked that the Minister for Primary Industry, Mr Sinclair, keep the project under review. In October 1977, Sinclair was asked by the Interdepartmental Coordination Committee to seek the authority to proceed with the new design.12 This he did, pointing out to the Prime Minister not only the benefits of the new design and the saving involved, but also the implications for the forthcoming election campaign. Sinclair claimed that the
decision not to allocate funds in the 1977/78 budget had "not been well received". That the Victorian Premier had "committed $2.3m to the project on the understanding that it was to commence", and that breaches of the quarantine barriers had been "a matter of public comment". With regard to the latter, Sinclair noted a recent outbreak of Newcastle disease*, and gave a detailed account of the discovery of a virus in the Darwin area suspected of being Bluetongue. It was this Bluetongue incident which appeared to tip the scales in favour of the approval of finance.

In 1969, CSIRO established sentinel herds in the Northern Territory to monitor diseases caused by insect-borne viruses, and began a study of the role of insects in carrying and transmitting diseases to animals. In 1975, a virus isolated from insects in the Darwin area which was unable to be identified by CSIRO scientists, was sent to the Queensland Institute of Medical Research. When researchers there were unable to identify the virus, it was sent to the World Health Organisation's international arbovirus reference laboratory at Yale University in the U.S. After almost a year, Yale identified the virus as a member of the Bluetongue group and sent it to the world reference laboratory for Bluetongue in South Africa for confirmation and more detailed identification. Onderstepoort laboratory in South Africa confirmed, in November 1977, that the virus belonged to the Bluetongue group, but identified it as a new strain. CSIRO 19.

This incident provided the basis for a submission by the Australian Dairyfarmers' Federation, the Australian National Cattlemens Council, the Australian Wool and Meat Producers' Federation, the Australian Woolgrowers' & Graziers' Council and the Geelong Regional Commission, calling for an immediate start to construction of the laboratory. The submission, known as "The Urgent Case",

* Sinclair argued that "although the virus appears to have been eliminated, it has been necessary to conduct the laboratory work under unsuitable conditions."
was made up of a diverse collection of information covering such areas as the value of the livestock industry, statistics of travellers to Australia and their country of origin, a report of the meeting between the Victorian Congress of Employers Association and State Cabinet in September 1977, where Congress sought Victorian Government support in pressing for a start to building, arguments of the advantages to the construction industry in general and employment opportunities in Geelong in particular, and two newspaper reports on the discovery of a Bluetongue virus in an area of the Northern Territory. The main thrust of the submission was that if Australia had its own maximum security animal health laboratory, identification of the virus would have occurred much faster.

Although sponsorship of this submission would suggest widespread primary producer support, there is no evidence to suggest that consideration of the matter went beyond the Executive of the four organisations. Furthermore, although the Urgent Case was presented as a primary industry submission which was supported by the Geelong Regional Council, the initiative did not come from the primary producer organisations. The submission was, in fact, prepared by the Geelong Regional Council, possibly with the assistance of the Bureau of Animal Health, and then supported by the four primary producer organisations. Some years later, during the public controversy over the laboratory, when parts of the Urgent Case were used against primary producers, it became evident that few primary producers or their organisations were aware of this submission and the arguments in it.

There are a number of interesting features about the Bluetongue incident; first, it was not made clear in media releases and newspaper reports that the virus was not evident in the sentinel herds or other livestock in the area, but was isolated from insects; that is, there was no clinical evidence of the disease. This raises a second question of why the alarm was raised at this time. Two and a half years had elapsed since the isolation of the virus from insects, and during that time there
were no clinical symptoms to indicate an outbreak of Bluetongue. It must also be noted that the Bluetongue discovery posed no threat to the meat export market since the virus cannot be transmitted by slaughtered meat.\(^{19}\) Third, it was claimed that the CSIRO insect-proof laboratory at Long Pocket in Brisbane was made available immediately the virus was detected, and that the Commonwealth Serum Laboratories in its new high security laboratory, which was recognised as suitable for this task, began work to develop a vaccine using the new strain.\(^{20}\) Thus, it is difficult to understand what advantages would have been gained from having a maximum security laboratory available. Unlike other exotic diseases such as FMD, Bluetongue cannot be spread through physical contact between animals or via inhalation, but requires an insect vector, thus an insect-proof laboratory would provide adequate protection. Furthermore, CSIRO stated that "even the most virulent strains of Bluetongue are somehow 'diffused' to a certain degree under laboratory conditions and display their full effect only under field conditions."\(^{21}\)

The argument presented by the proponents of the laboratory was that the establishment of a maximum security animal health laboratory would "short circuit delays inherent in sending unidentified pathogens to overseas laboratories for identification".\(^{22}\) However, an equally strong claim could be made that Australia lacked the necessary expertise and experience which could only be gained by working constantly with the virus. Sinclair claimed that "it had taken the world's leading laboratory in the United States a year to identify the particular virus,"\(^{23}\) but for confirmation and typing it was necessary to send the virus to the world reference laboratory for Bluetongue in South Africa, where it took only a few weeks to confirm it as a previously unknown strain of Bluetongue. Mr. Gee claimed that "perhaps a year in lead time in diagnosis"\(^{24}\) might have been saved if Australia had its own exotic diseases laboratory. It is not clear on what argument or evidence such a claim could be made. Furthermore, it is not clear what difference it would have made whether it took \(1\frac{1}{2}\) years or \(2\frac{1}{2}\) years to identify the virus,
given that no disease symptoms were exhibited.

Another interesting feature was that it did not appear to unduly worry the authorities concerned with disease outbreaks. No slaughter-out programme was organised, and Mr Gee, the Director of the Bureau of Animal Health, was reported, in November 1977, under headlines of "Bluetongue outbreak threatens $70m livestock export trade", as calling "for a calm reappraisal of the situation". The Consultative Committee, which meets only in the face of a suspected outbreak of a disease, was waiting until late November 1977 for a further CSIRO report. Mr Sinclair, the Minister for Primary Industry, was informed on October 25th of Yale University's conclusion that the virus was indistinguishable from Bluetongue, however, his main concern was the potential embarrassment the incident could cause in rural electorates.

Reports to the media and The Urgent Case succeeded in creating concern over an outbreak crisis. However in an interview in March 1978, Mr Gee stated:

... we are still not calling it an outbreak 'cause we don't have any disease in animals except in the laboratory.... We don't have any clinical disease in sheep or cattle or buffaloes anywhere....

On this same programme, the interviewer introduced the topic by stating:

To the cynics there might seem some coincidence that the final go ahead on the laboratory occurred just a month or so after Australia's first outbreak of Bluetongue disease.

Mr. Gee's reply to this suggestion was that he "guessed[ed] Bluetongue was the final demonstration of the real need for this laboratory." Whether the Bluetongue incident was, as some have suggested, a manufactured crisis, or an example of capitalising on a 'useful' incident, can only be a matter for speculation. However, on November 8, 1977, an 'ad hoc without submission' decision was taken by Cabinet, that construction of the laboratory
should proceed without delay.

After the comparative quiet of the previous three years, the end of 1977 was a period of heightened activity; not only was there the new design to consider and the Bluetongue incident to deal with, but an election was to be held in December. The Prime Minister, Mr. Fraser, announced in a policy speech on November 21, 1977 that the laboratory was an urgent requirement which would commence "forthwith". Mr. Sinclair stated in an interview that the laboratory would "be constructed as soon as practical and certainly a lot earlier than originally anticipated by the Government". However, neither CSIRO nor the Departments of Construction and Primary Industry were clear "as to precisely what the Government's actual intentions were as regards construction and expenditure rates", since the Cabinet decision of November 8, 1977 was not made known, even to the sponsoring departments, until after the election. A flurry of activity followed, to ensure all the formal procedures associated with the admission of an item to the Civil Works Programme were undertaken in time to permit fulfilment of the Government's announced intentions.

The new design was accepted, but the announcement that building would commence made no reference to a staged construction programme. The Department of Finance later queried this, and were advised that "both the Department of Primary Industry and CSIRO believe very strongly that the project should be a single stage project". It was further pointed out that construction of Stage 1 would not provide the vaccine production unit and would only have half capacity for vaccine testing, that "there would be an additional cost penalty" involved in a staged construction, and that the single stage programme was based on the functions and requirements accepted since 1972. Thus, it could be argued, that the proposal to stage construction was a political move designed to gain acceptance for the project in a climate of economic restraint. Once it became apparent that this cost reduction was not a significant factor in the decision to commence building,
the idea was dropped.

On March 20, 1978, the Prime Minister, Mr Fraser, turned the first sod on the Geelong site. After years of painstaking planning and political strategy and, at times, extremely slow progress, the final decision appeared to be a rushed muddle of "ad hocery" and political expediency which had little to do with the scientific arguments, or the stated Government policy of restraint of spending. It is not even clear where the $2m allocation came from, as it was not included in the budget for that financial year.

Furthermore, despite three years of delay by the Fraser Government, the Prime Minister and the Minister for Primary Industry now indicated a keenness to expedite construction, and in January 1978, even before building started, requested an examination by CSIRO and the Department of Construction as to whether the duration of the project could be shortened beyond the present projection of seven years. In April 1978, the Department of Construction advised Sinclair that after reviewing the situation, construction time could be reduced to six years and perhaps less.

Nothing further was done about this until late 1979 when Fraser sought the advice of Mr. Nixon, the new Minister for Primary Industry. Nixon replied that in view of the advice of the Department of Construction that construction time could be reduced by one year at an additional cost of $7 million, he agreed that the project should be accelerated. He also advised Fraser that he was prepared "to introduce the subject at an appropriate time in Cabinet." The "appropriate time" occurred quite quickly since Nixon announced on December 19, 1979, that an extra $7 million would be provided to accelerate construction of the laboratory. This decision was

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* The compliance by Cabinet to the Prime Minister's view would appear to substantiate the suggestion that Cabinet decisions at this time only needed like-minded individuals, and since Sinclair, and later Nixon, were close to Fraser, submissions were often just a formality, with government operating on an ad hoc decision-making basis. [Interview with Mr Gee, 4/7/84]
justified on the basis of another suspected exotic disease outbreak, this time a vesicular disease in pigs at Legana, Tasmania, which occurred in October 1979.

As we have seen, bureaucratic politics plays a considerable role in the decision-making process, influencing such issues as setting the agenda, defining issues, selecting options and negotiating agreement. However, under the Westminster system of government, constraints exist which can limit the decision-making capabilities of the bureaucracy. As Painter and Carey point out, departmental delegates cannot engage fully in the process of partisan mutual adjustment, since the bureaucracy is not the arena "for final resolution of conflict, complete settlement of interdepartmental differences, or conclusive debate on and resolution of policy." 39

Lindblom's analysis of the policy making process distinguishes between coordination by central command and by partisan mutual adjustment. 40 Unlike a unitary system where organisations or departments are directed from the centre, partisan mutual adjustment occurs where there is no central command position, and coordination occurs through such processes as negotiating and bargaining. Whilst Lindblom's analysis may be appropriate for the United States system of government, it presents difficulties when applied to the Westminster system which posits coordination by central command. Painter and Carey argue that the Australian system of government is a "unitary system with tendencies towards fragmentation", 41 the fragmentation being a "de facto recognition of the impossibility of complete and effective central command." 42

The final decision to provide funds for the construction of AAHL was outside the direct control of the departments advocating the establishment of the laboratory: the norms of the Westminster model constrained the activities of the bureaucracy, leaving them with only the passive role of requesting funds. However, the Bluetongue announcement, combined with an election provided the proponents with an opportunity to actively influence the decision. The proponents
of the laboratory seized upon the Bluetongue incident as a means of highlighting the need for the laboratory, arguing that the threat to Australia from an exotic disease outbreak had now been demonstrated. This was potentially embarrassing to the Government, since it had reversed the Labor Government’s decision to allocate funds for construction in 1974. Furthermore, the Liberal Party needed the support of the Country Party to win the election, and hence, the primary producer vote was an important consideration in the forthcoming election. Thus, at a time when the proponents feared that the proposal may be shelved, the Bluetongue incident provided an opportunity and a basis for a new campaign.
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CHAPTER XV
THE DECISION TO IMPORT LIVE FMD VIRUS

The ANAHL Consultative Committee was established in 1978 by the Ministers for Health, Primary Industry, and Science and Technology, to advise the CSIRO Executive on all matters pertaining to the programme and operations of ANAHL. The Committee consisted of the Permanent Heads of the Departments of Health and Primary Industry, the Chairman of CSIRO, and the Director-General of the Victorian Department of Agriculture representing the Australian Agricultural Council. It usually operated through its Alternates, Mr. Gee, the Director of the Bureau of Animal Health, Dr. Pierce, who had now become a member of the CSIRO Executive, Mr. Doyle, the Assistant Director-General, Department of Health, Dr. Rushford, Chief Veterinary Officer of the Victorian Department of Agriculture and AAC representative, and Mr. Snowdon, the Officer-in-Charge of ANAHL.

At the first meeting in August 1978, the question of the operation of the vaccine production unit was raised and it was decided that further discussions between the Department of Health, CSIRO, the National Biological Standards Laboratory and Commonwealth Serum Laboratories should be held following Snowdon's visit to overseas facilities. Although Gee pointed out that in preliminary discussions held by Australia, Canada, New Zealand, the United States and the United Kingdom with the Wellcome Foundation and Merieux, "the parties concerned were satisfied that if a wild FMD strain was not involved there would be adequate off-the-shelf availability of FMD vaccine from these manufacturers," the Committee "agreed to continue its investigation into how FMD vaccine could be produced at ANAHL."

For the second Consultative Committee meeting, Snowdon produced a report on
FMD vaccines, recommending that FMD virus be handled in ANAHL to produce diagnostic reagents and batches of vaccine prior to an outbreak, that a bank of FMD vaccines prepared in ANAHL be established, and that potency and safety testing of vaccines produced by ANAHL be undertaken. The arguments supporting the use of vaccine were that although the preferred method of control of an outbreak of FMD would be slaughter-out, vaccination might be used in an explosive outbreak or if an outbreak occurred in the remote areas of Northern Australia where slaughter may not be feasible. In the latter situation it was argued that vaccination would only be used as a last resort and therefore sufficient time to manufacture suitable vaccines would be available; however, in the case of an explosive outbreak, vaccines may be required within two to three weeks or less and therefore supplies would need to be on hand.

In support of vaccine being manufactured at ANAHL, arguments against reliance on overseas vaccine banks or manufacturers were presented, along with claims of the advantages of ANAHL producing the vaccine. Snowdon also claimed that

... unless the vaccine production unit in ANAHL is able to produce batches of FMD vaccine prior to an outbreak, it is likely that the vaccine production unit will be of limited value, even when vaccine could be required over a one to two year period.

It has been shown in Part One that the decision to include a vaccine production unit was not based on scientific arguments, but was a compromise reached to take account of the PET recommendations, and to satisfy the States. Furthermore, the submissions to the PWC stated that stockpiling of vaccines was unsatisfactory, and that vaccine production would not be undertaken prior to an outbreak. Now, however, the PWC's approval of a vaccine production unit, and its recommendation that the laboratory should be authorised to handle FMD virus prior to an outbreak, were used as the basis for the arguments that FMD vaccine should be
produced prior to an outbreak. The suggestion that the current proposal was merely the logical outcome and the fulfilment of a previous decision, and that opposition would thwart the intention of the original concept of the vaccine production unit, provided a strong pressure for concurrence.

Whilst it has been argued that a piecemeal or incremental approach to decision-making is an efficient and practical method which reduces alternatives and complexity and allows decisions to be more easily reversed, it would appear that this strategy can be used to provide an authoritative basis for a subsequent decision which prevents reappraisal and possible reversal and which extends the scope of the original intention. This would suggest that the phenomenon of 'momentum' needs to be taken into account in explaining decision-making in the political sphere.

After consideration of Snowdon's paper, the Consultative Committee at its September 1979 meeting agreed that "it was essential that a FMD vaccine production unit eventually be installed at ANAHL which entails the authority to introduce live viruses and perhaps produce vaccine in advance of an outbreak of FMD in Australia". The reasons put forward for this were international trends and improving confidence in FMD vaccines, and a belief in the increasing likelihood that vaccination would be used in Australia in an eradication campaign. However, only twelve months earlier, Pierce had written to Professor Ada, an expert previously consulted by CSIRO, that:

F&M vaccine is, by present day standards, of very poor potency and its manufacture requires the production of enormous quantities of virulent virus - a real safety hazard, together with a great deal of potency and safety testing in the definitive animal - cattle- posing a further serious safety hazard.

Another important development which appeared not to be considered in the discussions regarding the vaccine production unit, was the Independent Inquiry
into the Commonwealth Serum Laboratories (CSL), carried out in 1978. This investigation found it "extraordinary" that it had been claimed CSL would not have the capacity to manufacture FMD vaccine, since it already dealt with severe human pathogens such as yellow fever virus; "even more extraordinary" that the position and advice of CSL, "the nation's only manufacturer of human and animal vaccines", was not put to the PWC Inquiry into ANAHL; and "most unbelievable of all", that no reference had been made to the new maximum security laboratory which had been designed to deal with highly pathogenic viruses like rabies. The Report concluded: "Is the Inquiry to believe CSL is competent to deal with rabies but not with FMD?" 10

As the first step towards gaining endorsement for the importation of live FMD virus, the support of the Animal Health Committee (formerly the CSVC) was sought in November 1979. At this Animal Health Committee meeting, Gee, in his capacity as Chairman of the ANAHL Consultative Committee, stated that "the original brief of ANAHL included examination of handling FMD virus but that this had been opposed by the Australian Meat Board and the meat industry". 11 He neglected to mention that the Interdepartmental Committee and the Commonwealth-States Veterinary Committee Working Party recommended against using live virus, and that all submissions to the PWC contained reassurances that live FMD virus would not be manipulated prior to an outbreak. Gee argued that the use of vaccination in Australia needed to be re-evaluated in view of "international trends and improving confidence in FMD vaccines". 12 Dr. Rushford, a member of the Consultative Committee as well as Animal Health Committee, reinforced this point arguing that:

"Australia would have to face the reality that vaccination could be used as part of its control policy in the event of a major outbreak". 13

It was agreed by AHC that "a strong case should be presented to SCA , followed by a low key approach to industry to gain support." 14 The recommendations of AHC
that there be a re-examination of the use of FMD vaccination in Australia and an acceptance of the policy that ANAHL be used for research and development of FMD vaccines which would involve handling FMD virus in advance of an outbreak, went before the Standing Committee on Agriculture (SCA) in January 1980. Although one of the functions of SCA is to advise the Australian Agricultural Council (AAC) on technical aspects and the initiation and development of agricultural research, the discussion on this proposal at SCA did not involve an appraisal of scientific or technical arguments. When the representative for Victoria was asked by the Chairman of SCA for his views, Dr Smith replied: “To be blunt, Dr. Rushford’s advice to me is to accept the recommendations... as a plant man, I would accept this advice.” It must be remembered that Dr Rushford, as CVO of the Victorian Department of Agriculture, was not only a member of the ANAHL Consultative Committee but was the representative of SCA/AAC on that committee and therefore his views were influential. When the Tasmanian representative, Mr. Fountain, stated that: “luckily it [i.e. ANAHL] is going to be in Victoria, presumably, and they are willing to take the risk. With Bass Strait, it is difficult for us to worry too much”, the Chairman of SCA replied “if Dr. Rushford agrees with it, there will not be any risk.”

This approach of relying on the expertise of Dr Rushford and the Consultative Committee effectively avoided any detailed consideration of the scientific aspects of the proposal by the SCA. They were, however, concerned about the reaction of primary producers to the proposal. The Chairman stated: “selling it to the industry is going to be very hard.” Dr. Smith claimed that Victoria was prepared to run the risk of using the live virus at ANAHL for the sake of the whole of Australia but stated: “we will probably ask for some special funds to sell this to our rural community. That will be an important aspect of it.”

SCA recommended to AAC that ANAHL be used for research and development of FMD vaccines, recognising that this would involve handling the virus in advance of
an outbreak. They further endorsed the recommendation of the Animal Health Committee that:

... the livestock industry would have to be made aware of the reasons why this course of action was favoured and that therefore an extension campaign must be mounted jointly by member organisations to achieve livestock producer backing for the policy.\(^20\)

The SCA recommendations were presented to AAC in February 1980 where, despite the fears and reservations of most of the members of the Council, Nixon managed to push through an endorsement. Thus, when Mr. Day and Mr. Smith expressed their fears of introducing live virus into Australia, Nixon pointed out that the recommendations came from SCA who are "more technically minded on these matters than we are."\(^21\) When Mr. Aulich expressed the opinion that farming organisations should be approached before approval by AAC be given, Nixon replied that:

... the reason we need the Council's support is that there is a lot of planning in the construction of the laboratory. We might save the Commonwealth a few million dollars if you propose not to complete it to such safe security standards.\(^22\)

This would appear a spurious argument. At no time was it suggested that less stringent security measures would be adopted if vaccine production was not undertaken, and it could just as easily be argued that if it was decided not to proceed with the vaccine production function, either because of alternative supplies of vaccine or because it was decided that a vaccination program would never be undertaken in Australia under any circumstances, the Commonwealth could save a few million dollars by not equipping a vaccine production unit.

The AAC agreed with SCA's recommendation, and noted that this involved handling live FMD virus in advance of an outbreak. They also endorsed the suggestion that a campaign be mounted to gain the support of the livestock
industries, noting that this campaign should be undertaken prior to ANAHL handling the virus, but not, as suggested by some members of AAC, prior to approval for the proposal.

In March 1980, the CSIRO Executive considered the ANAHL Consultative Committee's proposal and "agreed that ANAHL be authorised to handle live FMD virus for research purposes and vaccine production in advance of any outbreak of the disease in Australia."^{23} It was also agreed that the concurrence of the Ministers for Science and the Environment, Primary Industry and Health, and finally the Prime Minister, be sought, and, subject to this agreement, that "steps be taken to advise relevant primary industry groups of the issues involved and the reasons for the change in policy, with a view to obtaining their support."^{24}

The CSIRO Executive advised Webster, the Minister for Science and the Environment, that it would be in the national interest for ANAHL to have access to FMD virus in advance of an outbreak. Webster then sought the support of the Ministers for Primary Industry and Health in July 1980, and together they approached the acting Prime Minister, Mr. Anthony, who endorsed the recommendation in November 1980.

There are a number of significant features about this episode. First, the recommendations that live FMD virus be imported, and that vaccination be considered as a control measure in the event of an outbreak of FMD, represented a substantial departure from established policy. As shown previously, there had been no discussion following Eichhorn's recommendation that the laboratory undertake vaccine production, of the advisability of Australia resorting to vaccination should an outbreak of FMD occur. Official policy was still that a slaughter-out campaign would be the method of control adopted. And, apart from the PWC recommendation, all reports were either explicitly opposed to ANAHL handling FMD virus prior to an outbreak, or stated that live virus was not required to carry out the functions.

The arguments used to support the proposal that Australia may undertake
vaccination were the success overseas in controlling FMD using vaccination, and the improvement in vaccines. However, the U.K. had not resorted to vaccination, even when faced with a massive outbreak of FMD, and official U.S. policy was to adopt a slaughter out programme and not vaccination; the U.S. laboratory at Plum Island did not manufacture commercial quantities of vaccine. Furthermore, it was widely believed at the time that a large number of FMD outbreaks were the result of either inefficiently inactivated vaccines or laboratory escapes in the vaccine production process. Thus, it could be argued that the original decision to include vaccine production was irresponsible if vaccines were previously considered dangerous and unsatisfactory.

Once the argument that Australia may undertake vaccination was established, the next step was to claim that overseas supplies were unreliable or unsuitable and that ANAHL must therefore manufacture its own. This argument ignored the previous negotiations with the Wellcome Foundation and Pirbright, and also the current discussions of the possibility of Australia participating in an international vaccine bank being established by the FAO. In March 1979, the European Commission for the Control of Foot and Mouth Disease discussed a proposal to establish an international vaccine bank. Further ad hoc discussions were held in December 1979 by the FAO. After consideration by the Executive Committee of the European Commission for the Control of Foot and Mouth Disease and by the OIE Regional Commission for Europe, the vaccine bank concept was accepted in principle in September 1980 and Australia was listed as an interested participant.

Another important feature relates to the function of the ANAHL Consultative Committee. The stated role of this committee was to advise the CSIRO Executive on matters pertaining to the programme and operations of ANAHL, yet in this proposal it was recommending exotic disease control policy. In Australia, each State is responsible for its own disease control. However, recognising that in certain circumstances a national approach would be necessary, the Consultative Committee
of the Australian Agricultural Council was formed in 1941 to detail approved procedures for disease control and eradication. As Director of the Bureau of Animal Health, Gee was Chairman of both the ANAHL Consultative Committee and the Consultative Committee of the AAC. This overlapping membership explains why the ANAHL Consultative Committee appeared to usurp the role of the Consultative Committee of the AAC, and why the proposal was first endorsed by the Animal Health Committee, the SCA, and eventually the AAC, before going to the CSIRO Executive. However, it also suggests that there was little room for alternative views to be discussed.

Chapman argues that when officials feel particularly anxious and insecure they may attempt to create consensus to confer on decisions a higher degree of authority than they would otherwise have. In this case consensus did not emerge from consultation with all the relevant groups; instead, consensus was manufactured by consulting with as many potential supporters as possible, whilst avoiding those who may wish to oppose the proposal. Although it appeared that extensive consultation had occurred within the bureaucracy and government, on close examination it can be seen that the arguments justifying the proposal all stemmed from Snowdon's report prepared at the request of the ANAHL Consultative Committee. All subsequent considerations deferred to the previous committee's expertise without, according to the Minutes of the meetings, examining the evidence presented or considering alternatives.

Once all the animal health authorities had endorsed the proposal, it was presented to the CSIRO Executive, who then sought the views of two prominent scientists outside their organisation. Thus, by the time the proposal was put before the relevant ministers, it appeared that all possible consultation had been undertaken and that there was universal agreement.

However, it was apparent that the Consultative Committee was anxious about the reaction from primary producers. All the minuted discussions on the proposal
were more concerned about public reaction than about the safety or need to import live virus. It would seem that because of this concern, the strategy of gaining the support of all the animal health authorities and relevant ministers before making a public announcement was adopted in the hope of overcoming the expected opposition. Nowotony argues that knowledge sources are most effective when they present an image of unanimity and certainty. Furthermore, knowledge can be a considerable resource which may be withheld from the public or used to influence and manipulate public opinion. By withholding from primary producers the decision to import live FMD virus, the animal health authorities could then plan to "sell it to industry" and announce the decision at a favourable time. Once the decision had been taken and endorsed at the highest levels, the proponents then saw the problem of gaining primary producer support as one requiring propaganda and reassurance. As Wynne has argued, political activity can influence, and even create, new values, "using scientific knowledge as a medium for such covert moral persuasion."  

Although concerned about public reaction to the decision to import live FMD virus, the proponents believed they had time to mount an effective campaign. At the SCA meeting the Chairman stated: "You have about 3 years and I think you might need a campaign like that to get general acceptance". However, the fuse was lit earlier than anticipated at the April 1981 Annual Conference of the Cattle Council of Australia. During the course of this conference, primary producers became aware of plans to import live FMD virus into ANAHL once microbiological security had been established. Furthermore, Professor Bede Morris, Head of the Department of Immunology at the John Curtin School of Medical Research, Australian National University, expressed the view that the Cocos Island maximum security quarantine station was "clearly 50 years too late" given the advances in the biological sciences, and that ANAHL represented a misdirection of resources. He argued that there was no need to work on diseases which were not present in
Australia, and that the large expenditure on ANAHL would adversely effect more relevant research. ANAHL, he claimed would not benefit Australian cattle producers "one iota".30

The other speakers at the Conference were Dr. H.G. Osborne from Queensland University, who had been briefed by both Snowdon and Gee,31 and Mr. D.Flynn, a long-time advocate of ANAHL and member of the CSVC working party which reported on the need for the laboratory. Apparently it was intended to use this conference as a venue to air the idea of importing FMD virus into ANAHL, but as one bureaucrat remarked,

... we were not very successful at keeping the FMD vaccine story low key. It developed into a live virus issue and became very much an irrational public debate farmed along by Bede Morris et al.32

Following the expression of strong opposition by the Cattle Council, CSIRO requested advice from the ANAHL Consultative Committee on a strategy for obtaining the support of the appropriate primary industry groups. At the sixth Consultative Committee meeting in May 1981, it was agreed that a "relatively low key campaign providing information to local groups, carried out mainly by the States, will prove to be the most effective strategy", since "activity to date has not been as effective as expected."33 The ANAHL Consultative Committee recommended "that the best strategy to adopt for obtaining industry support should contain the following elements:

- increased activity by State Departments, providing information to local industry based on basic material developed by the Officer-in-Charge of ANAHL;

- a public statement issued by the Chairman of CSIRO explaining the need for ANAHL in the event of an outbreak of an exotic livestock disease, the basis of CSIRO's involvement, the reason for handling exotic viruses in advance of an outbreak;

- firm responses from the Minister for Primary Industry and the Minister for Science and Technology to the resolution adopted by the Cattle Council
of Australia, stating the necessity for working on FMD virus in advance of an outbreak.\textsuperscript{34}

In the statement prepared by the Consultative Committee for the Chairman of CSIRO, reference to Ministerial and Prime Ministerial approval for importation of the live virus was omitted and the Chairman was advised "not to mention this decision at present as it is necessary for this sensitive issue to be canvassed widely with the livestock industry before public announcement."\textsuperscript{35} Further advice stated that "if questioned you could say that the Government has approved the introduction in principle but no action will be taken until there has been full consultation with the livestock industry."\textsuperscript{36}

Following the discussion at the Annual Conference, the Cattle Council of Australia wrote to the Minister for Primary Industry, Nixon, and the Minister for Science and Technology, Thomson, asking them not to proceed with plans to import live FMD virus.\textsuperscript{37} Nixon replied that advances in recombinant DNA technology did "not in any way negate the need to import and handle live FMD virus in the Australian Animal Health Laboratory",\textsuperscript{38} that a diagnostic capability could "only be effectively developed if ANAHL has access to FMD virus"\textsuperscript{39}, and that live virus was also needed for research and training.\textsuperscript{40} This "firm response" concluded by stating:

\begin{quote}
Please assure the Cattle Council of Australia that the microbiological security at ANAHL will be of such a high standard that the use of FMD virus or other exotic disease agents in this laboratory will in no way endanger the cattle industry.\textsuperscript{41}
\end{quote}

At the same time as Nixon was reassuring primary producers about the safety of using live viruses at ANAHL, the Bureau of Animal Health was privately discussing the risks. In an internal minute, the Assistant Director, Mr. Digby, wrote:

\begin{quote}
Of course we must face up to the remote possibility of an 'escape' from ANAHL at some time in the future. I have discussed this matter with the Director [Gee] and at least offered some positive proposals in terms of preparing the livestock industry for such an eventuality (at the appropriate time).\textsuperscript{42}
\end{quote}
The Acting Assistant Director of Epidemiology in the Bureau, Dr. Geering, also wrote:

I agree that there is no such thing as 'absolute' safety in respect to containment of microorganisms within a laboratory. No matter what the physical security is of the building, there is always the element of human error (or sabotage) to consider. \(^{43}\)

The Cattle Council, obviously concerned by Nixon's reply, wrote again, pointing out this time that "any decision to introduce the virus will be strongly opposed by producers until such time as the issue has been exhaustively and publicly debated and industry has had the opportunity to play a central role in any final decision." \(^{44}\) In his reply this time, Nixon resorted to the "in principle decision" tactic and agreed that there was time for consultation before ANAHL would be ready to import live viruses. \(^{45}\)

The claim that the decision to import live FMD virus had only been taken in principle, did little to allay the fears of primary producers. Nor were primary producers convinced by the reassurances about safety, or by the arguments of the need for live virus, and in this they were supported and influenced by a number of scientists. Furthermore, they objected to the way the decision had been taken, secretly and without any consultation with industry groups. As Conrad points out, "decisions on technological risks are never made by the group exposed to the risks" \(^{46}\) and therefore, the "imposition of risk on others can be interpreted as a form of oppression." \(^{47}\) Primary producers were outraged not only by the content of the decision, but also by the manner in which the decision had been made. Wynne has argued that "the manner of political decisions may be more significant than their content" \(^{48}\), and that much of the reaction to decisions may be "antagonism to perceived arrogance and secretive paternalism." \(^{49}\)

At first, the advocates of importation of live virus attempted to dismiss the
farmers' opposition as irrational and uninformed. However, CSIRO was forced to admit privately that there was

... some substance in the material presented to the Cattle Council of Australia by Professor Morris in that developments in recombinant DNA techniques may in the future lead to a situation where there was no need to import live FMD virus.  

Furthermore, at a CSIRO Executive Meeting in June 1981, where recent press articles based on a release by the U.S. Department of Agriculture regarding advances in recombinant DNA technology were discussed, it was agreed that this development "raised questions of the necessity for CSIRO to import live virus for use at ANAHL in advance of an outbreak of FMD in Australia as had been agreed by the Executive and appropriate Ministers."  

Thus, the scientific basis of the arguments justifying the decision to import live FMD virus, namely the research and development of FMD vaccines, was recognised by both proponents and opponents of the decision as being open to question. At a CSIRO Executive meeting, "it was the view of some Executive members that action on proposals to import live FMD virus should be postponed and that the NFF be frankly advised of the situation".  

However, these doubts were never admitted publicly by the proponents.  

Over the next several months, the issues became increasingly complex. The proponents had failed to reassure primary producers of the safety of the proposal, and to defuse the situation by using "the no introduction without consultation formula" and they were experiencing difficulty in maintaining their position that live virus was needed for vaccine production, although some claimed that it would be a long time before the old methods of production were supplanted. One newspaper editorial suggested that Mr. Gee may be playing down the significance of this new development in vaccine manufacture in order to justify the laboratory and the importation of live virus.
The reported development in vaccine production techniques at this time, the strength of the public opposition, and the support given to farmers by some scientists, apparently took CSIRO and the Bureau of Animal Health by surprise; their carefully planned strategy for gaining support of primary producers and justifying their decision was no longer appropriate. Now that the original basis for justifying importation of live FMD virus had been called into question on scientific grounds, a new strategy was needed. At this stage three options were available to CSIRO and the Bureau of Animal Health: they could have made public their reservations about the need for live virus given the recent advances in recombinant DNA technology, and agreed to withdraw the decision to import live virus in advance of an outbreak; they could have adopted a "wait and see" attitude which reviewed the situation once the laboratory was completed; or they could defend the decision to import FMD virus with new justifications. The adoption of the last course of action appeared more a reflex action than a considered rational choice. With the growing public concern came an increasing number of reports, statements and questions from various interested parties, and this seemed to expand and confuse the issues involved. Unprepared, the proponents of live virus importation* appeared to be reacting on an ad hoc basis to the various arguments and criticisms of the opposition.

It is not obviously apparent why the proponents were determined to continue to press for the introduction of live FMD virus into ANAHL. It is unlikely that it was because they were irrevocably committed to vaccine production at ANAHL; as late as July 1981, the Consultative Committee was still discussing the options available for the vaccine production unit and these were identified as:

* The main proponents of importation of live FMD virus were CSIRO and the BAH, i.e. the organisations sponsoring the laboratory. However, their representation on the ANAHL Consultative Committee, the Animal Health Committee and SCA, extended their influence and support.
(i) Halt construction.

(ii) Provide the building and general services, but no equipment for vaccine production.

(iii) Provide the building and general services, no FMD vaccine production equipment, but equipment for the production, freeze drying, dispensing and packaging of live attenuated vaccines.

(iv) Provide the building and general services, plus some equipment for the production of inactivated whole virus or purified subunit vaccines prepared by recombinant DNA technology, with or without equipment for production, freeze drying, dispensing and packaging live attenuated vaccines.55

The ACC concluded that option three was the logical course to follow,56 but even at this stage they could have chosen to halt construction or provide space and general services only. This would have been more in keeping with the decision of the FAO, who decided to adopt a "wait and see" policy for two years to assess the progress on recombinant DNA vaccines before continuing with their international vaccine bank.57

It was argued by Dr. Ferguson at a CSIRO Executive meeting that although "the basis for seeking approval in 79/80 was the need to plan ANAHL buildings to include a vaccine production unit" this was "only one of the elements in the use of live virus".58 Minister Nixon also used this type of argument in his first reply to the Cattle Council, where he claimed that live FMD virus was required for diagnosis, research and training. The difficulty attached to taking this approach was that it ran counter to all the earlier statements, including the PWC submissions, about the need for live virus. It had always been maintained that ANAHL could carry out its prescribed functions adequately without access to live FMD virus. The argument that current thinking favoured the manufacture of FMD vaccine prior to an outbreak and for this reason live virus was necessary, avoided any admission that the earlier claims were mistaken or false. Now, however, new arguments needed to
be established to justify this altered stance.

At the May 1981 meeting of the ACC, it was noted that there was "no equivocation amongst the Chief Veterinary Officers in their support for ANAHL handling exotic viruses" ⁵⁹, but no reason was given for their desire to have access to the live virus. Some members of the ACC, however, must have begun to feel nervous about the opposition. At the July meeting, the question was raised as to whether the policy to introduce live FMD virus should be re-endorsed by the Australian Agricultural Council, presumably to stress the authority of the decision. This was rejected on the grounds that approval had already been given, and that they "should endeavour to keep the matter out of Council", although this wording of the minutes was subsequently changed to read, "there was no need to raise the matter unnecessarily with Council." ⁶⁰ This could suggest that those members of the Consultative Committee committed to importation of live virus were not confident that the proposal would be re-endorsed at this time.

Both Gee and Snowdon strongly advocated importation of live FMD virus; Snowdon had written the original report recommending importation and Gee, as Chairman of the ACC, had taken the case to AHC. Gee and Snowdon were also involved in the informal discussions which occurred during the PWC hearing and which appeared responsible for the unexpected conclusion of the PWC, that after a suitable proving period the laboratory should be authorised to handle live FMD virus prior to an outbreak. Media reports now began appearing with Gee stating that "Australia cannot expect to develop effective foot and mouth disease controls until live foot and mouth viruses were introduced" ⁶¹ and that "those who opposed the live virus introduction were acting 'conservatively without understanding all the facts'". ⁶²

Meanwhile, CSIRO decided to hold an Executive Seminar which "was to be structured to allow emphasis on the issues of the introduction of live exotic disease material to ANAHL in advance of an outbreak". ⁶³ Following this seminar the CSIRO
Executive agreed that "the introduction of live virus was seen as an essential to the
development of a research program at the laboratory and without such a program,
management by CSIRO was questionable." It is important to note that this same
argument had been put forward by the CSIRO Executive in February 1969 when it
stated: "it is not clear at this stage if viable viruses would be introduced; if not, there
appeared to be little point in CSIRO being responsible for the research." , although
Pierce at that time had outlined a research function for the laboratory which did
not depend on live exotic virus. By the end of 1969, however, the Executive had
revised its view, stating that :

... it considers that it would be unwise to introduce serious exotic disease
organisms, particularly the foot and mouth disease virus, into this
laboratory for research or any other purpose. The Executive is satisfied
that the facility, if used for research on virus diseases already present in
Australia would provide the stimulus and the type of training for
virologists which is so urgently required if we are to have effective
scientific backing for disease control in the future.

In view of this statement, it is difficult to understand why the earlier
argument was resurrected, except as a way of justifying importation of live virus.
unless, of course, it was always intended that live FMD virus would be imported.
When Dr. Jones of the Australian Meat Research Council (AMRC) expressed to the
ACC, "constructive views on research that could be done at ANAHL without
introducing exotic disease agents" , Dr. Ferguson of CSIRO "emphasized that the
laboratory should not be used for research not requiring maximum security since
such work could be done more economically elsewhere."

Another argument put forward at this time by the ACC was that "it was
essential that exotic viruses be available for study in ANAHL if top scientists were to
be attracted to work there." However, Dr. Lascelles, (Chief, Division of Animal
Health, CSIRO) pointed out to the CSIRO Executive that just because the laboratory
was being built to contain FMD virus, it did not mean that it was desirable to work on
the virus. Professor Morris was also critical of this attitude, claiming that "CSIRO was attempting to work out what it should do in a research sense and justifying it because of the availability of the facility", that "there had been no objective planning of the research program", and that "political decisions had influenced scientific reasoning."

It is not surprising, given the inconsistencies and changes in justifications presented to primary producers, that the Australian Commercial Pig Producers' Federation (ACPPF), wrote to Nixon that "the arguments put forward in support of the establishment of ANAHL and of the importation of FMD virus appear to the ACPPF to lack substance." Whilst the ACPPF represented an extreme position, being "totally opposed to the establishment of ANAHL," other industry organisations remained firm in their opposition to importation of live virus, despite the efforts of the proponents to convince them otherwise.

That the various arguments put forward at this time did not provide compelling reasons for importing live FMD virus led some observers to speculate that there were more sinister reasons for wanting the virus at ANAHL. Whispers were heard about the laboratory being used for biological warfare research, with FMD virus merely an excuse to explain full security precautions. However, there is no firm evidence to support these rumours. It would seem more likely that CSIRO and the BAH were responding to, and resisting strongly, what they saw as an attempt to reduce their decision-making autonomy. Believing they had the authority, expertise and rationality to make decisions which served the public good according to their definition, they resented any challenge and portrayed, and perhaps perceived, the opposition as emotional, uninformed and self-serving.

Perhaps too there was an element of "empire building" and nationalism involved. At the CCA Annual Conference, Mr. Flynn referred to the laboratory as "this gorgeous jewel" and claimed that:
... if we have this jewel, this expensive laboratory, if it is beautifully equipped and if these scientists come here and see that to be so, then Australia’s standing as a world scientific group, the standing of Bill Gee and people who make statements about the disease status of Australia, is enhanced around the world.75

Furthermore, by not reversing the decision to import live virus on scientific grounds at the time the advance in recombinant DNA technology was announced, the authorities lost the opportunity to do so later without appearing to bow to external pressure or to “lose face” by admitting error or misjudgement. By adopting an authoritarian and defensive attitude toward the opposition, CSIRO and the Bureau of Animal Health became committed to a course of action which was to have significant consequences. As Wynne points out,

... the tendency towards secrecy and the understateinent or even outright suppression of uncertainty or conflict in decisions generates more problems than it is supposed to solve ... attempts to gain authority on specific decisions and issues by using spurious images of certainty, gives rise to a greater and more general loss of authority by the institutions as a whole when that image is eventually punctured, as they nearly always are.76

Regardless of why the proponents were anxious to import live FMD virus, the fact remains that primary producers were opposed to importation on any grounds.

The period of time from the discovery of the intention to import live FMD virus until the release of the Fenner Committee Report in 1984 can easily be overlooked as merely a time of confusion where views were expressed, issues debated and conflict eventually resolved. However, closer examination confirms Nelkin’s claim that “opposition to technological projects develops in stages as public questions about specific issues are transformed into concern with the decision-making process” 77 and, Wynne would add, the authority, credibility and trustworthiness of the institutions involved in the decision making process.78 What began as a debate on the safety of importing live FMD virus, moved to a questioning of the need for live virus and, in some quarters, even at this early stage,
to a questioning of the need for the laboratory itself, the latter being reflected in newspaper articles such as "Farm Disease Lab: A $100m Blunder?" and editorials calling for a re-assessment of the laboratory’s priorities.

The involvement of various scientists in the controversy provided a further argument; that of resources. It was maintained that the laboratory had, and would continue to have an adverse affect on the allocation of funds for other research which may be more relevant to Australia. In this way scientists were calling into question the establishment of priorities in decision making. The competence of the decision makers in these matters was further questioned when primary producers, who had previously hailed the reported developments in recombinant DNA technology, realised that this same development could disadvantage them by eliminating FMD from other countries, especially EEC countries, thus threatening Australia’s export markets. Farmers and others began to question the logic of spending money on research into improved FMD vaccines and exotic diseases when it was open to question whether Australia would reap the benefits, and in fact, it had been argued that Australia could even suffer some disadvantage.

These early months of the controversy were significant in defining the terms of the debate and in determining the course the controversy would take. The initial reaction from farmers was an objection to the importation of live FMD virus on the basis of the risk it posed to the livestock industry. The proponents countered this with reassurances about the security of the laboratory. This then was the basic conflict; the proponents wanted access to the live virus and believed the risk minimal, whereas primary producers considered the risk unacceptable under any circumstances. Whilst the proponents were prepared for some opposition, they expected to overcome this by their claim to authority and expertise, and their ‘education’ campaign.

CSIRO had long enjoyed the support and confidence of primary producers and the public in general. In fact in 1968, Pierce cited public trust and confidence in
CSIRO as one of the reasons why CSIRO should assume control of the laboratory rather than the Department of Health. This supportive, or at least acquiescent public, together with the high level of autonomy bestowed upon CSIRO partly by virtue of its being a statutory authority rather than a government department and partly because of its scientific image, allowed the development of authority-based decision-making procedures, and an expectation of unquestioned acceptance on scientific and technical matters. However, several factors were working against them in this instance.

First, the discovery that the decision to import live FMD virus had been taken secretly and withheld from them, caused primary producers to regard CSIRO and the BAH with some distrust. Trust was further eroded when the proponents failed to acknowledge that the basis of the decision was called into question by the announcement of the advances in recombinant DNA techniques for vaccine production.

Second, was the failure of their initial campaign for reassuring primary producers of the safety of working with live FMD virus in AAHL. The assumption underlying this idea of an "education campaign" was that if all parties to the dispute were in possession of the "facts", they would reach the same conclusion, namely that the risk of escape was minimal. It was believed that farmers were opposed to importation because of irrational fears, and once these were dispelled by "scientific arguments", then they would agree. This rational, scientific view fails to recognise that risk assessment is not a neutral, objective activity, independent of perception and individual judgement, but involves uncertainty, interpretation and judgement. Risks have to be identified, the likelihood of their occurrence and their magnitude have to be estimated and the judgement of what constitutes an acceptable level of risk must be made. Factors which influence the perception of risk include considerations of whether the risk is borne voluntarily or involuntarily, whether there are alternatives, whether it involves a common hazard or a dread hazard,
whether the consequences are reversible or irreversible, whether exposure to the risk is a luxury or essential, whether the risk is known with certainty or unknown, and whether those taking the risk trust those who control the risk.  

Seen from the farmer’s perspective, their fears could hardly be called irrational. FMD disease was considered a dread hazard with serious consequences, and this could not be disputed since it was the basis for establishing the laboratory in the first place. Furthermore, this risk had been imposed upon farmers. The question of whether the risk was known with certainty or unknown depended to a large degree on trust. Since the laboratory was not even completed at this stage, security could not be proven, and as the ACPPF pointed out, 

... it is axiomatic in science that a negative point can never be proven. Obviously, microbiological testing may make the possibility of release of virus from ANAHL more unlikely but it cannot prove that it will never occur. 

Whilst farmers argued that escapes had occurred from other secure laboratories, the proponents claimed that the inadequacies responsible for these escapes had been taken into account in the design of ANAHL. The issue at stake here was not a scientific question however; it involved a judgement of what constituted an acceptable risk and whose judgement was to be trusted, and on these questions the two perspectives were irreconcilable.

It is not surprising then, that the debate moved quickly to a consideration of whether exposure to this risk was essential and whether there were alternatives. In this way political motives and questions of risk and trust were submerged by technical arguments about the need for the virus. Nelkin argues that “whatever political values motivate controversy, the debates usually focus on technical questions.” In this way issues are defined as ones requiring expert analysis, not social choice.

Despite considerable political resources and their acknowledged expertise, the
CSIRO and Bureau of Animal Health, were experiencing difficulty in convincing primary producers of the need for the virus. There were two reasons for this; the first was that their initial response to the opposition revealed conflicting and seemingly inconsistent claims which reduced their credibility. The original argument for the need to import live FMD virus claimed that live virus was necessary to manufacture vaccine. When this was disputed, one response was to argue that the new developments would make no difference, at least in the foreseeable future; the other response was to argue that even if the virus was not necessary to manufacture vaccine, live virus was still required to perform other essential functions. Whilst the first response appeared to contradict the proponents' private assessment of the new technology, the second response went against the earlier arguments and reassurances given to primary producers.

The second, and more important reason for their failure to convince primary producers of the need for the virus was, however, the challenge to their expertise by other scientists. Although scientists, such as Professor Morris had contributed to the debate from the beginning by identifying intentions and their implications, and by supporting primary producers' views on the risk involved in importing live FMD virus, they played a much more significant role once the debate focused on scientific and technical arguments concerned with the need for the virus. Nelkin argues that "when expertise becomes available to both sides of a controversy, it further polarises conflict by calling attention to areas of technical ambiguity and to the limited ability to predict and control risks."87

This detailed analysis of the early months of the controversy reveals the emergence of a number of issues which were to characterise the remainder of the debate. The proponents could no longer defend the decision to import live FMD virus by merely offering reassurances about the security of the laboratory, nor could they continue to ignore the increasing challenge to their expertise. The activities of the proponents over the next two years can be best understood as a
means of reasserting themselves against the increasing attacks on their authority. Credibility, trustworthiness and expertise.
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CHAPTER XVI

THE FORUM

Recognising that their efforts to gain primary producer support were not succeeding, the CSIRO Executive established an ANAHL Public Relations Committee (APRC) in November 1981, which developed a proposal for a campaign based on the question "Is it worth the risk?". The stated aim of this proposed campaign was "to convince primary producers it is in their best interests that ANAHL import for research purposes live exotic disease viruses in advance of an outbreak in Australia", and "to enlist public and political support for CSIRO's endeavours to safeguard the livestock growing industry - an important sector of the national economy."

It was argued that if the issue of importation of live virus was to be brought to a head, an "aggressive campaign" was necessary to "allow CSIRO to take the offensive in the ensuing debate, and to take the initiative in promoting the 'insurance' value of a fully operational ANAHL" as well as to "enhance CSIRO's public image as an integral component of the public-funded guardian force of the national well-being."

CSIRO planned to take this initiative, at a time when media interest in the live virus issue was flagging, by announcing that it sought to engender public debate on the issue. It was believed that this would result in editorial comments and requests for interviews. Back-up material would be prepared and "fed out through the Media Group's established rural and national media network at about one a week to keep the pot boiling". A TV featurette highlighting security measures of the laboratory would also be offered to selected TV outlets. If media coverage "looked like flagging a little", selected CSIRO/ANAHL people would visit key areas, address
public meetings and engage in TV and radio talk-back programmes. Overseas experts "would be offered for selective media exposure, depending on their ability to perform credibly on camera or radio"7 and their backing used in news statements.8 Reporters would also be brought to ANAHL for "on-the-spot briefings and inspections"9 to provide further publicity, and Ministers would be fully briefed and "prepared to bolster [the] campaign with statements in the Parliament."10

This first stage of the campaign was planned to last three or four months, and at the end of this time it was expected that "opposition views will have become clearer and we will have an idea of exactly what and how powerful is organised opposition to the idea."11 After having assessed the situation, preparation "to do battle again if necessary, at a time closer to the microbiological security testing of ANAHL could then be undertaken."12 This proposed campaign highlights the considerable resources, both financial and organisational, available to the CSIRO. The planned TV featurette alone was estimated to cost $10,000.

The ANAHL Public Relations Committee proposal was presented to the CSIRO Executive in December 1981. During discussion Mr. Wright pointed out that "the first and major issue" was to get the "NFF on side",13 and in order to accomplish this NFF Executive support should be sought first before concentrating on "grass roots" approval.14 He was also concerned about the emphasis on risk in the theme of the campaign, "is it worth the risk?" and further argued that CSIRO "should not gear up for a battle [it] cannot win".15 The CSIRO Executive concluded that the public education campaign should be held in abeyance pending a meeting with the NFF Executive.

The Chairman of CSIRO contacted the President of the NFF, Mr. Davidson, to encourage a meeting between the NFF Executive and CSIRO. Davidson advised the Chairman that while "he was personally supportive of the CSIRO approach"16, there was a need "to convince the NFF Commodity Councils (i.e. CCA, Wool Council, Sheep and Meat Council and the Australian Dairy Farmers Federation)"17, since "the
NFF does not initiate policy but rather develops its policies on the basis of advice from its member Commodity Councils." Davidson further suggested that CSIRO should be seeking an "in principle" agreement to enable planning to go ahead, since "the NFF would probably be reluctant to make a specific commitment." Once it became clear to CSIRO that the issue was to be resolved by the Commodity Councils rather than the NFF Executive, it was decided that "consultation between them [i.e. the Commodity Councils] and CSIRO will need to be stepped up to ensure that the CSIRO message is fully comprehended." However, in February 1982, Dr. Ferguson reported to the CSIRO Executive that it was "anticipated that the CCA and other bodies would not be prepared to budge on the FMD import issue," "in spite of CSIRO's efforts." Furthermore, it was recognised that CSIRO's efforts "may well be entering the counter-productive phase." Following this evaluation of the situation, four options were presented to the February 1982 CSIRO Executive meeting for consideration. These were:

1. Maintain CSIRO's present policy and actively implement the public education campaign.

2. Maintain CSIRO's present policy but adopt a passive stance. There are three options here:

   (a) facilitate a national debate on the 'issue' by clearly stating the benefits/risks which flow from having live exotic disease agents at ANAHL but contrive to have the debate settled between the Government and the NFF and its member bodies.

   (b) remain silent on the 'issue' and do not seek resolution of it until ANAHL has been shown to be competent to deal with endemic viruses. That is, seek access to live exotic disease agents only after the various animal industries have come to accept ANAHL. Here CSIRO would seek to win the 'issue' by default.

   (c) seek to work on endemic and exotic viruses other than FMD.

The fourth option was the least favoured, first, because it "would raise the spectre that ANAHL may never have access to FMD," however, it was admitted that "access to these other exotic viruses would enable the research programs at ANAHL
to be initiated and its role to be largely fulfilled."\textsuperscript{26} The second objection to working with viruses other than FMD was that "without all the exotic disease agents there can be no complete disease diagnosis and vaccine testing/production capacity ....nor research to improve these two functions"\textsuperscript{27}, and in that case "it would be more appropriate for some other body to run ANAHL i.e.the Bureau of Animal Health."\textsuperscript{28}

It was shown in the previous chapter that this argument, that CSIRO would have no role to play in the laboratory without access to live FMD virus, was in conflict with earlier statements about the role of CSIRO and the functions of the laboratory, and indeed it conflicted with the statement above, that the research role would be "largely fulfilled" with access to other viruses. The reason for adopting this seemingly illogical stance was made quite clear, however, in this paper to the Executive. It stated: "Producers are believed to be reluctant to have BAH involved as they can see a parallel with export meat inspection i.e. they would have to pay for a significant portion of ANAHL's operating costs."\textsuperscript{29} Thus CSIRO reasoned that primary producers would be prepared to accept the importation of live FMD virus if it meant CSIRO, rather than the Bureau of Animal Health, would operate the laboratory.

The third objection to option four was that it...

...carries with it the presumption that producer interests are such that they should sit in judgement on the need for each and every exotic disease agent considered for ANAHL. If this occurred the situation would be intolerable, particularly for man and program management at ANAHL.\textsuperscript{30}

This clearly demonstrates the value CSIRO placed on retaining its autonomy and hegemony in the field of science.

It was further argued that option 2(b) "would mean that ANAHL would be delayed in providing its anticipated input to national disease eradication campaigns/preparedness and its support to the operation of the Cocos Island..."
Quarantine Station" and also that it "begs the question of why use ANAHL to research viruses which are already endemic to Australia and therefore do not require a maximum security facility for their manipulation."

The CSIRO Executive agreed that CSIRO should facilitate a national debate, but noted that:

... as the decision to import live FMD virus had already been made by the Australian Agricultural Council and the Government, the Organization was expected to introduce the virus as soon as the microbiological security of ANAHL had been proven.

This would suggest that CSIRO intended to import FMD virus regardless of the arguments put forward and the opposition expressed, and that the 'consultation with industry' proviso was merely a placatory device.

A rural newsletter stated: "producers should not doubt that, as things stand, virus importation is firm policy. The Government view is that the $121m laboratory at Geelong would be a 'white elephant' without the virus research program." And a joint announcement by the Ministers for Health, Primary Industry and Science stated that, "it is essential that the laboratory has experience in working with live exotic viruses." CSIRO refused to recognise a legitimate opposition with which to negotiate. Despite the rhetoric of scientific debate, CSIRO was engaged in a campaign of propaganda and public relations which allowed objectors to give vent to their views without allowing them to impact on the already established and endorsed decision to import live virus.

Although CSIRO had decided to take no media action at this time, they were forced into making public statements and into reconsidering their strategy.

*Originally the research function was limited to research on endemic viral diseases; later it was expanded to include research on exotic viruses as well. In the CSIRO submission to the PWC it was stated that for work to proceed on some endemic diseases, "it was necessary that it be carried out in maximum security facilities so that local human and animal populations are not endangered". [PWC, Animal Health Laboratory, Minutes of Evidence, Sept. 1974, p.28.]
following a series of articles and an editorial in the press in March 1982. In this editorial, doubts were cast upon the need for the laboratory and the need for live virus, and it asked "why this matter was not resolved much earlier". Furthermore, it called into question the wisdom of the scientist-bureaucrats who devise plans and projects, pointing to some past projects of the CSIRO of questionable merit.

CSIRO responded to what it considered a "media attack" with a news release from the Chairman, Dr. Wild, and letters to the Sydney Morning Herald from both Wild and Ferguson. However, apart from these replies, they attempted to maintain their "passive stance". The reason for this was the forthcoming annual general meetings of the various Commodity Councils and other primary industry groups. CSIRO had been discussing the live virus issue with these groups and providing them with information to "facilitate the debate". Although concerned that these efforts were not reaching the rank and file membership, CSIRO decided against launching a public education campaign at this stage in case the Executive of these organisations interpreted it as an attempt to bypass them. However, they also recognised that if the executive of these farmer organisations decided against importation, "CSIRO [would] be hard pressed to have the decision reversed".

It is interesting to examine here CSIRO's notion of a "passive stance". It had been agreed by the CSIRO Executive that CSIRO "should continue to discuss the topic with the NFF Commodity Councils and should more positively express the issues involved" and that "CSIRO's advocacy of the need for import should be even handed and low key in contrast to its defense of the need for and construction of ANAHL". As well as this, officers of CSIRO were made available to discuss the issue and make presentations at the annual general meetings of the various producers groups, and representatives from these groups were repeatedly invited to visit ANAHL. This would suggest that CSIRO was adopting a passive stance only in the sense that it was not overtly engaged in a campaign to convince farmers at the grass roots level of the need for live virus.
Furthermore, another avenue explored by the Executive was the possibility of initiating a Parliamentary inquiry into the issue. Two Parliamentary committees, the Parliamentary Standing Committee on Public Works (PWC) and the Senate Standing Committee on National Resources (SSCNR), were identified as "being well placed to review the live virus import issue". In 1979, the SSCNR had reported to the Parliament on the Adequacy of Quarantine and other control measures to protect Australia's pastoral industries from the introduction and spread of exotic livestock and plant diseases, and recommended that "CSIRO should have responsibility for all aspects of the operation of the laboratory" and that "the project should receive high priority". In 1981 the Chairman of the PWC informally requested that "CSIRO take positive steps to counter the criticism being levelled at ANAHL in respect of the live virus issue." Thus, both were seen as sympathetic to CSIRO's view, and it was argued that:

... while the SSCNR would be more easily approached - Senator Andrew Thomas is its Chairman - the PWC carries greater weight in the Parliament and there would thus be advantage in it conducting such an inquiry.

The advantage seen in holding a Parliamentary inquiry was in

... partly removing decisions about 'the issue' from the realm of ministerial prerogative - it is highly unlikely that two NCP Ministers in an election year or in the run up to an election year would on their own account tell primary producers that import of live virus would occur in spite of producer objections. Such a decision by the government would be preferably based on the outcome of a public inquiry to which primary producers (and others) had access. The Government would also then have in its control the timing and nature of its response to the inquiry's findings.

Furthermore, "the inquiry would be seen to be independent of CSIRO." It was suggested that the "Chairman of CSIRO should speak to both Chairmen and sound them out", but that the "request for a Parliamentary inquiry should preferably come from the Prime Minister on the advice of the Ministers for
Primary Industry, Health and Science and Technology.\textsuperscript{50}

This clearly demonstrates the considerable advantages available to CSIRO, and indeed the government itself, in public controversies. CSIRO's power stemmed from its formal authority and responsibility, its expertise and control over information which enabled it to define problems and their solutions and the context of the debate, and from its ability to influence other institutions, individuals, Ministers and Cabinet. The function of this Parliamentary inquiry would have been to divert public criticism from CSIRO and to depoliticise the issue, projecting instead an image of a neutral, rational examination of the issue. These discussions give further evidence that, rather than adopting a passive stance, CSIRO was actively engaged in attempting to resolve the issue to its advantage.

The statements issued by Wild and Ferguson in response to the press articles and editorial stimulated further discussion in the media as more actors, especially scientists, joined the public debate once it became clear that CSIRO was doggedly adhering to the policy of importation of live virus. Up until this time CSIRO had depicted the opposition, apart from the farmers themselves, as coming from a single source, Professor Morris, whose criticisms had started the public debate. However, in a letter to the \textit{Sydney Morning Herald} in March 1982, Mr. Robb, Executive Director of the Cattle Council of Australia stated:

\begin{quote}
I take issue with Dr. Wild, the Chairman of CSIRO, who says... that opposition from scientific circles comes from a single voice... In fact scientific opinion is heavily divided on the issue, both locally and internationally. While researching this issue on behalf of beef producers, I have identified many scientists who strongly oppose the introduction of FMD. These scientists are employed in Commonwealth departments including CSIRO and the Bureau of Animal Health, State departments, universities and private organisations. Many are very senior in their organisation, again including the CSIRO.

Unfortunately it appears necessary for the contrary view to be publicly put by only one or two individuals because of the possible damaging career effects faced by organisational men not publicly supporting the party line.\textsuperscript{51}
\end{quote}
CSIRO and the Bureau of Animal Health had in fact been aware of scientific opposition to both the laboratory and the importation of FMD virus for some time. In May, 1981, Gee pointed out to the ANAHL Consultative Committee that "opposition to ANAHL had been around for a long time and that it has been taken into account at the highest decision-making level." In the past, "inside" opposition had been successfully stifled. As early as 1976, Dr. Lascelles, at that time Chief of the CSIRO Division of Animal Health, expressed serious reservations about the establishment of such a large and expensive laboratory. Whilst he agreed that Australia needed a facility "capable of providing the diagnostic back-up in the event of an outbreak of FMD", he argued "that the question of a vaccine capacity and the additional animal accommodation that goes with it need reappraisal in the light of new developments". He also claimed that the laboratory could not be justified in terms of the quarantine station, and that the research role of ANAHL was not a pressing one. Fearing that the high cost of establishing and operating such a facility could jeopardize other areas of research, Lascelles put forward two alternatives. These were 1) to modify an existing CSIRO laboratory at Long Pocket so that it would be suitable for diagnosing exotic disease, or 2) to build at the Geelong site, "a much less elaborate facility, primarily for diagnostic purposes", operated by the Bureau of Animal Health, with the Animal Health Committee taking an overseeing role.

* The new developments referred to here were:

1. improved techniques resulting in vaccines of improved potency and shelf life which provided wider protection than previously thought possible. This reduced the need to use a vaccine identical to the outbreak strain.

2. proposals for an international vaccine bank were being discussed

3. since FMD vaccines were more effective than previously, the incidence of FMD was diminishing. Furthermore, international air travel was no longer increasing, nor was it likely to increase. These 2 factors suggested that the risk of FMD entering Australia, and therefore the need for a laboratory, was diminishing.
The hierarchical organisation of CSIRO at that time required that before a matter could be considered by the full Executive, it must go through the Executive member representing that particular division. Lascelles' Executive Member was Dr. Pierce, who was clearly unsupportive. Recognising this opposition and the fact that a reappraisal "could not be successfully carried through without Executive support", Lascelles "decided not to pursue the matter further at this stage. . . [since] there seems no point in creating unpleasantness without reasonable hope of achieving something positive." Thus, the institutional norms succeeded in quelling any "inside" opposition at that stage. However, following the discovery of the intention to import live FMD virus, further rumblings of dissent were heard within the bureaucracy, this time in the Bureau of Animal Health.

In May 1981, in an internal minute, three senior scientists from the Australian Bureau of Animal Health (ABAH), Drs. Shannon, Meischke and Cooper, recorded their "disquiet about the advice that sections of the ABAH are providing to governments and industries and other organisations outside the Bureau which may lead to the intentional introduction of exotic viruses." They stated that they were totally opposed to the importation of live FMD virus prior to an outbreak in Australia and that continuation of the present advice from the Bureau stressing the need to import live virus would destroy its credibility.

This caused considerable reaction within the Bureau, and the authors of this minute were accused of interfering in areas outside their responsibility, as well as being "emotional", "utopian", "simplistic", and "simply too late". They were also advised that their opinions "must be confined to within the ABAH audience". Public criticisms of the Bureau and the decision to import live virus from "inside" scientists were thus contained until April 1982, when Dr. Shannon and eight other scientists, acting as private citizens rather than members of institutions, refuted, in a letter to the press, Dr. Wild's claim that there was "overwhelming community
support for the laboratory and that opposition came "from a single voice". The involvement of more scientists and their conflicting viewpoints, and the increasing complexities of the debate, served to further confuse primary producers. At the Cattle Council of Australia general meeting held on 19 and 20 April, 1982, it was proposed that a "closed forum" be held to inform livestock producers of all the issues involved. All submissions and comments were to be in strict confidence to allow the parties involved to be "open and frank" without fear of damaging their career prospects or organisation's credibility. This proposal for a forum was endorsed by the NFF a week later at their general meeting and submitted to the Minister for Primary Industry.

CSIRO seized upon this opportunity and offered to collaborate with the NFF and CCA. It was proposed by the CSIRO ANAHL Policy Committee that "CSIRO should be involved in the organisation (but appear to take secondary role)" and that they should offer to pay the airfares of 50 industry representatives plus two overseas speakers. Negotiations occurred between CSIRO and the NFF and CCA Executive and it was decided to hold the forum at Geelong in August 1982, with Mr. Davidson (NFF President) as Chairman. Davidson had already indicated to CSIRO his support on the live virus issue, and, following a visit to ANAHL, Mr Collin (CCA President) and Mr. McLachlan (Wool Council President) expressed their support. This support, described as a "major event" in a CSIRO Executive Paper, along with the key role CSIRO now played in organising and financing the forum, increased CSIRO's hopes of a resolution of the conflict in their favour.

CSIRO were under increasing pressure to obtain this resolution: not only was a review of the CSIRO Division of Animal Health, with specific reference to the importation of live virus, being undertaken at this time, but the controversy had come to the attention of the Balderstone Working Group who were preparing, at the request of the Minister for Primary Industry, a discussion paper on Agricultural Policy: Issues and Options for the 1980's. And in May 1982, the Australian Science
and Technology Council (ASTEC)* had also initiated an inquiry into the issue. These three groups were carefully awaiting the outcome of the Forum before making recommendations and the CSIRO Executive was waiting for all these reports before deciding its next action.

The rationale underlying the proposal to hold a forum was the belief that the current conflict was the result of confusion or error over facts. Collingridge has argued, however, that whilst the arguments in disputes are concerned with facts, the issues are usually normative. He claimed that:

... what each side tries to do is to find an interpretation of the agreed data that is scientifically respectable and which leads - when coupled with background values - to the desired result. The debate between parties over what should be done will, therefore, centre on which side offers the best interpretation of the data, and will not explicitly concern evaluative issues at all.

For Collingridge, this provides a rational and effective method of decision making, since "rival motivation ensures that the debate is carried out energetically and that the best case is made for each interpretation and that all suggested interpretations receive intense scrutiny."

However, Collingridge does recognise that unfairness can arise from a number of sources. The first, and most common source of bias in a public inquiry, is unequal funding where

... the proposer is often a large private or public body with its own research staff and able to buy expert opinion from outside as well, while

*ASTEC was established as a statutory authority in 1979. It is the Government's principal source of independent advice on science and technology. In addition to providing advice to the Government on major new proposals involving science and technology, the Council prepares reports in response to specific requests by the Government, or the Prime Minister, and of its own volition. It also provides comments at the request of the Government on reports prepared by specialist groups.

the objectors may be individuals or small protest groups hastily thrown together and having no research skills or money to buy opinions.\textsuperscript{75}

A second factor is the domination of research by a few experts so that "rival interpretations are never explored"\textsuperscript{76} and a third is administrative rules, "which impose secrecy or which place certain key factual claims in the debate beyond argument."\textsuperscript{77} In these cases, the decision taken depends not on the quality of the arguments, but on the "relative strength, power and pocket of the partisans."\textsuperscript{78}

CSIRO took full advantage of this inequality: the fact that they were financing the forum gave them considerable influence over the organisation of the proceedings. It was CSIRO who nominated and invited the two overseas expert speakers, Dr. Callis from Plum Is, USA, and Sir William Henderson from U.K. After strong pressure from the NFF, CSIRO agreed to pay the airfares of the opposition's nominated expert, Dr. Brown, but only after they had ascertained that his views would not pose a threat to their arguments. But more importantly, CSIRO held a considerable advantage in having access to information, skilled or influential individuals and institutions, and in having an organisational infrastructure capable of planning and executing an effective strategy.

On August 5, 1982, CSIRO held a Forum Strategy Meeting and on August 19, a full day rehearsal for CSIRO speakers and participants was held "to ensure that the best possible 'pro' case is put at the NFF Forum."\textsuperscript{79} Matters discussed at the strategy meeting included how to "best use Callis, Brown, Henderson, Gee and Doyle",\textsuperscript{80} how to "contain Prof. Morris",\textsuperscript{81} and the "use of Ministers (PM and Nixon, Sinclair and Thomson) to put CSIRO's case in its run up to the Forum."\textsuperscript{82} Also, CSIRO had recently gained access to a copy of the "Urgent Case" submission from four primary producer organisations calling on the Government to commence construction of the laboratory following the Bluetongue scare in 1977. In this document reference was made to the laboratory working with live virus. It stated:
A number of these exotic diseases, in addition to the highly virulent foot-and-mouth disease, could be handled in the laboratory before outbreaks actually occur in Australia. This work would be aimed at the development of improved diagnostic reagents and tests in preparation for the time when rapid diagnoses were required.83

Only one of the four organisations involved, the Dairy Farmers' Federation, was still extant, but the present Cattle, Wool and Sheepmeat Councils of the NFF had their origins in the other three organisations. Although written five years earlier and its existence forgotten, and, as CSIRO recognised, clearly motivated by concern about the Bluetongue scare,84 its discovery was seen as another "major event".85 The document was recognised as having "political value",86 and the best way to use it, and the emphasis to be placed upon it, were discussed at the strategy meeting.87

CSIRO's planning for the Forum was extensive and detailed; it ranged from consideration of the general presentation of CSIRO's case, to specific charges against opponents, and it attempted to define the limits of the debate, rejecting certain issues. The argument that ANAHL would drain resources from other areas of research was to be defused and discounted.88 The arguments presented in the "Shannon/ Meischke/Cooper 8 page document referred to in the recent ABC TV program"89 were to be discounted as nothing new and concentrating on new technology.90 It was noted that Dr. Gibbs, who was speaking at the Forum for the opposition, "has 15 pathogenic exotic plant viruses at the ANU"91 Against the charge of lack of consultation with producers, CSIRO would argue that "no-one objected in 1974 and 4 producer groups put the case for live virus forcibly in 1977."92 In answer to the argument that CSIRO had changed its views since the 1974 submissions to the PWC, it would be claimed that these views were overruled by the PWC and Parliament."93 It was agreed that questions to CSIRO would be handled by Drs. Boardman, Ferguson, Parsonson and Mr. Snowdon.94 Furthermore, arrangements whereby individuals outside CSIRO asked questions to known supporters so their views would be on the record, were discussed.95 In contrast,
the opponents of live virus importation were a diverse collection of individuals coming from universities, industry and Government organisations, with far fewer resources and little organisation.

The Forum was held at Geelong on August 22 and 23, 1982. Those attending were provided with a set of Briefing Notes which were made up of papers by Dr. Callis, Sir William Henderson, Dr. Brown, Mr. Gee and Dr. Gibbs, as well as prepared answers, from both supporters and opponents of importation of live FMD virus, to 34 questions formulated by the NFF. The questions concerned security, exotic disease viruses, diagnosis, vaccine production and testing, research, training, recombinant DNA technology and general issues, and were to form the basis of discussion at the Forum.

The expectation of primary producers was made clear in a letter from the NFF President attached to the briefing notes. It stated: "This forum should provide the available information necessary for livestock producer organisations to make a decision before the end of this year." However, this hope, that a 'correct' decision would emerge once all the facts were established, was short-lived. In the first question period, one participant stated: "the depth and degree of division of scientific opinion which we can see in front of us is in itself a measure of the risk factor that is involved." Another primary producer representative stated: "we might as well forget all the academics, sit down as farmers and say, well is the risk worth it or is it not?"

The proceedings were opened by Mr. Nixon, who, after stating that he believed it was not proper for him to enter into arguments one way or the other, pointed out that "the Government is committed to ANAHL and believes that if the Laboratory ... is to carry out its function to the fullest extent, then it should have experience in working with live viruses." Nixon also made reference to the Urgent Case submission, pointing out that the primary producer organisations involved had stated that live FMD virus could be handled in the laboratory prior to
an outbreak. However, he claimed he was "not trying to rub anything in by raising this point ... [but] merely trying to set the record straight."¹⁰¹

The first day of the Forum was dominated by the proponents of importation of live FMD virus. Following Nixon's speech, were presentations by the proponents overseas experts, Dr. Callis and Sir William Henderson, as well as Mr. Gee, Dr. Ferguson and Dr. Parsonson, and three hours were taken up with an inspection of the laboratory and Dr. Snowdon's talk on "Microbiological Security at ANAHL". The three opposing speakers for that day were allowed a total presentation time of 30 minutes.

CSIRO adhered closely to its rehearsed strategy; reference to the Urgent Case was included not only in Nixon's speech, but in the Briefing Notes. Following Dr. Gibbs' presentation, Dr. Ferguson made reference to the 15 exotic plant viruses held by Dr. Gibbs at ANU.¹⁰² Ferguson also attempted to discount and discredit the resources issue stating:

Without exception I believe that scientists in Australia, many of them my colleagues and friends, who oppose the import of live exotic viruses into ANAHL are really opposed to the building and operation of the facility itself because they see it taking research funds away from them.¹⁰³

When Dr. Brandon, a senior university lecturer in veterinary science, objected to the implication that opposition was motivated by personal interest, Ferguson backed down, claiming:

I did not mean to imply that all those who were concerned with what I call the resources issue took that as their sole objection to ANAHL and the introduction of viruses. However, I have discussed this issue widely in CSIRO and I am yet to find an individual in the Organisation in whom the resources issue does not figure as one of the reasons for his objections.¹⁰⁴

Ferguson retreated even further over the question of the identity of the experts from whom CSIRO had sought advice. In his paper, Ferguson argued that if the claims of the opposition were true, that is, if diagnosis could be carried out
overseas or with inactivated reagents in Australia, if training could be done overseas or in Australia using audio visual aids, if vaccines would not be used in an outbreak, or, if they were, that they could be obtained overseas, and that all the research that needed doing could be done on endemic diseases, then "ANAHL as you see it today would not be required and CSIRO could be accused of either not seeking the best advice or ignoring the advice if it did." He went on to state that CSIRO had consulted widely on the exotic virus importation issue and that leading virologists experienced in the operation of maximum security laboratories shared CSIRO's view that live virus was essential. When Dr. Brandon asked for the names of these experts, particularly those consulted "in respect of the importation of foot-and-mouth disease and also the question of introducing new genetic stock in the form of live animals", Ferguson reduced his claim, stating that he was not aware of any opposition expressed by those qualified in the area. When Brandon pressed for these experts to be named Ferguson replied "I do not wish to name them."

Ferguson did, however, define what constituted expertise. He stated "I do not regard immunologists who are not primarily concerned with exotic viruses and who are not experienced in the operation of maximum security laboratories as experts." However, Professor Morris later pointed out that this definition disqualified Ferguson, "Gee, Doyle and members of the CSIRO Executive from any claim they may have to speak with professional accreditation on this issue", and Ferguson's refusal to name the experts whose advice CSIRO had sought significantly reduced his credibility.

It is interesting to note that two important issues were recognised quite early in the proceedings. The first was the realisation by primary producers that they were not going to get "a definite answer from the technologists" and that "no definite decision [was] going to be made from this meeting. It is going to be a matter of judgement." The second was the question of expertise.
The expectation that expert debate would produce consensus failed to recognise that conflict in science is natural and that authority is a social achievement.\textsuperscript{114} Dr. Brown pointed this out at the Forum, stating:

\begin{quote}
You seem to be quite concerned that we should all agree and I wonder why you think that scientists are different from anybody else. Why should we all agree about everything. We have opinions and we have a certain number of facts.\textsuperscript{115}
\end{quote}

However, when science is divided, the layman is thrown back on his own resources.\textsuperscript{116} And if he is unable to judge the science, then he is forced to judge the authority, credibility and trustworthiness of the spokesmen. Ezrahi argues that in disputes, "the public is presented more with a choice between competing claims to scientific authority than between competing scientific propositions."\textsuperscript{117} This means that "if the public cannot function as an arbitrator between contesting scientific positions, it can at least choose the 'doctors' whom it trusts".\textsuperscript{118} According to Ezrahi, this choice is partly based on "the outward signs which make scientists credible to the public"\textsuperscript{119} and partly on "what the public wants to hear".\textsuperscript{120}

Considerable advantage was held by the proponents because they represented official science, and because they "controlled most of the institutional apparatus and the other means through which the scientific community makes science visible to the lay public and applies the authority of science in public affairs."\textsuperscript{121} The resources available to them allowed them "to project in the public domain 'pictures of reality' which are most favourable to their respective interests and actions".\textsuperscript{122} The proponents enjoyed further advantages in that, first, the laboratory was already established, and second, the decision to import live FMD virus had been endorsed by the Government. Furthermore, whilst the supporters of importation attacked the expertise of the opposition, attempting to undermine and discredit their arguments by charging them as having political or personal
motives, thus exploiting "the public belief that scientific truths are absolute and conclusive", their own claims of authority rested heavily on the accumulated authority of the numerous inquiries and the endorsement of these decisions by the government. This served to depersonalise their involvement and to deflect attention from the question of their scientific expertise.

On the other hand, scientists opposed to the importation of live virus were expressing arguments that the majority of primary producers wanted to hear. And as Nelkin argues, "those opposing a decision need not muster equal evidence [since] it is sufficient to raise questions that will undermine the expertise" of the proponents. If one argument or piece of evidence can be shown to be false, or even questionable, or based on uncertainty or guesswork, this can lead to a more generalised loss of authority which in turn can lead to a questioning of further claims.

As discussed in the previous chapter, the authorities were already experiencing some credibility problems prior to the Forum. Although they planned to take a firm stand at the Forum, the persistence of the opposition forced them into conceding on a number of issues. The most important of these concerned the need for live FMD virus for diagnostic purposes. Following the announcement of the advances in genetically engineered FMD vaccines, the justification for importing live FMD virus focused on diagnosis and research. Primary producers were told that live FMD virus was needed for diagnosis, however, this position could not be maintained in the face of the scientific arguments put forward by the opposition. Eventually, all three overseas experts agreed that live virus was not essential. Dr. Brown stated:

In order to say this is foot-and-mouth disease or this is type 0, there is no problem at all with killed virus, absolutely none at all... However, if you want to go further and say where did this virus come from, then you need live virus.
Sir William Henderson stated: "Everyone who has had the scientific experience must agree that a diagnosis of foot-and-mouth can be made without using live virus" but added that having the virus would be an improvement. And Dr. Callis stated: "Yes, you can diagnose foot-and-mouth disease without live virus" but he added that staff may be handicapped without the full range of diagnostic tests.

Earlier arguments had led primary producers to believe that ANAHL would be unable to diagnose FMD without access to live virus, and therefore these statements represented an important change, and as a result, CSIRO suffered a further loss of credibility. The other arguments put forward by the proponents of importation also suffered severe setbacks. Opponents argued that since FMD was "a very generously researched area globally speaking" with "enormous resources" being employed, Australia could not afford, and did not need, to duplicate this research. Snowdon conceded that it was "not intended to carry out an intensive research program on FMD ... because significant research is currently being carried out in many overseas laboratories." When asked if the introduction of live virus could be justified specifically for research, Snowdon replied, "No, not specifically for research." In his concluding speech, Gee stated: "I agree with nearly everyone in that I think that its use in research is a very low priority."

Although the need for live virus for vaccine production had been widely discussed prior to the Forum, some points were further clarified there. Dr. Brown told the Forum:

You can always buy vaccine from commercial manufacturers. Any firm would sell their vaccine to you if you really needed it. Pirbright holds a stockpile on behalf of the Ministry, which is produced by Wellcome. Pirbright does not have its own facility for producing millions of doses.

Sir William Henderson distinguished between vaccination as a policy, and vaccination as an adjunct to slaughter, agreeing that "you would need to have a hole in your head to adopt a vaccination policy in Australia and I never suggested
that you should." In his summation, Sir Samuel Burston, a former NFF President and Chairman of the ASTEC Working Party on ANAHL, stated that "vaccine is not a really strong argument or certainly is not an argument on its own for live virus but along with other things could stand a place there." However, Dr. Boardman's comments virtually eliminated vaccine production as an issue. He stated:

The CSIRO Executive has made no decision as yet as to whether there will be a vaccine production facility at ANAHL. That decision will be made in the light of an assessment of current technology and therefore the statement that we needed the virus in order to produce vaccine is certainly incorrect.

Although not originally consulted about the need for, and desirability of, establishing an exotic diseases laboratory, the majority of primary producer organisations accepted the argument that the laboratory would be an advantage to the livestock industry. Scientists opposed to the importation of FMD also agreed that Australia needed a diagnostic facility, but argued that the vast expenditure on ANAHL was unwarranted. CSIRO attempted to portray this attitude as being motivated by self-interest. However, a team of American scientists visiting Australia in 1981 to examine animal health control programs, expressed similar concern. Their report stated:

Our only concern is that the national commitment to animal health protection may be greater than one relatively small nation can afford. When we look at the demands of the new facilities and programs soon to 'come on stream' we ask two questions. Can the new programs be operated from current budgetary commitments to animal health? Will new resources be made available which will be adequate for operation of the new facilities and programs? If neither of these questions can be adequately answered in the affirmative, we fear that some well established and highly productive programs at the older laboratories may be eliminated or curtailed. . . . It would appear to this team that the USA has not made nearly the commitment to animal health protection in either personnel or facilities as has Australia when the relative wealth of the two countries is compared.

This team also commented that:
... while most of the facilities at this laboratory [the Field Station, Maribyrnong] were not of the sophisticated, show type which are under construction at the new Australian National Animal Health Laboratory at Geelong, they appear to be practical and efficient, a characteristic of Australian research laboratories wherever we visited.\textsuperscript{140}

In their efforts to stress the need for live FMD virus, CSIRO inadvertently contributed to the fears that the laboratory could become a "white elephant". In a television interview in July 1982, Dr. Ferguson was asked "whether Australia's livestock industry would be really any worse off without live virus at Geelong."\textsuperscript{141} He replied: "I think it would. I think that the facility that we've built there would largely be unnecessary."\textsuperscript{142} When the interviewer asked if it would be a white elephant, Ferguson said he

\ldots wouldn't call it that, it would be used of course but it would be less effective, and you could say that a lot of the expense which had been incurred in providing a very high degree of security would have been unnecessary.\textsuperscript{143}

In the paper he presented to the Forum, Ferguson argued that "drawing the line at FMD \ldots would destroy the main value of having ANAHL at all".\textsuperscript{144}

This type of argument led the opponents of importation of live FMD virus to question the decision-making procedures which led to the establishment of the laboratory. However, the proponents turned this argument back on the opponents, claiming that they "should have spoken earlier".\textsuperscript{145} At the West Australian Liberal Party Conference in July 1982, the Prime Minister, Mr. Fraser was reported to have said: "I hope the laboratory is not going to be turned into a white elephant by a concern and a fear which if it is validly based, should have been voiced to us years ago."\textsuperscript{146}

Thus, primary producers, and other opponents of live virus importation, were now being blamed for not expressing their views earlier when, in fact, they had not been included in the decision-making process, and when they had been misled.
with reassurances that live FMD virus was not necessary to carry out the proposed functions.

The Forum ended in an atmosphere of frustration. In the concluding addresses, Professor Morris stated: "I have a great deal of sympathy for the producers who have come to this Forum believing that a clear statement would be made about the need to use live viruses for the diagnosis of exotic diseases."¹⁴⁷

Mr. Gee stated:

I guess the producers and many of us have been a little disappointed in this Forum - in the great ANAHL debate or however it was billed. It might better be entitled 'who shall decide when the doctors disagree' because that is about what it has got down to. I can imagine that the producers must feel frustrated and disappointed because I do not think they are going to go away with any clearer idea.¹⁴⁸

Although Gee, in a final effort, called for an "in principle decision" from the farmers, it was apparent to all that this was unlikely to be accepted.

The next stage of the controversy was foreshadowed in Gee's final speech:

Who will decide when the doctors disagree? Well I guess it will be the politicians who will finally decide what will happen at ANAHL. And that is probably the right sort of arena for that sort of decision to be finally made. A political decision in the broadest possible terms.¹⁴⁹

The proponents had hoped that the Forum would succeed in winning primary producer support. Yet, despite the considerable resources backing CSIRO and other proponents, their views did not prevail. In fact, it appeared that the Forum further undermined their authority and credibility. However, they were not prepared to compromise at this stage. For the farmers, the Forum was a disappointment since they had expected that the issue would be resolved once the 'facts' had been clearly established. Nevertheless, the Forum was a necessary prelude to the next stage of direct political intervention. If the proponents could not win, then at least they could demonstrate to the Government that they had made
every effort to consult with industry. When resolution of the conflict through public debate was shown to be impossible, the way was left open for the issue to be removed from the public arena and returned to the Government and the bureaucracy.
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Dr. G. C. Shelton, Dean, College of Veterinary Medicine, Texas A&M University, College Station, Texas.

Dr. R. Harris, Research Leader for Biological Control, Veterinary Toxicology and Entomology Laboratory, SEA AR, College Station, Texas.


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CHAPTER XVII

AUTHORITY LOST, AUTHORITY REGAINED

Before the Forum was held, the CSIRO Executive had identified three possible outcomes and had discussed strategies for each of these possibilities. The preferred option was, of course, that the NFF agree to access to all viruses including FMD. It was noted by the CSIRO Executive that Fraser, Nixon and Sinclair also preferred this option, and that "an early election (i.e. later this year) would enable a LP/NP [Liberal/National Party] government in its first electoral year to be forceful with livestock producers." A Labor government's view was unknown.

The second scenario was that the NFF agree to access to all viruses but with the proviso that live FMD virus was not introduced until after 1-2 years of safe manipulation of exotic viruses. The Executive agreed that whilst it "could live with" this option, it was "a fall back position too easily adopted by the NFF and its Commodity Councils as a means of saving face." Furthermore, it was portrayed as:

... a situation analogous to the merino embargo in the sense that once imposed, continued producer concern could lead to a situation where FMD import might not be resolved within a reasonable time, irrespective of any previous producer undertaking.

The third possibility, that no live FMD virus be imported prior to an outbreak, was considered "totally unacceptable," and possible Government responses to this situation, should it arise, were discussed by the CSIRO Executive. One suggestion was that "the Government could argue that if there is no virus import then the Government would not provide compensation to livestock producers in the event of an actual or suspected exotic disease outbreak." As well, it was suggested that "the Government could also threaten to have producers pay for the running costs of the
laboratory by way of an increased levy on stock slaughtered and wool produced."⁷

Recognising that these actions "would be extremely provocative to producers"⁸, a
more "moderate stance"⁹ was also put forward which argued that "as producers had
strongly pressed for the Laboratory to protect their interests then the Government
believes that such protection requires live viruses."¹⁰ Although CSIRO recognised
that the nature of any government intervention could be affected by the timing
and the outcome of the next Federal election, it was argued that "no Government
will allow ANAHL to be turned into a 'white elephant'."¹¹

The stance taken by CSIRO at the Forum was that if the NFF did not agree to
importation of live FMD virus, then CSIRO would go to the Government on the basis
of the laboratory not being operated as decided by the Parliament in 1974 and as
endorsed by the Prime Minister in 1980.¹² Although the Executive recognised that
the Government could insist on a compromise in order to defuse the controversy¹³
they were not prepared, at this stage, to publicly acknowledge that they would
accept anything less than access to all viruses. The reason given for this was that it
"could lead opponents of live virus introduction to the mistaken view that
concessions could be obtained from CSIRO by continued active opposition".¹⁴ Not
only was the possibility of a compromise position withheld from primary producers,
but until CSIRO had considered the outcome of NFF and ASTEC deliberations, it was to
be withheld from the Minister for Science and Technology and the Senate Standing
Committee on National Resources.¹⁵

In March 1982, the CSIRO Executive had considered making informal
approaches to the Chairman of the Senate Standing Committee on National
Resources and the Chairman of the Parliamentary Public Works Committee in
regard to a Parliamentary inquiry into the live virus issue.¹⁶ Six months later and
two weeks after the Forum, in September 1982, the matter was referred to the Senate
Standing Committee on National Resources (SSCNR) to investigate and report on:
1. The importation of live viruses into Australia for the purposes of:

   - research into exotic animal diseases,
   - identification of diseases,
   - development of skills and procedures for managing outbreaks of exotic diseases.

2. The role of the Australian National Animal Health Laboratory, Geelong, in research into both exotic and endemic live viruses.\(^\text{17}\)

At a CSIRO Executive meeting in November 1982, it was pointed out that the resolution of many of the outstanding issues regarding ANAHL were outside CSIRO's direct control\(^\text{18}\); the NFF and Commodity Councils deliberations, the ASTEC Working Party and the Senate Standing Committee on National Resources were cited as examples of this. It was also noted that an Academy of Science sponsored meeting to discuss diagnosis and control of exotic animal disease viruses was being planned for early 1983, and that the Australian Veterinary Association Standing Committee on National Affairs was also addressing the virus import issue.\(^\text{19}\)

The Balderstone Working Party had already presented its Report to the Minister for Primary Industry. Although the Working Party claimed that they did "not feel qualified to comment on the technical aspects of the counter-arguments" concerning the live virus issue, the Report stated that:

Although $145m has been invested in the construction of the laboratory to maximum security standards, this is not of itself a necessary justification for a decision in favour of importation of live viruses.\(^\text{20}\)

The Report concluded that: "Any decision to import live viruses for use at ANAHL should only be taken after a thorough evaluation of the benefits for Australian agriculture as against the possible costs."\(^\text{21}\)

An unexpected expression of interest in the issue came from the Australian Conservation Foundation (ACF). The Deputy Director, Mr. Hill, asked Mr. McVeigh*.

* Mr McVeigh was a member of the Public Works Committee which examined the laboratory proposal in 1974
the Minister for Home Affairs and Environment, if any action had been taken, or proposed, to ensure environmental protection, in view of the proposal to import live FMD virus prior to an outbreak. Mr Hill drew attention to the original Environmental Impact Statement of 1973 where it was stated repeatedly that FMD virus would not be worked on prior to an outbreak. He asked that environmental aspects be reviewed if there was a firm proposal to introduce the virus into the laboratory. CSIRO and the Bureau of Animal Health acted quickly, arguing privately that "we can do without ACF in the picture as antagonists". Discussions with the ACF, aimed at "turn[ing] them around" were held, and they were apparently satisfied.

Following the Forum, the Bureau of Animal Health produced a booklet, entitled "ANAHL and Exotic Disease Control", for distribution to the NFF and its Commodity Councils, State Departments of Agriculture and all veterinarians in Australia. This was tabled by the Minister for Primary Industry in the House of Representatives on October 20, 1982, and in the Senate the following day. Despite the official sanction this implied, Senator Martin pointed out to the Senate that "the report is, in effect, a special plea by ANAHL for the opportunity to introduce into Australia a virus associated with certain exotic diseases."

Senator Martin went on to state:

It is clear from the letter to the Minister from Mr Gee that there was a request for this report to be written. It has been very valuable to have ANAHL write a report to the minister and publicly state its view on the issue. However, I would not like the report to be seen as having the status of the final expert document on the subject and the only recommendation that could be made to the Government on it. We have to treat it as only one point of view and we have to realise that it is written by those who have sought from the Government the opportunity to import the virus for experimentation, research and training.

I would not seek to denigrate the scientists who hold the point of view expressed in the report. I just have to say, as someone who is certainly not a scientist, that I am a little wary of scientists being advisers as well as being arbiters on a matter of such public moment as this.
Meanwhile, the primary producer organisations were continuing their deliberations on the live virus issue. At its Annual Conference in October 1982, the Cattle Council of Australia (CCA) passed a resolution "that the CCA oppose the introduction of live foot and mouth disease virus prior to an outbreak". This position had been foreseen as a possibility by CSIRO, and the current activities of the proponents, to remove the issue from the public arena and return it to the bureaucracy, could be seen as a means of circumventing this opposition. However, the public controversy with its questioning of authority and expertise, along with the considerations of risk and trust, resulted in an unforeseen and unintended consequence. The second resolution passed by the CCA stated:

That prior to an outbreak, no other exotic disease agents be imported without the approval of the commodity councils representing the particular livestock producers concerned and the commodity councils will consult only:

a. after a satisfactory standard of security has been proven in ANAHL;

b. with the Federal Government firmly committed to adequate compensation measures and contingency plans in the event of an outbreak;

c. with the transport of any specimen to and from the facility under maximum security;

d. when all exotic animal disease viruses being presently held in Australia are transferred to ANAHL following security being proven;

e. after CSIRO transfer as much of its endemic viral research as possible to ANAHL during the testing period;

f. after approval of a discipline in dealing with exotic animal disease outbreak that will stand fast under a disease eradication programme;

g. after the introduction of increased minimum and maximum penalties for breaches of quarantine regulations;

h. if proposed imports of exotic animal disease live virus can be dealt with on a case by case basis. 

FMD had always been treated as a special case, distinct from other viruses. It had always been considered that FMD virus was the most infectious of the exotic
viruses, thereby requiring special containment precautions, and the most important in terms of the economic consequences of an outbreak. Other viruses posed less of a threat, and their use at ANAHL, although undefined, had been largely unquestioned. These new requirements from the CCA indicated a growing demand for involvement in decision making, and CSIRO feared that if these provisos were agreed to by the Government, it would "lead to the virtual 'moth balling' of ANAHL."  

A report on the outcome of primary producer organisation deliberations was presented to the Animal Health Committee meeting in April 1983. The views of these groups were overwhelmingly opposed to the introduction of live FMD virus prior to an outbreak. In answer to the question "Do you consider the whole range of live viruses should be in use in ANAHL prior to a disease outbreak?" only 2 organisations agreed. These were the United Farmers and Stockowners of South Australia (UFS of SA) and the Australian Dairy Farmers' Federation (ADFF), however it was noted that "at least one State dairying organisation does not agree with the position of the ADFF."  

Significantly, in view of the CCA resolutions, the viruses nominated for exclusion extended beyond FMD and included African Swine Fever, Rinderpest, Newcastle disease and any exotic poultry disease.

The proponents of the laboratory and importation of live FMD virus continued their contact with primary industry groups. Visits to ANAHL by representatives of rural organisations for detailed inspections and discussions were held each week, and had been programmed up until the end of June 1983. However, "consultation" still meant trying to win primary producer support. At this stage the proponents appeared unwilling to compromise or take account of industry views on the future operation of the laboratory.

In February 1982, it was agreed by the CSIRO Executive that the terms of reference for the review of the Division of Animal Health should be extended to include consideration of the live virus issue and the operation and functions of
ANAHL. Although the Review Committee, under the chairmanship of Dr. Ferguson, did not finalise its report until November 1982, a preview was presented to the CSIRO Executive for discussion in September 1982. Dr. Ferguson informed the Executive that "the Committee has concluded that it would be acceptable to work at ANAHL with live viruses, including foot-and-mouth disease virus, for diagnosis, training, vaccine production and testing, and research." The Review Committee also put forward a timetable for introducing live viruses into the laboratory. At this stage, completion of the building was scheduled for March 1983, and the Review Committee recommended that after a commissioning period of one year to establish microbiological security, clearance would be sought to introduce "a range of viruses other than FMDV". By late 1984 training in the diagnosis of the most important diseases caused by these viruses would begin, along with diagnosis of FMD using inactivated virus and inactivated reagents, and research on Bluetongue virus. Approval to import FMD would be sought in mid 1985 and training in diagnosis using a strain of relatively low infectivity would be undertaken late in 1985. In 1986 a decision on vaccine production would be made, and if indicated, vaccine production for stockpiling would commence.

At about the same time, the Animal Health Committee discussed the timing for introduction of exotic viruses into ANAHL. Their programme was similar to that of the Review Committee, although "some concern was expressed that the proposed time frame should be extended to a slower rate of intake." It was also noted that since other bodies such as ASTEC, the ANAHL Consultative Committee and the ANAHL Security Assessment Group still had to report on the matter, it would be inappropriate for AHC to make a firm decision and statement for report to the Standing Committee on Agriculture at this stage.

Efforts to directly influence primary producers to gain their support appeared to have receded into the background, and resolution of the issue was increasingly seen, by the proponents, as a function of the various inquiries which had been
initiated. It was observed by a member of AHC that "until there is agreement by scientists, industry groups can be expected to maintain a conservative opinion". Recognising this to be so, the proponents' efforts were now directed toward having their views prevail in the recommendations of the committees investigating the issue. Although the Review Committee was not an independent review, since it was chaired by Dr. Ferguson and included in its membership Mr. Wright also a CSIRO Executive member, and Sir William Henderson, who had spoken in favour of importation at the Forum, its recommendations were used to provide additional support to the proponents' stance. The support of the ANAHL Consultative Committee and the somewhat more reluctant support of AHC provided a basis for taking the issue through the consultative mechanism to the AAC again. As with the original decision and approval to import live FMD virus, consensus was being manufactured by excluding opposition and referring the decision to committees claiming objectivity and a higher authority. Concern about the opposition of primary producers now focused on whether opponents could "effectively interfere with the importation of exotic disease viruses or their use at ANAHL by seeking injunctions etc". and CSIRO sought legal advice on this.

The ASTEC Working Party, which was appointed in April 1982, resumed its inquiry into ANAHL after the Forum. A draft report was submitted to ASTEC on November 9th, 1982. However, prior to this date, a copy was sent to Mr. Gee asking if he had any comments on the report or its recommendations, and suggesting that if there were matters he would like to have raised, he should brief the Primary Industry Department's representative who normally attended ASTEC meetings. Gee discussed the draft report with Ferguson of CSIRO and noted that it "looks a quite reasonable technical and political approach", and that the "DPI should be able to support the recommendations." The draft report was also sent to the Prime Minister, and subsequently sent back to ASTEC for reconsideration, following representations from CSIRO.
The final ASTEC Report stated that "Australia needs a microbiologically secure animal disease laboratory" that its main role should be diagnosis of exotic diseases and, associated with this, "research into exotic pathogens with the overall objective of increasing Australia's ability for their prompt detection, identification and eradication." However, it was argued that the laboratory's role in veterinary training and production and testing of vaccines was "less clear-cut." The Committee did not accept the argument that ANAHL should import live FMD virus to produce and test vaccine, stating:

On present evidence, it seems unlikely that vaccination would be used in Australia to control the disease, save under the most exceptional circumstances; the Council is not convinced by arguments in favour of the so-called 'ring vaccination' technique. Even if vaccination were contemplated, it has not been demonstrated that adequate supplies could not be obtained, or made under contract, overseas and to standards of potency and safety acceptable to Australian authorities.

It was also argued that the additional risks involved in deliberately infecting livestock with live FMD virus for the purpose of training was unwarranted, and that the "cost of sending Australians overseas to gain experience in recognition, laboratory manipulation or control of FMD or, if need be, of paying for the use of overseas facilities, is minor compared with the benefits of this course of action."

The Report also stated that there was a "clear need for an agreed procedure to ensure that full consultation takes place between CSIRO and Commonwealth and State authorities, producer organisations and other interested parties". ASTEC noted that the procedures developed by CSIRO for consultation, whereby application is made by CSIRO to the ANAHL Consultative Committee, and, if approved, submitted to the Animal Health Committee for consideration, and thence to SCA and eventually Australian Agricultural Council, ensured "adequate consultation with government authorities". However, it recommended that the ANAHL Consultative Committee provide formal notice of proposed importations to the NFF, the Australian
Veterinary Association and other interested parties, and that the comments and advice received from them be transmitted to the Minister for Health as well as the CSIRO Executive. CSIRO would be required to prepare a case for each proposed importation specifying the anticipated benefits and potential risks and costs.

Although FMD was considered separately, ASTEC did not differentiate between other exotic viruses. It was not proposed that ANAHL work up through the viruses starting with the least dangerous, as had been suggested by primary producer organisations, but instead, ASTEC recommended that those viruses considered to be of high priority be nominated as soon as practical. ASTEC listed Bluetongue, Newcastle Disease, Rabies, Swine Vesicular Disease, Vesicular Exanthema and Vesicular Stomatitis viruses as having potential priority. Live FMD virus was not to be imported "for a period of 5 years, that is until the end of 1987."

The arguments put forward by the proponents of importation, that live FMD virus was required for accurate diagnosis, for routine testing of diagnostic reagents, and for the research and development of new diagnostic tests, were accepted by ASTEC. However, instead of seeing these arguments as a justification for early importation of live FMD virus, ASTEC recommended the establishment of a research group at an overseas laboratory such as Pirbright, Plum Island or the FMD Vaccine Production Centre in Thailand where the research programme could contribute to the host institution. ASTEC considered that "the potential benefits of this arrangement will more than outweigh the modest additional expenditure by Australia."

Whilst the ASTEC Report may have appeared somewhat critical of the advice given to Government by CSIRO, especially in regard to the vaccination and training functions of the laboratory and the consultation procedures established, in fact the Report was closer to the CSIRO position than was generally realised at the time. As discussed at the beginning of this chapter, the CSIRO Executive had privately agreed that they could accept a compromise decision, where ANAHL was granted...
access to all exotic viruses, except FMD, following the establishment of 
microbiological security, with access to FMD granted one to two years after 
demonstrating safe manipulation of exotic viruses. Completion of ANAHL was 
expected, at this stage, at the end of 1983, with microbiological testing completed at 
the end of 1984. Therefore, CSIRO's timetable allowing for introduction of live FMD 
virus somewhere between late 1985 and late 1986, was not very far from ASTECs 
recommended late 1987. And any delays in completion or testing would bring 
CSIRO's target even closer to the ASTEC date.

The elimination of the training and vaccine production functions were not 
critical to CSIRO's role at ANAHL; CSIRO had always found it difficult to justify its 
position in relation to these activities. On the other hand, ASTEC had strongly 
supported the research role of ANAHL, and in recommending that research using 
live FMD virus be undertaken overseas, indicated an acceptance of CSIRO's 
arguments of the need for this research.

The ASTEC Report was presented to the Acting Prime Minister, Mr Anthony, in 
December 1982 and was forwarded to the Minister for Science and Technology on 
February 1st, 1983, with the request that the Minister for Science and Technology 
in consultation with the Ministers for Health and Primary Industry prepare a 
response to the report, to be available when the report was tabled in Parliament. 
However, a change of Government following the Federal election in March 1983 
delayed both the tabling of the report and the response.

The Senate Standing Committee on National Resources was also affected by the 
change in Government. This inquiry was originally delayed because of an urgent 
reference on plant variety rights, and its investigations were not completed before 
the Federal election. The new Government was left to consider whether or not this 
inquiry should be resumed. In its advice to the Minister, CSIRO pointed out that "a 
resumed inquiry would not be expected to complete its deliberations and report 
before the end of this year" (i.e. 1983).57 This would mean that a response from
Government may not be available until the 1984 Autumn session of Parliament. CSIRO argued that:

... it [did] not believe that a resumed Senate Committee inquiry would materially add to the live virus import debate. However, CSIRO would see merit in such an inquiry because it would be perceived by primary producers and other concerned groups and individuals as being confirmation of the Government's concern to ensure that the issue was debated fully and openly - such a perception may not necessarily be attached to the ASTEC review by those opposed to live virus import, particularly FMDV.58

The Senate inquiry was not resumed, however, "because the ASTEC report covered the issues contained in the Committee's Terms of Reference and ASTEC consulted the same people from whom the Committee would be seeking advice."59

In 1982, an ad hoc committee was appointed by the Australian Academy of Science (AAS):

... to examine from a microbiological viewpoint:

The importation of live viruses into Australia for the purposes of:

(a) research into exotic human and animal diseases

(b) identification of diseases caused by such exotic viruses.60

The Report was to be submitted to the Senate Committee Inquiry. However, when that inquiry was abandoned, the Academy presented its Report to the Government in May 1983. Unlike the ASTEC Report, the Academy did not invite submissions from industry or from the organisations responsible for ANAHL, but contacted individual scientists, both local and international. Although the respondents included both well known proponents such as Dr. Ferguson and Mr. Snowdon, and opponents such as Professor Morris and Dr. Gibbs, the majority were university scientists who had not been publicly aligned to either side of the debate.

The AAS Report concluded that while ANAHL offered excellent containment
facilities, this did not provide sufficient grounds for importation of live FMD virus. The Report stated that there was no necessity for live virus for undertaking an initial diagnosis, but agreed there was a case for importation after an outbreak had occurred, providing the operational safety of ANAHL had been satisfactorily established. The Academy did not support the arguments that live virus was required for training, and, like the ASTEC Report, recommended that training be undertaken overseas. Nor did it support the need for live virus for the purpose of producing vaccines in advance of an outbreak. Furthermore, whilst it was recognised that live FMD virus may be necessary for testing animals passing through the Cocos Island quarantine station, the Report concluded that this testing could be adequately performed at overseas laboratories.

On the question of research, the Report stated: "We do not support the establishment of a basic research programme involving FMDV at ANAHL in advance of an outbreak". Two major considerations led to this conclusion; the first was that there were distinct advantages in undertaking this research in well-established overseas groups. The second consideration was that there were no "particular advantages which make FMDV an ideal virus for basic studies of virulence and infectivity." With regard to other exotic viruses, the Report concluded that they should be imported "only after a detailed scrutiny of the work that is proposed and the scientific and other reasons for carrying it out." The Report also noted the mechanisms for making decisions regarding importation of viruses, as well as the comments of some respondents, that non-scientific members should be included in these review groups. However, the Report stated that although "such a decision would be in keeping with the current social expectations ... [it] required a political rather than a scientific decision."

CSIRO was now the only major scientific body advising the Government, still in favour of FMD importation. The new Minister for Science and Technology, Mr Barry Jones, attended the April 1983 CSIRO Executive meeting where Mr Wright of
the CSIRO Executive stated that he "firmly supported the Executive policy for the importation of exotic live disease viruses, particularly FMD to ANAHL to enable the conduct of appropriate research"\textsuperscript{71} and that "if no exotic disease viruses were imported for use at ANAHL then there was no research which could be conducted usefully at the facility."\textsuperscript{72} Dr. Boardman argued that CSIRO’s proposal was "more practical" that that of the ASTEC Report.\textsuperscript{73}

Although the change of Government meant that the proponents no longer had the support of Fraser, Nixon and Sinclair at Cabinet level, CSIRO still enjoyed considerable advantage by virtue of their ready access to Ministers and their ongoing role in providing advice to the Government. ASTEC and the AAS could express their findings in their reports, however, the Government turned to CSIRO to assist in developing a response to these reports.

At the May 1983 CSIRO Executive meeting, the Government’s proposal to convene an Interdepartmental Committee to develop a response to the ASTEC Report was discussed, and it was agreed that:

\[\text{... in spite of its lack of expertise in animal health matters, there is merit in the Department of Science and Technology convening the IDC to initiate the development of the Government’s response to the ASTEC Report. Should CSIRO convene the IDC, it could lead to the charge that the Organisation may have exercised undue influence in the development of the response.}^74\]

CSIRO prepared a brief for Jones for his meeting with the Ministers for Health and Primary Industry, in which it was again emphasized that CSIRO believed importation of live exotic viruses was essential for diagnosis, training, research and vaccine production and testing.\textsuperscript{75} As a concession to "concern in the community about importation of FMDV"\textsuperscript{76}, CSIRO agreed that approval to import live FMDV "should not be sought until at least a year after the microbiological security of ANAHL has been established"\textsuperscript{77}, although it was stated that there was no "scientific justification" for ASTEC’s proposition that consideration of FMDV should await three
years operation of the laboratory.78

CSIRO also argued that approval for a "basic minimum package" of exotic viruses was essential for ANAHL to become operational.79 Without this approval, it was argued that CSIRO would not be able to conduct research and "thus give primary producers the best possible insurance against the effects of an exotic disease outbreak",80 and that "a lesser access would raise the question of whether the Laboratory should be opened as a research facility and whether the Organisation should have responsibility for it".81 These same arguments justifying the need for a minimum package had previously been used to justify the importation of FMD. Furthermore, CSIRO involvement was originally justified on the basis of the proposed research function; now the arguments were used in reverse to justify research because CSIRO was to be responsible for it.

The ASTEC and AAS recommendations, that a case should be prepared for each proposed importation, and that comments from all interested parties should be considered before approval was granted, recognised, and in a sense legitimated, the more recent objections to importation of exotic viruses other than FMD. The concept of a guaranteed minimum package was apparently developed as a means of overcoming what CSIRO saw as a loss of its authority and control. In justifying its stance, CSIRO pointed out that it had received advice from overseas experts, from the Ferguson Committee reviewing the Division of Animal Health, and from the ANAHL Consultative Committee, where "officers representing the Departments of Primary Industry and Health on that Committee have given full support to CSIRO's views on live virus importations".82

Despite the advice of CSIRO, Jones decided to adopt the ASTEC recommendation that FMD virus not be imported until the end of 1987 when the matter would be reassessed. Jones secured the agreement of the Ministers for Health and Primary Industry and then the Caucus Industry Committee before taking the matter to the full Labor Caucus on May 24, and Cabinet on May 30, 1983. This action appeared to
finally settle the live FMD virus question, as decisions by Caucus can only be overridden by another full Caucus meeting or the National Conference of the ALP, neither of which appeared likely. Caucus also agreed that a small research group should be located at an overseas animal health laboratory to undertake research on the development of diagnostic procedures which did not require access to live virus, and to prepare and check inactivated diagnostic reagents for use at ANAHL. However, a full response to the ASTEC Report would not be given until the Budget session in Parliament due to begin in mid August.

Primary producer organisations welcomed the decision; Dr. Ferguson was reported as saying that "CSIRO was in favour of importing the virus but it accepted the decision". He also stated that "our proposal to import the virus wouldn't have taken effect until mid 1987 anyway."

However, the issue had not been completely defused with the removal of the immediate threat to import live FMD virus. The conclusions of the ASTEC and AAS Reports, that ANAHL should not produce FMD vaccine, or undertake training requiring the infection of animals with live FMD virus, and that research using live FMD virus should be undertaken overseas, led to a renewed questioning of the need for the laboratory now that it had lost a number of functions for which it was specifically designed. Articles referring to the laboratory as a "white elephant" began appearing again, suggesting that if the ASTEC recommendations were followed, the Government would "be left with an embarrassing $150 million edifice in Geelong." CSIRO had itself contributed to this view with its earlier arguments that the laboratory would not be able to function as was intended without live FMD virus. Dr. Ferguson had stated that without live FMD virus, the facility "would largely be unnecessary", that it would be "less effective" and that "a lot of the expense which had been incurred in providing a very high degree of security would have been unnecessary". However, after the decision against importation had been
taken, Dr. Snowdon stated that "the foot-and-mouth debate had been blown out of all proportion as this exotic virus would be only a small part of the laboratory's total operations". Now CSIRO were arguing that "unless it is allowed to import a package of around 14 other live exotic viruses into Australia the laboratory could have to be mothballed as it would be uneconomic to operate".

CSIRO suffered the final blow to its public credibility with the Government's decision against importation of live FMD virus. Despite Wild's statement that "it is difficult to see why CSIRO's reputation should suffer because farming organisations, some scientists and, so some are arguing, the Federal Government, later choose to reject this proposal (on FMD virus)"; it was widely held that "the issue has, over the past couple of years, badly dented the Organisation's reputation for excellence and objectivity." In the past, CSIRO's views had been considered authoritative and prior to the establishment of ASTEC, "the collective wisdom of CSIRO reigned supreme." With the rejection of its arguments now, and, more importantly, the acceptance of alternative proposals which appeared practical, effective and acceptable to the community, came a questioning of the motives for CSIRO's firm stance in the live virus debate and indeed its role in the establishment of the laboratory. An article in the Primary Industry Newsletter (PIN) stated:

Senior public servants have referred to 'empire building' as one of the motivations for ANAHL. Apparent attempts to 'muzzle' CSIRO scientists have dismayed other scientists. And the suspicion that ANAHL was an academic status symbol as much as anything else, has produced the first real questioning that we can remember about the motives of CSIRO in a major public issue.

In an address at the "Science Research in Australia" Conference in June 1983, the Chairman of CSIRO, Dr. Wild, responded strongly to the criticisms CSIRO had been receiving. He claimed that the live virus issue "has become - or has been manipulated into - a public (indeed political) controversy" and that, "the truth is that a small group of people have made it their business, for whatever motives, to
launched a systematic orchestrated campaign to undermine ANAHL and through that to discredit CSIRO. Dr. Wild did not name these critics nor did he ascribe motives, but he claimed that "it began with addresses to farmers' groups, and now takes the form of a systematic campaign in the media." He went on to state that:

To read some of these reports you would gain the impression that ANAHL was a pet project initiated at the whim of CSIRO, that we have some devilish scheme to import live FMD virus at great danger to the livestock industry merely so that our scientists can have something to play with; that we are at odds with our Minister, ASTEC, the Academy of Science, and the scientific community; and that ANAHL is no longer needed and so the building is a white elephant.

Nevertheless, although CSIRO could not be charged with initiating the project, some individuals within CSIRO had certainly fostered its development and influenced its form and functions. And, whatever its motives, CSIRO had strongly advocated importation of live FMD virus, a position which did place CSIRO at odds with ASTEC, the AAS and part of the scientific community. Furthermore, it has been demonstrated above that CSIRO itself contributed to the belief that without live FMD virus, and later, without access to a minimum number of viruses, the laboratory could become a white elephant. And finally, the heated debate which occurred when Parliament resumed would certainly suggest that the Chairman and CSIRO Executive were at odds with their Minister.

Mr Jones told the Parliament that CSIRO was "in a position of great embarrassment about the future of ANAHL." Dr. Wild replied in a news release, that "the only source of embarrassment to CSIRO is the fact that the Government has failed to provide funds for the staff required to commission the Laboratory in this year's budget." These exchanges provided reporters with a field day. One paper reported it as "a bitter conflict between two stubborn men," claiming that following an abortive bid by Wild after the March election to move CSIRO from Jones' portfolio to the Prime Minister's department, the relationship between Wild
and Jones had deteriorated. The Bulletin claimed that in the past CSIRO had "effectively thumbed its nose at the bureaucracy" by the "political seduction of a series of ministers who were for the most part simply not scientifically literate". This, they argued, changed when "a strong-willed and assured" Barry Jones came to the portfolio, "armed with a developed policy towards science". It was also reported that "the issue has been clouded by suspicions within the Labor Party that CSIRO has been feeding the opposition with material on ANAHL to fight Mr. Jones in Parliament".

Further confusion and disputation arose with the release of a report recommending a mobile on-farm diagnostic scheme. Jones referred to this report when he spoke in Parliament of:

... a major difference of scientific opinion about how best to tackle the problem of diagnosing and treating exotic and indigenous animal diseases. This is essentially a difference between a rigid, centralised approach, such as that of ANAHL, or a flexible, decentralised model using experienced flying squads of diagnosticians.

However Jones' Parliamentary opponents questioned the authority of this report, claiming that it was not a report of standing by the Australian Academy of Science, but an individual report by Professor Morris, whose position was well known. Mr. Anthony also claimed that the report's recommendations had been opposed by CSIRO and ASTEC. Jones on the other hand claimed he had checked on the status of the report with Professor Holloway. Later the Academy side-stepped the issue by expressing "concern at the minimal role played by the National Committee of Animal and Veterinary Sciences in the preparation of the Morris document" and claiming that "in view of the controversial nature of the subject the Academy would have been better served by seeking a wider range of consultations". It was also stated that "it was regrettable that the purpose of the document has been
misunderstood in some quarters and that it had been distributed more widely than
was appropriate".110

On September 6th, 1983, Jones announced in the Parliament that following a
recommendation from the Chairman of CSIRO, and the agreement of the Prime
Minister, a ministerial committee comprising the Ministers for Trade, Defence, (in
whose electorate ANAHL was located), Primary Industry, Health, and Science and
Technology, was to be established to consider the future of ANAHL. This committee
met on September 20. However, prior to this meeting, Mr. Jones had several
meetings with Dr. Wild and two members of the CSIRO Executive, Professor Craig
and Dr. Boardman. Jones told the Parliament that during the course of these
meetings:

... it was conceded that the rigorous design of ANAHL, particularly the
seven drops in air pressure, was not necessary for animal viral agents
other than FMD,111

... it was volunteered ... that in retrospect it was now clear that ANAHL
should have been located in Tasmania rather than Geelong for extra
security112.

... it was volunteered that it was possible that changing diagnostic
methods would mean that ANAHL could be phased out by 1990.113

Jones also claimed that his statement to these three CSIRO representatives, that
"the building was overspecific and overdesigned and that if there had been an
earlier decision that live FMD virus would not be imported, the building would have
been smaller, cheaper and finished earlier", was not challenged at these
meetings.114 However, in a news release, Dr. Wild reaffirmed CSIRO's belief in the
need for ANAHL, claiming that "there had been some misunderstanding about
CSIRO's view on the future of the Laboratory" by Mr. Jones.115

Several references to this conflict between the CSIRO Executive and the
Minister were made in Parliament, with the Opposition claiming that Mr. Jones had
been "carpeted"116 and "straightened out"117 by the Prime Minister, and that Mr.
Jones, and not CSIRO, was "red-faced" over the issue. Whether or not this was in fact the case, Jones altered his approach, claiming now that "CSIRO has inherited a situation where the right questions were simply not asked over a long period." In a media release, Jones went even further, shifting the blame to a previous government, stating that it had "deliberately covered up a decision to allow the Australian National Animal Health Laboratory to handle live Foot-and-Mouth Virus prior to an outbreak in Australia." Jones also maintained that:

The decision was never referred to Cabinet, it was never referred to the coalition parties for debate, and there was a deliberate move not to publicise the decision or encourage any sort of public debate because they knew how contentious it would be.

Apparently they wanted the CSIRO to carry the can for their secret decision, and they wanted the CSIRO to confront the considerable opposition that Mr. Anthony knew would come from producer groups.

Following his retirement in 1985, Dr. Wild said that he agreed with Jones' description of this "tempestuous" period of public disagreement, as a time of "creative tension." He continued:

It took a certain time for the Minister and I to get to know and trust one another. The stand I took over the Geelong Laboratory was the only one I could take. It wasn't just my individual stand, but it was the view of the CSIRO Executive.

The conflict between the CSIRO Executive and Jones, along with rumours that Jones wanted to mothball ANAHL, led CSIRO to recommend a ministerial committee, presumably in the hope that it could thus win support and overcome Jones' opposition. Although attention had focused on CSIRO at this time, the Bureau of Animal Health had also been actively promoting the laboratory to its new Minister, Mr. Kerin. In March 1983, just after the Federal election, Dr. Lascelles, Chief of the Division of Animal Health, CSIRO, requested an interview with Mr. Kerin. Immediately following this meeting, Mr. Gee sent a minute to Mr. Kerin pointing out...
that "the CSIRO administration is aware that Dr. Lascelles sought a meeting with you", that "the CSIRO Executive was concerned about the meeting with you as Dr. Lascelles had given the CSIRO an assurance that he would adhere to the CSIRO policy on the ANAHL/live virus issue and refrain from public opposition", and that "the CSIRO was considering attempting to involve the Minister for Science and Technology in your meeting with Dr. Lascelles". Gee stated that he had argued against the latter since "Dr. Lascelles appeared only to be raising issues with you of which we were previously aware and on which we had already advised you by minute or brief." In a note to Gee, Kerin replied that Dr. Lascelles, "a personal friend of long standing", had wished to "re-iterate his position on the live FM virus importation issue", a position which Kerin claimed he was well aware.

This incident would suggest that both CSIRO and the Bureau of Animal Health were nervous about the reaction of their new Labor masters on ANAHL and the live virus question, and were anxious to insulate them from any outside advice. In their analysis of Government departments, Pitt and Smith argue that the "longstanding fiction of the British constitution... that politicians decide and the bureaucrats execute those decisions", downgrades the central importance of the bureaucracy in the decision-making process. They point out that on assuming office a new minister is in a relatively weak position, usually lacking expertise, and often inheriting decisions which have been made by the bureaucracy prior to his appointment. Furthermore, a minister tends to be isolated, subject only to the advice of his officials who have the advantage of expertise, or at least an established network of outside experts to whom they can turn for support for their arguments. Organisational and administrative complexity also means that matters which are "nominally in the hands of the minister, must in reality pass to the civil service", thus increasing the power and influence of the bureaucracy.

After the decision against importation of live FMD virus had been taken by the Government, the Bureau of Animal Health was still presenting arguments to the
Minister on the need for ANAHL and the need for it to undertake all the functions originally proposed. Three days after the decision by Caucus was announced, an FMD scare at Humpty Doo in the Northern Territory was reported. Tests performed at Pirbright indicated that no viral disease was present and the alert was over in a few days. However, the following month, Mr. Gee briefed Mr. Kerin on "the role ANAHL could have played in the 27 May suspected exotic disease incident and the future function of ANAHL." He stated that if ANAHL had been operational, the initial results would have been available 48 hours earlier, overseas countries would not have been notified unless a positive diagnosis was obtained, and in the case of a positive diagnosis, Australia could introduce export bans before a response by trading partners. ANAHL, he argued, would also reduce the risk of deterioration of samples. It was revealed in this brief that the wrong transport medium for the samples has been used, resulting in the early results from Pirbright being treated with caution. According to Gee, a phone call to ANAHL "would have prevented this". Furthermore, it was claimed that "had ANAHL been operational for some months, its training efforts could have modified the early alarm". On the future uses of the laboratory, Gee reaffirmed the need for ANAHL for diagnosis, training, vaccine production and testing and research.

The ministerial committee met on September 20, 1983 and its recommendations to the Prime Minister, Mr. Hawke, were that:

... the commissioning and setting to work of ANAHL as a diagnostic facility should proceed without delay, with planning for the limited research function necessary to complement the diagnostic capability.

... exotic animal viral disease agents already held in Australia should be relocated at ANAHL as soon as its microbiological security has been proved.

... consideration should be given to include studies of endemic animal viral diseases at the highest level of professional competence.

Mr. Jones further reported that the committee wished
... to seek further technical advice before deciding whether ANAHL will continue essentially as a diagnostic facility serving the primary export trade and quarantine function or whether the research function will be significantly upgraded.\textsuperscript{139}

The Prime Minister agreed to the appointment of an advisory committee.

These recommendations not only removed the final resolution of the issue from the direct influence of Jones, but the formation of a committee seeking technical advice provided an opportunity for CSIRO to reassert itself. Now that the "political" decision not to import live FMD virus had been taken, the issue was once again defined a technical one, requiring expert advice and not political choice. The recommendation that the facility be commissioned, removed the immediate threat that it would be mothballed, vindicating CSIRO's belief that "no Government [would] allow ANAHL to be turned into a 'white elephant'".\textsuperscript{140} This was supported by Jones' public comments that now the facility was completed, he wanted to "get the best value for money out of it"\textsuperscript{141} and put it to the "widest variety of uses".\textsuperscript{142}

These comments reflected a subtle shift which had occurred in the questioning of the laboratory. No longer was the emphasis on debating whether it should have been built or whether there had been a need for it to perform the original functions. The Ferguson Report stated, "In any case, the capital has been spent and is not recoverable".\textsuperscript{143} and this attitude of acceptance finally prevailed. To further vindicate their position, CSIRO were now claiming that any reduction in the need for ANAHL was a result of technological advances and this argument was accepted and promoted by Jones.\textsuperscript{144} CSIRO were thus retrieving some of their lost credibility and authority. And much of their influence in the decision-making process was restored with the formation of this technical committee.

Jones had announced that the committee appointed would be a "very expert committee" with "no partisans", "to give a broad viewpoint".\textsuperscript{145} Those selected were Professor Fenner from ANU, Dr. Boardman, member of the CSIRO Executive, Mr. Gee, ...
Director of the Bureau of Animal Health, Professor Marmion, Director of the Division of Medical Virology. The Institute of Medical and Veterinary Science, Adelaide, Dr. Wells, First Assistant Director-General of the Quarantine Division. Commonwealth Department of Health, Mr Whitelaw, Executive Director of the NFF, and Mr. Gillespie, Principal Advisor, Expenditure Division, Commonwealth Department of Finance.

In view of the ministerial committee's request for further technical advice and Jones claim that the committee would be non-partisan, it is important to examine both the expertise and any commitment or bias of the individual members. The role of Mr Gillespie was to provide "a precise indication of just what is needed in terms of staff and money". Thus, whilst non-partisan, his expertise was confined to financial matters only. On the other hand, Mr. Whitelaw was definitely a partisan but with no specific expertise on scientific or technical matters; his role was presumably to protect the interests of primary producers. Dr. Wells had not previously been involved in the public debate, however his colleague, Mr. Doyle, had supported ANAHL and its functions and CSIRO. Both Dr. Boardman and Mr. Gee were strong advocates not only of ANAHL and all its previously approved functions but also of live virus importation. Professor Marmion, an acknowledged expert in medical virology and member of the AAS ad hoc committee, had expressed support for ANAHL undertaking research and diagnosis using live virus at the Forum. There he stated: "I am not worried that things will get out of ANAHL ... I think we can do this sort of diagnosis and we can do this sort of research, I think we should be self sufficient". Thus it would appear that while Professor Marmion had no vested interest in the laboratory, he would be supportive of CSIRO's proposals on the functions it should perform.

The Chairman of the committee, Professor Fenner, was hailed by Jones as "one of Australia's most eminent medical scientists", although Fenner himself claimed that he had not "had any personal experience with veterinary virology".
Fenner had been associated with CSIRO as a member of the CSIRO Advisory Council. At a CSIRO Executive Seminar on "the Role of ANAHL" held in October 1981, Fenner presented a paper on "Maximising the Research Potential of ANAHL". At that time he supported the diagnostic, vaccine production and testing and training functions, and stated that he was "confident that it would be perfectly safe to work with any or all of the agents listed". However, while arguing that "research is essential if ANAHL is to function effectively", Fenner questioned whether the research requirements were appropriate for CSIRO. While emphasizing that he "[did] not feel strongly about this", and that his main concern was "the possible erosion of other research in CSIRO occasioned by the necessity to support the operation of this very expensive facility", he suggested management by the Bureau of Animal Health, with facilities made available to immunologists and virologists from universities, research institutions and CSIRO for small, targeted research projects.

The Fenner Advisory Committee was far from the very expert, non-partisan committee promised by Jones. In fact, it represented all of the parties to the controversy, however, it would appear that on balance the composition favoured the CSIRO view. Although the inquiry's stated function was to provide further technical advice, it could be argued that its function was more symbolic than technical.

Following the decision on live FMD virus importation, Jones had announced that a response to the other recommendations of the ASTEC Report would be given in the next session of Parliament. However, the hostilities between CSIRO and Jones led to the formation of a ministerial committee instead. Although these ministers could have considered the ASTEC and AAS Reports, since together they had dealt comprehensively with scientific and technical issues, and any new inquiry would be merely reconsidering the same evidence and arguments, they decided instead on the formation of yet another committee of inquiry.
After more than two years of public debate, and four months of public wrangling between CSIRO and its Minister, the authority and credibility of CSIRO, and indeed science itself, had been severely damaged. The Fenner Committee provided an important ritual, symbolising the final definitive investigation into ANAHL. Wynne argues that rituals are important: he claims that open decision-making, "in public rather than by the public in any direct sense" can be "socially cohesive if all sections of society see [these rituals] as meaningful and serving some purpose". 155 "Widely socially visible and searching discussion of conflicts, uncertainties and alternative choices" 156 allows the public to identify with the decision-making process. The ASTEC report had become too political to provide this; two of its controversial recommendations had already been accepted by the Government, against the advice of CSIRO. The AAS had also become involved in the political debate over Professor Morris' report on mobile, on-farm diagnostic units. Furthermore, both these investigations had been initiated during the previous government's term of office.

Although the Fenner Committee was obviously composed of partisans, no serious objections were raised. With the live FMD virus issue settled to their satisfaction, primary producers accepted that the facility should be used to provide the livestock industry with some of the promised advantages. Also, CSIRO had held a number of meetings with academic scientists who had opposed them, in a bid to "explore possibilities for transferring debate on ANAHL from the media to scientific forums and to look at ways to enhance consultation and advice processes in relation to the role and operation of ANAHL." 157 A symposium was held in October 1983, and although the Press were excluded, a CSIRO news release stressed the considerable degree of consensus reached by the participants. 158 Thus, this new inquiry was conducted, not in a climate of hostile conflict, but in a climate where all parties were anxious to end the controversy and to see the laboratory put to some worthwhile use.
The terms of reference of the Fenner Committee were:

Given the financial implications of a full research function for ANAHL, the specific physical design constraints and the current state of viral diagnostic research in Australia:

1. Should ANAHL operate in the future:
   (a) as a research-oriented facility with secondary diagnostic function; or
   (b) essentially as a diagnostic facility serving primary industry?

2. What order of operation should be considered?
   What are staff and cost implications?

3. Should ANAHL work on endemic as well as exotic animal viral pathogens?

4. Should ANAHL undertake virus vaccine production?

5. Should ANAHL become an animal viral reference centre for South-East Asia?

The Committee received submissions from 19 organisations and fifteen individuals; of the 19 organisations, 15 were State or Commonwealth departments and authorities and their coordinating committees; three submissions were from CSIRO, the CSIRO Advisory Council, and the CSIRO Institute of Animal and Food Sciences; and two individual CSIRO scientists, Dr. Pierce and Dr. French, also made submissions.

The Committee concluded that while the first priority was to provide a diagnostic and training facility,

... the necessary level of expertise can better be reached and sustained if there is also a substantial research effort relating not only to the improvement of diagnostic methods, but also to research in molecular virology and in the pathogenesis and immune response in viral diseases.

It was also recommended that approval be given to "import such exotic viruses (other than foot-and-mouth disease virus) as are necessary for the proper performance of its diagnostic and training functions."
It is interesting to note the inclusion of the training function in the recommendations. Consideration of training was not included in the Committee's terms of reference, and the ASTEC and AAS reports had not supported the use of live viruses for training purposes. However, CSIRO had prepared a supplementary submission on training for consideration by the Fenner Committee, which pointed out that "training of field staff in the recognition and presumptive diagnosis of virus diseases, in particular exotic diseases of livestock, and laboratory staff in techniques for isolation and identification of viruses" had been approved by the PWC and the Parliament in 1974. The submission went on to describe the training courses proposed and the advantages they would provide. The Fenner Committee agreed that these courses were valuable and that training, along with diagnosis, was "an essential and basic function".

The Fenner Report also stated that "the importation of a number of exotic viruses is essential if ANAHL is to develop its diagnostic capability" and listed those viruses considered to be a first priority. This list corresponded to CSIRO's "minimum package".

The research function was strongly supported in the Report. It stated:

... research is not a luxury. It is essential if scientific staff of the competence needed to carry out the diagnostic function of ANAHL satisfactorily are to be recruited and retained. Further, the international credibility of pronouncements by ANAHL on the presence or absence of exotic viral disease in Australia will rest on the scientific reputation of the staff of the Laboratory, which can only be established by their performance in research.

The Committee also claimed that:

It is the large research component of the day-to-day work of ANAHL that justifies CSIRO's role in its staffing and management. However, the high capital cost and high running costs of ANAHL (as compared with other virological research or diagnostic laboratories) are engendered not by the research function, but by the necessity for maximum microbiological security for ANAHL's diagnostic and training functions.
On the question of research on endemic viral diseases, the Committee claimed that this function had been deleted in the early 1980's. "following discussions within CSIRO about the likelihood that such a function would compete for resources with ongoing research in other parts of the Organisation and in universities." 167 It was pointed out in the Report that "research on endemic diseases was a vague term which appeared to enlarge the functions of ANAHL in such a way as to include research on all viral diseases that affected livestock". 168 The Committee agreed that extensive work on endemic diseases at ANAHL would interfere with the resources available to other parts of CSIRO, and would be more expensive and less efficient. Suitable endemic research for ANAHL was defined as the "acquisition of the skills necessary to make a positive diagnosis on as many as possible of the specimens submitted" and "comparative studies where endemic viruses are closely related to exotic viruses of importance". 169

The arguments and recommendations on diagnosis, training and research closely corresponded to those in the CSIRO submissions, and to those approved by the PWC in 1974. The important difference was the vaccine production function. Although vaccine production had been approved by Parliament in 1974 and re-endorsed in 1979, the Fenner Committee recommended against undertaking this function.

The Commonwealth Serum Laboratories had argued in its submission to the Fenner Committee, that Australia already had the capacity for the manufacture of vaccines other than FMD. 170 The Fenner Committee stated: "the only strong case for proceeding with the section of the ANAHL Vaccine Production Unit designed for the production of inactivated vaccines appeared to be for its use for producing foot-and-mouth disease vaccines." 171 However, the Committee maintained that completion of this unit would take at least 29 months and several more months before production could commence. Thus 1987 would be the earliest time that ANAHL could undertake vaccine production.
Although this timing would correspond with the Government’s review of the importation of live FMD virus, the Fenner Committee believed that “real advances” in new technology, offering “scientifically attractive prospects” would occur before 1987. Furthermore, the Committee argued that production and storage of orthodox FMD vaccines had advanced substantially, and therefore, membership of an international vaccine bank appeared to be “the optimum way of ensuring access to foot-and-mouth disease vaccine, if it were needed”, and “the cost would be lower than the $2.6m required to complete construction and fitting out of the Vaccine Production Unit at ANAHL.” It was further argued that if and when new vaccines using genetic engineering technology were developed, which did not require live virus for their manufacture, these could be prepared in less secure laboratories, such as CSL, which already had resources and expertise. The question of whether or not Australia would ever resort to vaccination was not pursued.

The staffing and financial plan submitted by CSIRO was used as the basis for deciding the scale and order of operations of ANAHL. The Committee recommended a total staff requirement of 180 rather than the 212 proposed by CSIRO, however, 14 of these reductions were due to the deletion of the vaccine production function. It was also recommended that the running costs of the laboratory be shared on a 50:50 basis between the Department of Primary Industry and CSIRO. The rationale for this recommendation was that although CSIRO would be responsible for staffing and managing the facility, and although the continuing function of the laboratory would be research, its primary function was to service the animal production industries by providing a diagnostic and training facility. This cost sharing formula would, it was argued, firmly “establish ANAHL’s research activities and at the same time ensure that priority [was] always given to its primary functions of diagnosis and training.”

The fifth term of reference, the question of whether the laboratory should
become an animal viral reference centre for South-East Asia, appears a surprising inclusion, given that this had never been included as a function in any of the previous inquiries, nor had it been a matter for public debate.

The first indication of a role for ANAHL outside Australia occurred in 1970, when it was suggested within the Department of Health that there could be co-operation between Australia and New Zealand. It was proposed that Australia could share the New Zealand quarantine station and provide the laboratory facility to service it. It was further suggested that the logical development would be for Australia to make available other facilities such as training courses.178

The next reference occurred at the PWC Hearing in 1974. Mr Kelly asked Dr. Pierce if efforts had been made to co-operate with New Zealand. Pierce replied that he was not aware of any negotiations but he believed that "this facility could, by aiding those countries close to our shores, help to safeguard our own animal industries, and I am thinking of countries other than NZ."179 Later Pierce stated: "We can offer a tremendous service to the whole of South East Asia in confirming and identifying the outbreaks of diseases they may have, and which they are not capable of diagnosing for themselves at the moment."180

In the Department of Health submission, presented to the PWC by Mr. Gee, it was stated that:

Apart from its role in national plans for control of exotic diseases, it can be foreseen that this laboratory could participate, in a key role, in assisting in determining the disease status of some countries adjacent to Australia. Such a project, which is now in its early stages of development, would be of direct assistance to Pacific countries.181

During questioning Gee stated that "consideration would be appropriate to making it perhaps a regional laboratory to handle less fortunate countries in our area and countries that will never be able to develop their own diagnostic facilities."182

The PWC Report concluded that "an early approach to NZ would enhance active
co-operation between the two countries in the operation of the facility". The Report also stated that:

The Committee were informed that the Government foresees that this laboratory could well participate in assisting in the control of animal diseases of countries adjacent to Australia, thus helping to keep back the frontier of exotic diseases, especially foot and mouth disease.

In May 1975, at an Animal Health Committee meeting, Mr. Gee, now Director of the Bureau of Animal Health, "told Dr. Lascelles that he had advised the South Pacific Commission that the laboratory would assist in processing specimens from the Pacific area."

The regional role of ANAHL was discussed in November 1981, at an ANAHL Consultative Committee meeting, chaired by Mr. Gee and attended by Snowdon and Ferguson of CSIRO and Doyle of the Department of Health. The meeting was informed that overseas maximum security laboratories "see ANAHL as becoming a reference centre for animal diseases in South-East Asia."

The minutes of the meeting reported that:

... the Committee considered that farmer resistance might be strong in Australia, particularly if the concept of regional responsibility were extended beyond NZ and possibly Papua New Guinea; however, the political problems should not be insuperable if the proposition were handled carefully with emphasis on protection for Australia. The Committee agreed however, that Australia's needs must take priority and the time is not ripe to raise the question of a regional role for ANAHL.

In an interview in 1981, Snowdon stated: "we believe that we could probably play quite an important collaborative role with NZ", but there was no suggestion of the laboratory becoming a regional reference centre.

In June 1982, Snowdon prepared a paper on "The Scope and Development of Research in ANAHL", which included a section on the regional role for ANAHL. In it he stated that "up to now any formal commitments had been avoided and no regional role had as yet been agreed upon". This, he argued, could only come
into being "by mutual consent and collaboration between Australia and countries in the South-East Asian and Western Pacific regions." However, Snowdon did state that:

... preliminary and very informal discussions have been held with individuals of disease control authorities in Hong Kong, Singapore, Indonesia and New Zealand on the role of ANAHL in Australia, and how, at some future date, it may be able to accept some responsibility in a regional role.

This paper was included as an Appendix to the Ferguson Report, and in a letter to ASTEC, Ferguson wrote that ANAHL would "complete a world coverage of high security laboratories by completing a triangle formed by Pirbright, Plum Island and Geelong."

At the Forum, primary producers were told that ANAHL had not entered into any obligation to provide diagnostic services to any other nation, and the matter was not discussed further. In answer to a question in Parliament in May 1983, Mr. Jones also stated that no international commitments had been made. Nevertheless, six months after the Government's decision against the importation of live FMD virus, Ferguson was promoting the idea of a regional role for ANAHL, stating that it would allow Australia "to contribute more to the international effort especially in the South-East Asia Region, just as Plum Island and Pirbright [have] been doing for many years."

The Fenner Committee Report stated that it was the expectation of the Directors of Pirbright and Plum Island, that ANAHL "would complement their activities as the Foot and Mouth Disease Virus Reference Centre for South-East Asia." The Report also suggested that ANAHL could become a reference centre for Bluetongue, however, it pointed out that current quarantine restrictions forbidding the entry into Australia of animal material that may contain infectious agents of an unknown nature, precluded both of these possibilities at present. It was suggested by the Committee that this restriction could be reviewed, since one of the responsibilities
of ANAHL was to accept material from the quarantine station, and the Report recommended that the regional role be re-examined in 1987.\textsuperscript{198}

Like the importation of live FMD virus, the establishment of ANAHL as a regional reference centre was recognised by the proponents as a highly controversial issue. In this case, however, the proponents were more successful in keeping the matter "low key", and public opposition was avoided. The arguments favouring ANAHL becoming a reference centre were not compelling. Assistance could be provided to neighbouring countries without the need for accepting suspect samples in Australia. The ASTEC Report concluded that importation of live virus represented "an additional risk over and above that posed by its accidental or deliberate introduction by other means".\textsuperscript{199} and it could be argued that acceptance of specimens from countries of unknown disease status would represent a further risk.

Interestingly, the same individuals who had promoted the need for live FMD virus prior to an outbreak were responsible for promoting the idea of a regional role for ANAHL. Whether the two sets of arguments were to be used to justify each other is not clear, however, it could be argued that the interest in having ANAHL approved as a reference centre was to gain international recognition and prestige for the laboratory, and to enhance the reputation of those individuals closely associated with the establishment and operation of the laboratory.

The Fenner Committee Report was tabled in Parliament in September 1984, along with a general statement of the Government's response to it, and to the 1982 ASTEC Report. The Government accepted all the recommendations of the Fenner Committee Report, but extended the proposed consultative process for securing approval for importation of live pathogens. Jones told the Parliament that "because of the sensitivity of the issue, the Federal Government will make the final decision on each individual proposal".\textsuperscript{200} Thus, to obtain approval for importation of a particular virus, a detailed case would be submitted to the ANAHL Board of
Management, and then through AHC and SCA to AAC, who would be obliged to provide formal notice to other interested parties for comment and advice. The Minister for Primary Industry would then present the proposal for joint decision with his colleagues, the Ministers for Health, Science and Technology, and Trade, and if approved the decision would be taken to the Cabinet by the Minister for Health for endorsement.201

Although CSIRO's reputation had been damaged in the public controversy, the Fenner Committee Report effectively restored much of its lost authority. The Committee relied heavily on the advice and submissions from CSIRO and strongly supported CSIRO involvement, especially in the research function. Given the prohibition on importation of live FMD virus before 1987, most of CSIRO's proposals, apart from vaccine production which had always presented difficulties to them, had been endorsed. On the advice of CSIRO, the Committee endorsed the training function even though this was not included in the terms of reference, and the staffing and funding recommended by the Committee differed only slightly from that proposed by CSIRO. While the consultation procedure for approval of importation of live viruses was extended, the Committee effectively sanctioned the importation of what CSIRO saw as a "minimum package", necessary to make the laboratory viable. For CSIRO, the Fenner Committee provided an opportunity to vindicate itself and regain its lost authority and credibility not only on scientific, and technical matters, but also as a political force.

The laboratory was officially opened by the Governor-General, Sir Ninian Stephen, on April 1, 1985. Speeches were also given by Mr. Jones, Minister for Science and Technology, Mr. Snowdon, Officer-in-Charge of ANAHL, Mr. Shanahan, Senior Vice President of the NFF and Dr. Wild, CSIRO Chairman. As one paper reported: "If in early 1983 you had told the Federal Government and Australia's rural community they would be together celebrating the opening of the CSIRO's Geelong animal health laboratory, they wouldn't have believed you."202
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201. ibid.
CHAPTER XVIII

CONCLUSION

In the aftermath of the public debate, CSIRO was left to appraise the damage to its reputation and image. Media reports, that CSIRO, once a "remote and untouchable" organisation, was being called to account, and that it had "blown its scientific infallibility", reflected a new climate of public opinion. The CSIRO Executive recognised that there were signs that CSIRO's "credibility among significant sectors of the community [was] declining", and that "criticism of the organisation [was] likely to continue and even to increase". The realisation that this situation could result in not only "loss of public esteem", but could have "serious political consequences" was of great concern to the Executive.

As we have seen, CSIRO placed considerable emphasis on maintaining its autonomy and hegemony in the field of scientific research in Australia. Furthermore, it has been shown here that public esteem and trust, along with the claim to scientific knowledge and scientific rationality, provided CSIRO with considerable authority and influence on matters relating to science and technology.

Fearing that further criticisms and challenges could significantly affect the role and functions of CSIRO, the Executive set about determining the reason for this "increasing public scrutiny of CSIRO and its policies". A number of specific factors were identified:

the recession, leading to renewed demands for R&D that will have quick and tangible benefits and to competition for funds between CSIRO and other research organisations; the Federal Government's commitment to increasing public involvement in science and technology issues; more specifically, the success of the present Minister for Science and Technology, Mr Jones, in raising the public profile of science and
technology, and his own views on CSIRO; the growing band of researchers and analysts working in the field of science and technology policy; the rapid advances in science and technology, especially in areas such as computers and biotechnology, and the significance of these advances in determining research priorities.8

The report also identified "a number of broader social developments"9 believed to be relevant. These were:

... a philosophical change from regarding science as value-free, disinterested pursuit of knowledge to considering it as a social activity as subject to misconceptions, biases and prejudices as other activities; the growing public awareness of the impacts, both good and bad, of science and technology on society, an awareness being heightened by the dramatic implications of the revolutionary advances in computers, robotics and biomedicine; an increasingly pluralistic society and the trend from so-called representative democracy to participatory democracy, with the public, or active sections of it, more reluctant to leave decisions wholly to elected representatives and their expert advisers; reflecting and reinforcing these trends, the change in the media's reporting of science and technology from a fairly descriptive coverage of specific research to a more critical, conflict-laden coverage.10

The identification of these changes was not new; many writers had related the unrest in America in the late 1960's and early 1970's, to changing perceptions of science and technology, and the role played by scientists and scientific institutions. However, it is interesting to see that it was only after fierce and sustained public criticism that CSIRO considered these social changes.

The solutions proposed were that CSIRO become "more open to inquiries, more receptive to just criticism, and more tolerant of its critics ... and more energetic about arguing its case publicly".11 In this way CSIRO hoped to overcome the view that it was a "closed, secretive organisation, uninterested in public debate about its policies and priorities, resentful of criticism and vindictive towards its critics".12 CSIRO was also aware that its "response to some of the recent criticism did more damage to its reputation than the criticism itself".13

In the past, public participation had been intuitively seen as a component of cost or risk14, and was feared because of possible delays, and the threat to
decision-making autonomy. Now, however, disruption caused by controversy and criticism in the late stages of a project, or implementation of a technology, was increasingly seen as a greater cost, not only in terms of delay and uncertainty and loss of autonomy, but as a threat to the authority of advisers and decision-makers. The reforms proposed by CSIRO were a move towards a more democratic approach to decision-making. Reduced secrecy, citizens right of access, and an opening up of the public debate on sensitive issues to allow wider discussion and to provide the public with information has occurred to some extent in Europe and America in response to public demands.15

Participation has been presented as a means of removing, or at least reducing opposition and conflict. However, there are a number of criticisms levelled at the effectiveness of this practice. Dickson has argued that the expanding public representation is “little more than a public relations move”16 that may actually be “reducing the degree of democratic control over technology policy”.17 It has been pointed out that participation usually occurs at a very late stage in the decision-making process after the initial aims have been established, or at the point of implementing the technology. This means that the public can only react negatively, and the decision is then limited to whether or not the project should proceed.

Closely related to this is the control of agenda setting. Agenda setting includes not only designating a problem or issue for consideration, but usually defines the problem in particular terms which then limits possible solutions, and determines what constitutes a legitimate argument. Furthermore, the question of what form of participation will be allowed, if any, is set and is beyond public debate. Participation is not a right, but a privilege bestowed at the discretion of the decision-makers.

In Part One it was shown that, by its very nature, the workings of the bureaucracy preclude public participation. Before a proposal is presented to the public, a considerable amount of activity has already been in progress: in this case
more than ten years had elapsed from the inception of the idea to its public announcement and justification at the PWC Inquiry. Long before the public were aware of the proposal, the problem had been defined and a solution decided. The issues were portrayed as ones requiring scientific and technical expertise, not public choice, and hence discussion was confined to "experts".

During this ten year period, incremental changes were added to the original concept, and arguments were continually re-shaped to accommodate these changes. The large number of investigations firmly established the project in the bureaucratic machinery, and once the agenda had been set and a commitment made, organisational loyalty and imperialism made it difficult, if not impossible, to re-examine the original strategic decision and its underlying assumptions and interests. As new actors entered, the current arguments were taken up and developed further without questioning their basis, often without any real knowledge of the genesis of the particular proposal. For example, after Eichhorn's visit, vaccine production was included as a function of the laboratory, purely on the basis of the authority of the Eichhorn Report. Despite scientific arguments against it, and the presentation of alternatives, vaccine production was strongly promoted by certain groups, and eventually opposition was withdrawn in order to present a unanimous front, and then systematically forgotten. Once the PWC approved vaccine production as a function, even strong opponents appeared to forget that there had ever been any question about the need to undertake vaccine production, and not only supported and facilitated its inclusion, but used it as a basis for the argument of importing live FMD virus.

Similarly, the recommendations by the PWC that the laboratory should be authorised to use live FMD virus prior to an outbreak was used to justify the later decision to import the virus. The fact that all the submissions to the PWC stated that live FMD virus was not needed for the laboratory to carry out its functions, and therefore the PWC conclusion was not a logical outcome of the evidence presented.
was put aside. When opponents of live FMD virus importation would not let this be "forgotten", the proponents took refuge in the claim that it was not their decision, but the government's, which they now had to stand by. This claim ignores the significant influence exerted by the bureaucracy, especially organisations such as CSIRO, in advising the government.

This brings us to another limitation to achieving a more democratic approach to decision-making through public participation: the privileged position held by scientific institutions. Peres has argued that "once, most of our technological missions were conducted in isolation from the world of politics" and that:

... technology has been an area in which we have conferred very high degrees of policy autonomy on few participants. We have trusted the judgements of those, especially experts, who dominated the various fields... technological missions could be left safely to the protected worlds of the autonomous statutory corporations.

CSIRO by virtue of its scientific authority has access to, and considerable influence on, government decisions concerning science and technology. Even when proposals have been initiated elsewhere, CSIRO is included in the early discussions, thus allowing the exercise of considerable influence over the definition of the problem and its solution. Furthermore, by claiming expertise, often exclusive expertise, CSIRO becomes both advocate and judge.

The basis for this influence is the widely held belief that scientific knowledge provides a superior basis for decision-making, since science is held to be objective, rational and politically neutral. However, as we have seen, uncertainties, value judgements and political choices were concealed behind this rhetoric of objective, rational, scientific decision-making. The significance of this is that despite claims to the contrary, scientific institutions behave like other bureaucracies, the only difference being that they invoke the authority of science to justify their activities.
This is not to suggest individual or collective dishonesty. To criticise scientific institutions for behaving politically is to misunderstand the nature of science.

Rationalist accounts of science see its growth as the product of individual acts of reasoning which contribute to scientific progress through the cumulative development of scientific knowledge. This view of science has been incorporated into the rational model of decision-making. The writings of Kuhn and others have, to some extent, dispelled these myths surrounding the practice of science. The reality is that scientific knowledge is a matter for negotiation: a scientific fact is a social achievement, a product of negotiation and consensus. So when scientific institutions appear to be acting politically, they are in fact still acting scientifically, according to the modern view of science.

Kuhn’s description of “normal science” can be related to scientific decision-making. “Normal science” is science largely devoted to the elaboration and extension of some generally accepted concrete scientific achievement, for example, the solution to a puzzle or problem. This concrete scientific achievement, or scientific paradigm, is inherited knowledge which is accepted, not out of logical consideration or because it has been proved, since there is always evidence that calls it into question as well as evidence that supports it, but because it has been agreed upon. Similarly, a strategic decision, such as the need to establish a maximum security animal health laboratory, gains acceptance and becomes the basis for further elaboration and extension. And as with “normal science”, each step becomes a matter for negotiation and a seeking of agreement on how it should serve its purpose.

Furthermore, just as the history of science is reconstructed to present a logical, linear and unambiguous development of knowledge, with false trails and blind alleys omitted, and indeed forgotten, so too is decision-making reconstructed. And just as a scientific proof is constructed after obtaining the experimental results, so too is the process of arriving at a decision constructed after the decision
has been reached, and any information or arguments that are not consistent with the final decision are systematically forgotten.

The reason scientists become committed to a paradigm in the first place is, according to Kuhn, the result of a "highly dogmatic and authoritarian process of training" which is subsequently maintained by a developed system of social control. The tendency by scientists to treat problems of the greatest political and psychological complexity as though they were purely rational, intellectual and academic exercises, is a reflection of a set of values and a particular world view which in turn support certain beliefs about technology. Scientists and technologists during their training are "directed towards the concept of technology as a problem-solving discipline capable of finding 'optimum solutions' and 'right answers' to strictly technical problems". However, a different set of values and world view would support different beliefs about technology.

Public controversies over scientific and technical issues are usually the result of conflicting values and world views. The rationale underlying efforts for more open decision-making rests on

the highly misleading idea that more knowledge of a situation, more widely disseminated, will lead naturally to the adoption, by all concerned, of a consensual view of what the problems are, how they should be attacked, etc., i.e. a single 'definition of the situation' will be universally established, by natural law.

However, the issue cannot be resolved simply by making more information available, since "there will be little agreement about what kinds of knowledge are relevant and valid". The proponents of a technological project attempt to overcome this by presenting their proposal as the only 'rational' answer, justifying their position with claims to expertise, scientific rationality, and service in the public interest, and by portraying their opponents as emotional and irrational and their arguments as illegitimate. And as long as it is "assumed that only one
kind of technical information is at issue".\textsuperscript{30} loss of decision-making autonomy can be resisted.

The public controversy over the importation of live FMD virus clearly demonstrates this clash of world views. The Forum was an attempt to overcome this conflict. Recognising that direct confrontation and the dismissal of criticism out of hand had not been successful, CSIRO welcomed the idea of a forum. The public controversy and the claims of opposing experts had revealed many of the proponents' commitments and the assumptions, value-judgements and uncertainties contained in their arguments. However, this was seen as idiosyncratic, and not an inherent component of science. Nevertheless, the authority of CSIRO was significantly undermined.

CSIRO's commitment to its objective led it to extraordinary lengths and great expense to protect its authority and autonomy. However, the failure to achieve agreement at the Forum can be related to differing values and corresponding world views. As views polarised, resolution by consensus became impossible since each side refused to recognise the values and underlying assumptions of the other as legitimate. It is also interesting to note that, as Pacey has claimed, "critics are always depicted as opponents, never reformers"\textsuperscript{31}, and "insider" critics are further charged with disloyalty.

The entry of Barry Jones onto the scene, and the subsequent decision to ban the importation of live FMD virus for five years, further reduced the authority of CSIRO. And this lost authority was not regained until the issue regarding the future of the laboratory was removed from the political arena and re-defined as a scientific problem. The recommendations of the Ministerial Committee, that a technical committee should be established, allowed CSIRO to reassert itself. Although constrained by the earlier decision not to import live FMD virus, most of the views and recommendations of CSIRO prevailed. Furthermore, the political process and apparent participation by all parties to the dispute legitimated and
re-inforced the conclusions of the Fenner Committee, and further controversy was avoided.

Dickson has argued that by including critics on committees, the impression of greater pluralism is given whilst the political dynamics remain unchanged. Scientists remain in the dominant positions and "maintain control of the overall shape of the decision-making process". Thus, he argues, that while participation may provide a forum for a variety of views, the decisions remain with the conventional power groups. In this way dissent is contained and neutralised; as Dickson says:

... the input of public representatives is accepted if it reflects the values that exist within the accepted range of consensus, but is rapidly dismissed as irrelevant or disruptive if it tries to question the boundaries of this consensus.

Not only is participation usually peripheral and ineffective, but those in the dominant positions can influence the choice of representatives. This means that in effect, decision-makers decide if and when the public will participate, who will participate, how they will participate and at what level this will occur, as well as what types of arguments will be considered and the criteria for assessing these arguments. Rather than challenging decisions, participation reinforces and legitimates them, and maintains the authority and influence of the scientists and decision-makers.

Another vehicle for public participation is the Parliamentary Public Works Committee inquiry, however, this mechanism has a number of shortcomings. First, the underlying assumption of the rational model of decision-making constrains the presentation of evidence, the type of evidence, and the way this evidence is assessed. Secondly, the terms of reference have already been established and are beyond debate. Issues which fall outside the narrowly defined scientific and technical considerations cannot be included. Thirdly, the lack of expertise of the
Committee means that the proponents are often both advocate and judge. Whilst the Committee has the power to obtain the advice of "independent" experts, the choice of experts is not neutral, and often the Committee is at the mercy of the proponents when it comes to identifying and defining who the experts are.

A further problem is the lack of public awareness of either the proceedings or the proposal itself. This reflects a lack of dissemination of information from the bureaucracy to the general public or even special interest groups, and a failure to canvass outside views prior to the hearing. Public participation at the PWC also raises the question of provision of adequate resources for alternate views. Funds, expertise, information and often time to consider the proposal and its implications are often not available to interested groups or individuals, and this can be a severe disadvantage when attempting to do battle with the proponents of a scheme, who have these resources in abundance.

In order to overcome these inadequacies, the PWC needs to encourage and facilitate more active and widespread public participation. This would involve improving communications and information flow and making resources available. Furthermore, the proceedings themselves need to allow for a wider ranging discussion and consideration of alternative views, not just on peripheral or technical issues, but on broader social considerations. In fact, public involvement should ideally occur before the inquiry itself in order to establish the main issues, the terms of reference and the choice of experts.

Given these structural and procedural limitations, it may be that the PWC is not the most appropriate body for considering proposals which involve a large scientific and technical component, and which have significant social implications. Proposals such as the establishment of the Australian Animal Health Laboratory are more than just a public works "issue", and may, therefore, require a different mechanism and institutional setting which is capable of evaluating the social considerations and the "public interest", as well as the scientific and technical
aspects. Ideally, this should occur before any firm commitments to the project are made, thus allowing for consideration of alternative ways of achieving the stated goals, and even consideration of the goals themselves.

However, a basic problem relating to public participation is the idea introduced earlier of conflicting world views and the public perception of science. It has been suggested that it is time for a re-negotiation of the contract between science and society now that "the myths of science which have for so long supported authority are perhaps losing their social purchase". This would require scientists to be re-educated to free them from the illusions of value-free, scientific rationality and the belief that there is only one right answer to every problem, and to make them more aware of the socio-economic implications of their work. But as well as recognising and admitting uncertainty and prior commitments, scientists also need to educate and alter the expectations of the public. In other words, scientists need to come out from behind the rituals and the cover of the authority of science.
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The purpose of systematic references is to enable others to locate and check the evidence upon which arguments are based. This is an essential part of good scholarship. However, in some situations, it can be difficult and even impossible to provide precise location details which would allow another find the same documents.

Arranging permission to obtain access to the files on AAHL was at times difficult and protracted, and required the personal representations of myself and my supervisor, Professor Johnston, to the Heads of the various government departments and organisations, and even the Ministers concerned. In some cases this procedure took as long as twelve months. Eventually I was granted general access to the files on AAHL by CSIRO, the Department of Primary Industry and the Department of Health, and provided with particular documents by the Australian Agricultural Council, the Standing Committee on Agriculture and the Animal Health Committee.
I also conducted personal interviews with:

Dr. Alan Pierce
Mr. John Dunn
Mr. W. Gee
Mr. John Auty
Professor Bede Morris
Mr. Andrew Robb
Mr. Neil Allison
Dr. Tony Shannon

Dr. Aleck Lascelles
Mr. Denis Daly
Dr. Roger Meischke
Mr. Brian Moore
The late Dr. K. Kesteven
Dr. Mike Jones
Dr. Bill Southcott
Mr. Jim Wilson.

This study relies heavily on these unpublished sources of information, and much of this would not be available to the general public, or indeed an interested scholar, unless a similar request for general access was made and granted, or unless particular documents were requested under FOI.

Having been granted access, many documents or copies of documents were accessed for me and their specific location not stated. Some unfiled and forgotten materials were stumbled upon in the bowels of institutions by serendipity. Other information was provided by a variety of individuals who had their own comprehensive files which they made available to me. These personal files, along with correspondence and interview records, are not generally available.
GLOSSARY OF ABBREVIATIONS:

AAC  Australian Agricultural Council
AAHL  Australian Animal Health Laboratory
AAS  Australian Academy of Science
(A)BAH  (Australian) Bureau of Animal Health
ACC  ANAHL Consultative Committee
ACF  Australian Conservation Foundation
ACPPF  Australian Commercial Pig Producers' Federation
ADFF  Australian Dairy Farmers' Federation
AHC  Animal Health Committee
AMRC  Australian Meat Research Council
ANAHL  Australian National Animal Health Laboratory
ANCC  Australian National Cattleman's Council
ANU  Australian National University
APC  Advisory Proposal Committee
ASTEC  Australian Science and Technology Council
AVA  Australian Veterinary Association
BAE  Bureau of Agricultural Economics
BAH  (Australian) Bureau of Animal Health
CCA  Cattle Council of Australia
CSIRO  Commonwealth Scientific and Industrial Research Organisation
CSL  Commonwealth Serum Laboratory
CSVC  Commonwealth-States Veterinary Committee
CVO  Chief Veterinary Officer
DPI  Department of Primary Industry
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Senator Poyser  Mr. Bonnett
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Members of the Advisory Committee on ANAHL (Fenner Committee):

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