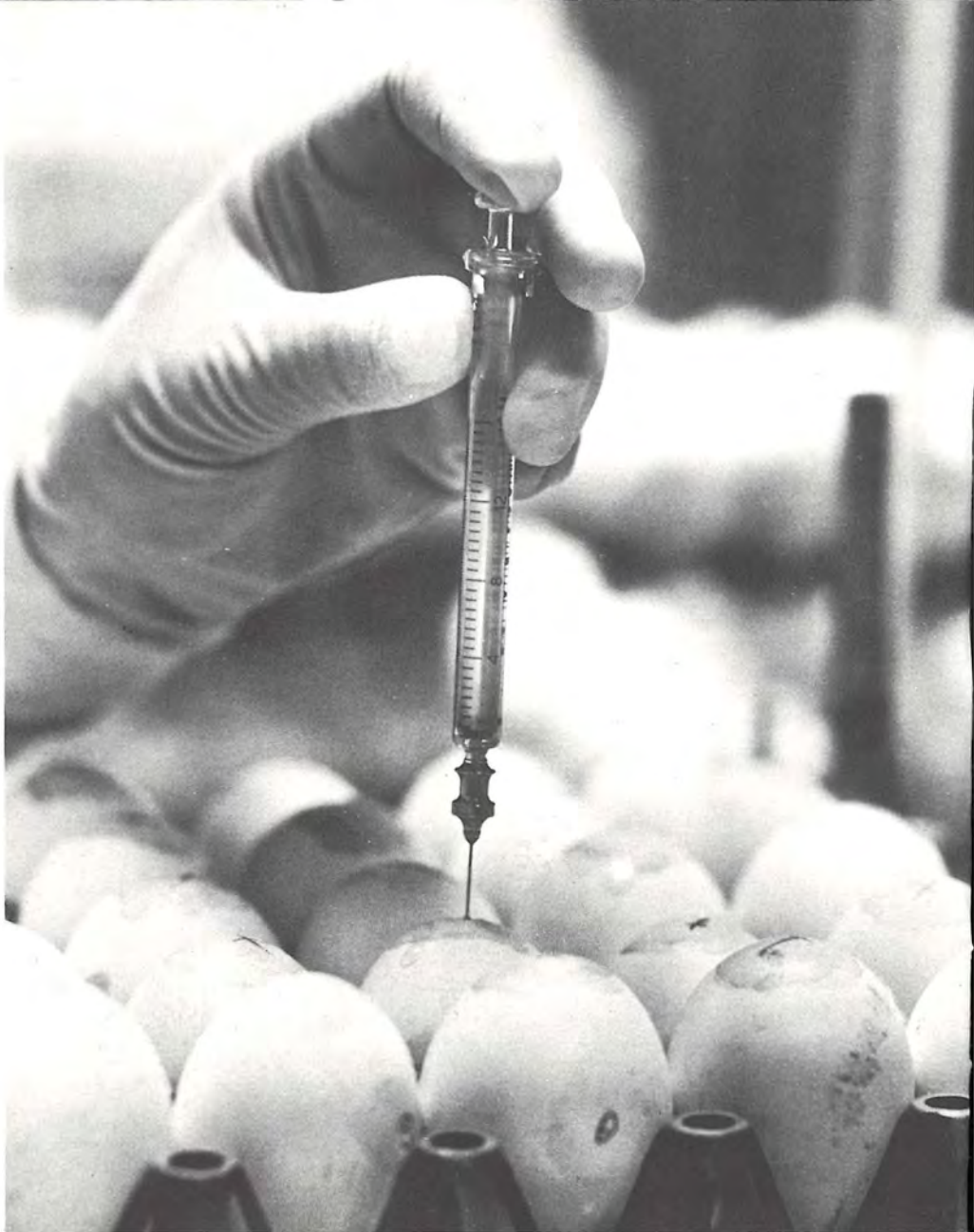
THIS IS CSL

COMMONWEALTH SERUM
LABORATORIES

45 Poplar Road, Parkville,
Victoria, Australia 3052

Cables: "Serums" Melbourne

Live influenza virus injected into hen eggs is the first step in the production of CSL influenza vaccine.



THIS IS CSL ....

The Commonwealth Serum Laboratories is Australia's leading centre for the production and supply of biological products for human and veterinary use.

Located at Parkville, an inner suburb of Melbourne, the capital city of the State of Victoria, CSL's research laboratories and manufacturing and storage buildings now cover most of the 27-acre site granted to CSL in 1918.

Since it was formed by the Australian Federal Government in 1916, as a small unit of the Commonwealth Department of Health to produce wartime emergency supplies of sera and vaccines, CSL has become one of Australia's foremost scientific institutes. The scope and variety of its activities has grown in parallel with the development of medical science.

As one major medical breakthrough followed another during the past half-century, CSL took on the responsibility of making and supplying Australia's requirements for the new weapons against disease — insulins, vaccines, penicillins, human blood fractions, [illegible] and for an ever-increasing range of veterinary biological products needed by Australia's sheep, cattle, pig and poultry industries.

Concurrently with the development of manufacturing facilities, CSL has maintained a constant programme of research to improve existing biological products and to develop new ones.

Biological research into many kinds of human and veterinary disease is carried out. Research covers the fields of bacteriology, biochemistry, immunology and virology.

Being owned by the nation — although since 1961 operating as a Commission independent of direct Government control — CSL assumes the added responsibility of maintaining reserve stocks and a potential capacity to produce all of Australia's essential biological products for human and veterinary use, particularly under defence or emergency conditions.

Within that manufacturing capacity CSL can meet large orders from overseas countries for a wide range of high quality biological products.

THIS IS CSL ....

The Commonwealth Serum Laboratories is Australia's leading centre for the production and supply of biological products for human and veterinary use.

Located at Parkville, an inner suburb of Melbourne, the capital city of the State of Victoria, CSL's research laboratories and manufacturing and storage buildings now cover most of the 27-acre site granted to CSL in 1918.

Since it was formed by the Australian Federal Government in 1916, as a small unit of the Commonwealth Department of Health to produce wartime emergency supplies of sera and vaccines, CSL has become one of Australia's foremost scientific institutes. The scope and variety of its activities has grown in parallel with the development of medical science.

As one major medical breakthrough followed another during the past half-century, CSL took on the responsibility of making and supplying Australia's requirements for the new weapons against disease — insulins, vaccines, penicillins, human blood fractions, BCG and for an ever-increasing range of veterinary biological products needed by Australia's sheep, cattle, pig and poultry industries.

Concurrently with the development of manufacturing facilities, CSL has maintained a constant programme of research to improve existing biological products and to develop new ones.

Biological research into many kinds of human and veterinary disease is carried out. Research covers the fields of bacteriology, biochemistry, immunology and virology.

Being owned by the nation — although since 1961 operating as a Commission independent of direct Government control — CSL assumes the added responsibility of maintaining reserve stocks and a potential capacity to produce all of Australia's essential biological products for human and veterinary use, particularly under defence or emergency conditions.

Within that manufacturing capacity CSL can meet large orders from overseas countries for a wide range of high quality biological products.

.... BETTER THAN A CURE

Preventive aspects of medical and veterinary care have always been an important part of CSL's research and production activities.

Vaccines and toxoids have been prepared for the active immunization of humans against such serious diseases as poliomyelitis, tuberculosis, diphtheria, tetanus, whooping cough, smallpox, typhoid, cholera and influenza. In 1956 CSL successfully produced Salk Inactivated Poliomyelitis Vaccine, which led to the virtual eradication of the disease from Australia. Early in its history (in 1923) CSL was one of four laboratories in the world originally entrusted with the task of preparing insulin on a large scale soon after its isolation by Banting at Toronto University, Canada, and, in 1943, an outstanding achievement was the production by CSL of penicillin in commercial quantities, enabling Australia to become the first country to make penicillin commercially available for civilian use. CSL, with one of the world's most efficient penicillin plants, today exports a significant part of its production to overseas countries.

In veterinary science, CSL has been in the forefront of research into animal and poultry diseases and has developed vaccines and toxoids for active immunization against clostridial infections, brucellosis, bovine mastitis, erysipelas, strangles, canine distemper, hepatitis and many others.

CSL works in close collaboration with Australian teaching hospitals, universities, the National Health and Medical Research Council, the Council for Scientific and Industrial Research, the Australian Red Cross Society, Medical and Veterinary Associations, the various State Departments of Health and Agriculture, and the Commonwealth Department of Health.

Twin 25,000-gal. penicillin fermentation tanks, a landmark at CSL

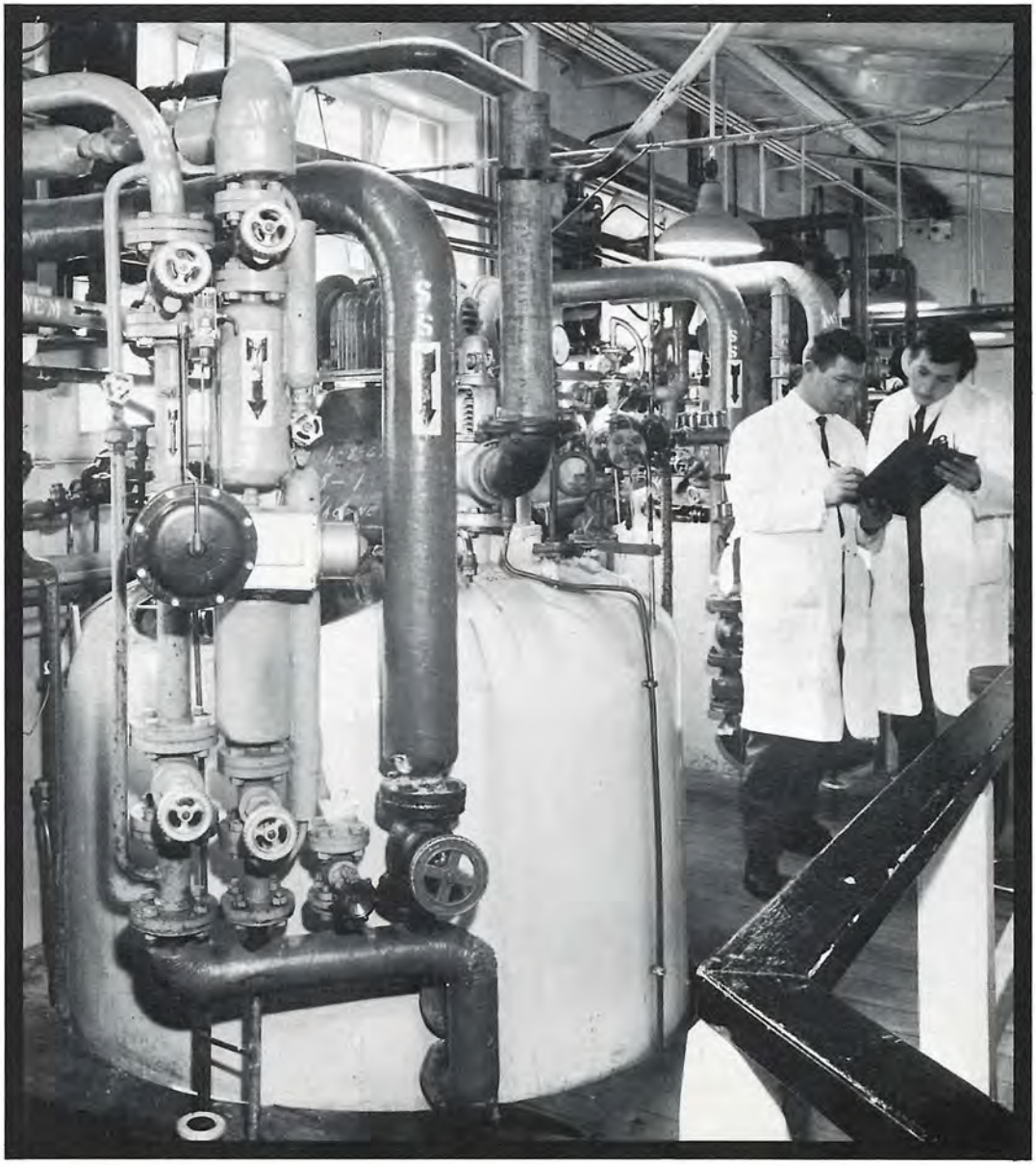
Fermentation plant staff prepare a batch of penicillin medium.

QUALITY CONTROL

To conform to the standards of the British Pharmacopoeia or other appropriate authority, biological and chemical tests are carried out on the raw materials, the intermediate components of a product, and the dispensed batches in CSL's Quality Control Section. The tests supplement and verify the observance of most careful precautions designed to ensure that the products are potent and safe.

Products intended for injection are always prepared under sterile conditions. Representative samples from each batch are tested for freedom from contamination with extraneous micro-organisms.

As an additional safeguard, most inactivated vaccines, toxoids, sera and hormones contain a suitable antiseptic or preservative; this is invariably the case when the final container is sealed so as to permit the withdrawal of successive doses on different occasions. In determining the appropriate expiry date for such products, the persistence of the bactericidal activity of the antiseptic is taken into account.



Veterinary vaccine fermentation tanks.

Round-up time on a large cattle station in Queensland.

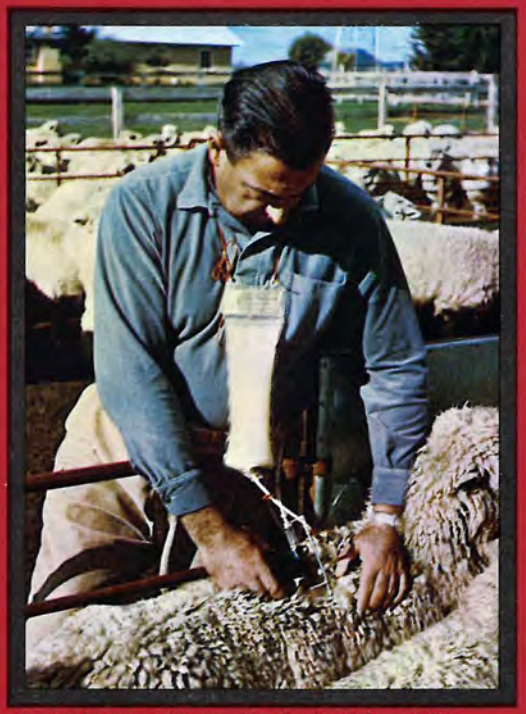
Photo: Douglass Baglin

KEEPING LIVESTOCK HEALTHY

The prevention of disease, a main aim in veterinary medical research, can only be achieved in many cases if suitable biological preparations of high quality are available. Australia, the world's largest wool producer and one of the leading suppliers of dairy produce, has relied heavily for more than 50 years on CSL veterinary products to help maintain the health of its vast livestock population.

The range of CSL veterinary products has been extended progressively to include many bacterial vaccines and diagnostic agents, antibiotics and viral vaccines of special value under Australian conditions.

Veterinary research scientists examine a sheep with footrot. CSL is working to produce, on commercial scale, a sheep footrot vaccine.



A woolgrower injects his flock with a CSL multi-component vaccine to protect against several diseases.

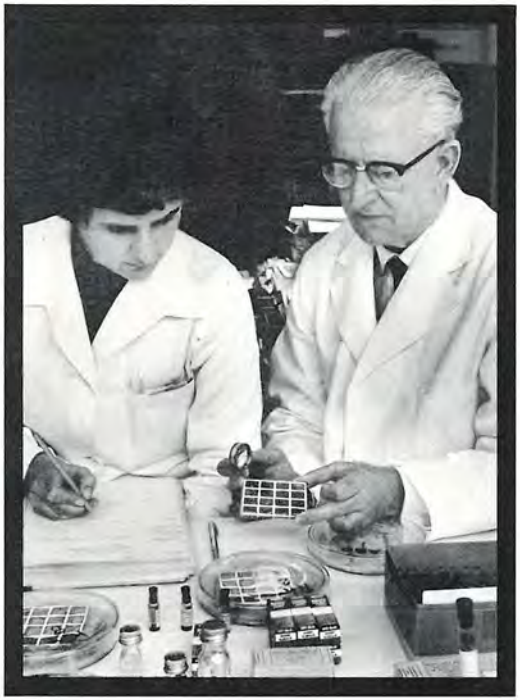
Animal blood donors at the CSL Field Station, Woodend, Victoria.

Because biology is never static, the production of effective biological preparations must be supported by comprehensive research and development. CSL's Veterinary Research Department maintains close checks on the effectiveness of all preparations produced for the Australian stockowner, introduces changes to the preparations when these are necessary to maintain potency and conducts research into the development of new veterinary biological products. Basic and applied research is undertaken in the fields of veterinary virology, bacteriology and immunology. Much research at the Laboratories has been devoted successfully to the development of preparations to combat economically important diseases in sheep and poultry.

CSL maintains a 1,527-acre model farm near Melbourne where the potency and safety of all veterinary preparations are exhaustively field tested before being released for sale.

PEOPLE AT CSL

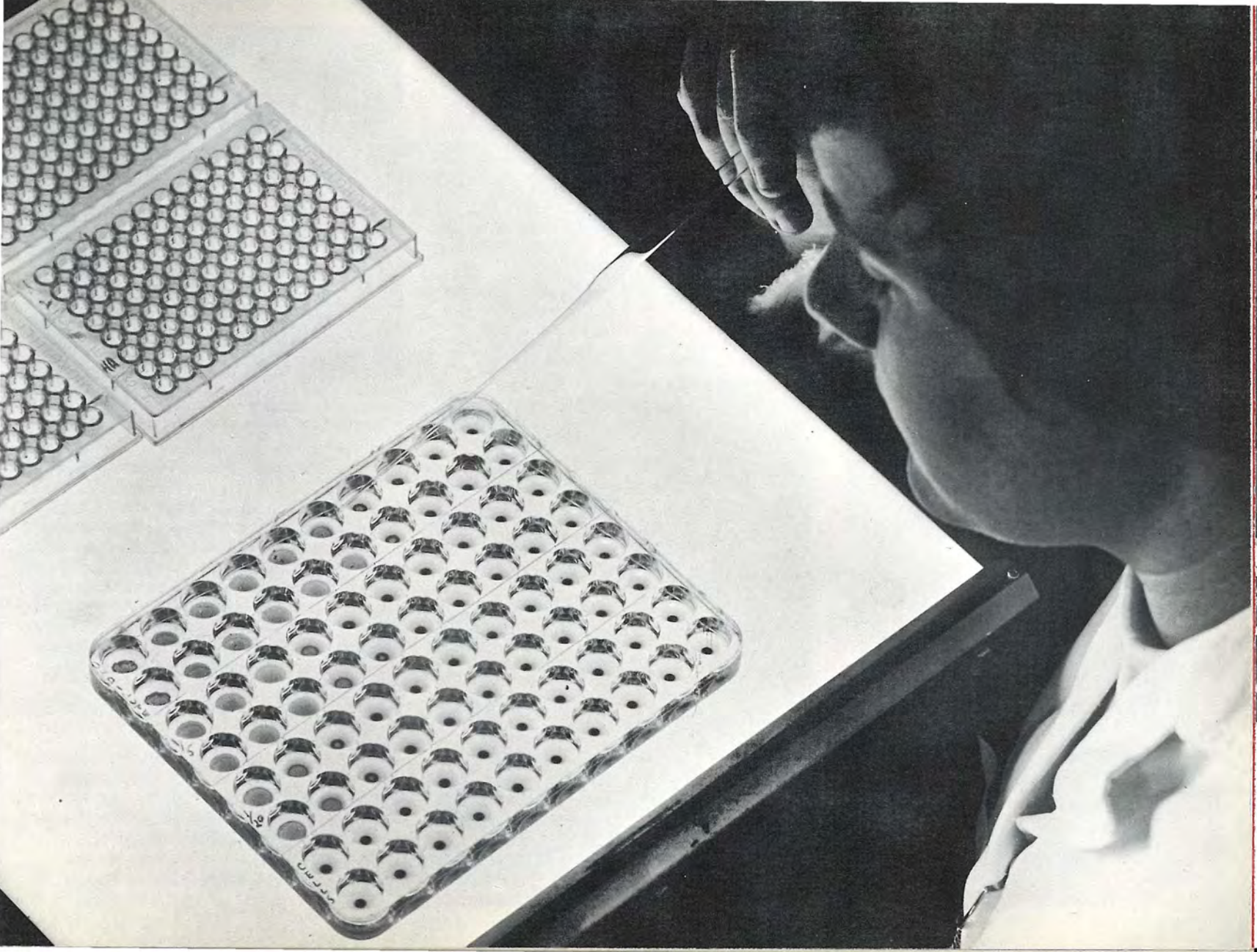
CSL was formed in 1916 with a staff of 35. Now it employs more than 1,000, including medical officers, veterinarians, bacteriologists, virologists, biochemists, chemists, physicists, engineers, accountants, clerical officers, laboratory assistants and skilled tradesmen. Each year the Laboratories take in several graduates for scientific work. Top students are awarded CSL scholarships to enable them to complete their university degrees in one of the appropriate scientific disciplines. Upon graduation they become full-time members of the staff.



Measuring the antibody content of blood samples in the National Blood Group Reference Laboratory at CSL.

Tissue culture growing in tubes in a warm room are inspected regularly.

Titrating antibody levels in serum by the haemagglutination assay method.



PRODUCTION

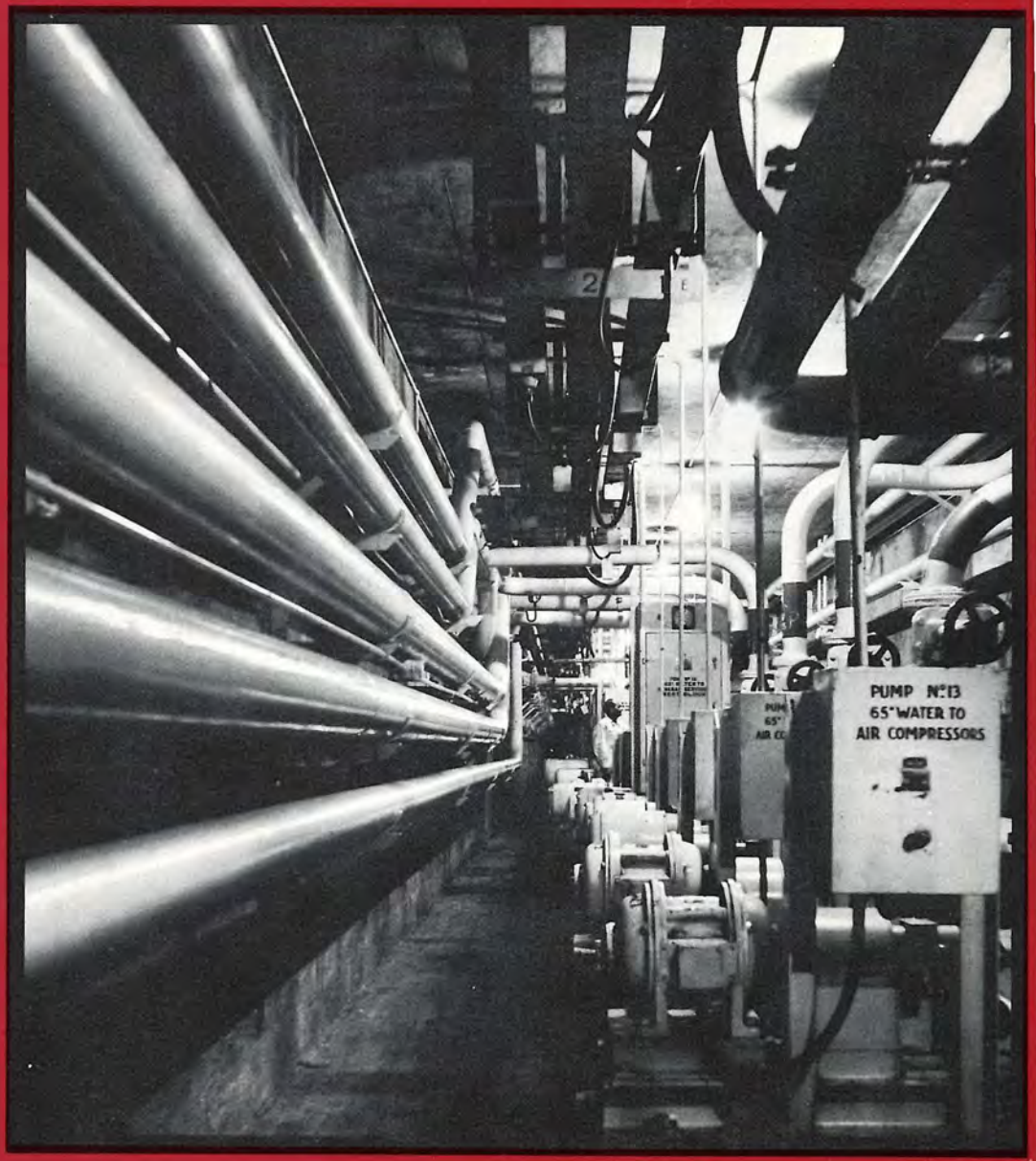
CSL is the chief source in Australia for the supply of the many types of biological agents needed to preserve public health. Large stocks of these products are held for emergency use and are maintained at internationally accepted levels of potency.

CSL production processes range in size from small laboratory bench work to large plant scale and engage the skills of men and women trained in a variety of scientific and other professional disciplines.

More than 500 different products are in simultaneous production during most of the year. The Production Division comprises numerous departments and sections, each responsible for meeting a required volume of output and for the maintenance of a high standard of purity and potency.

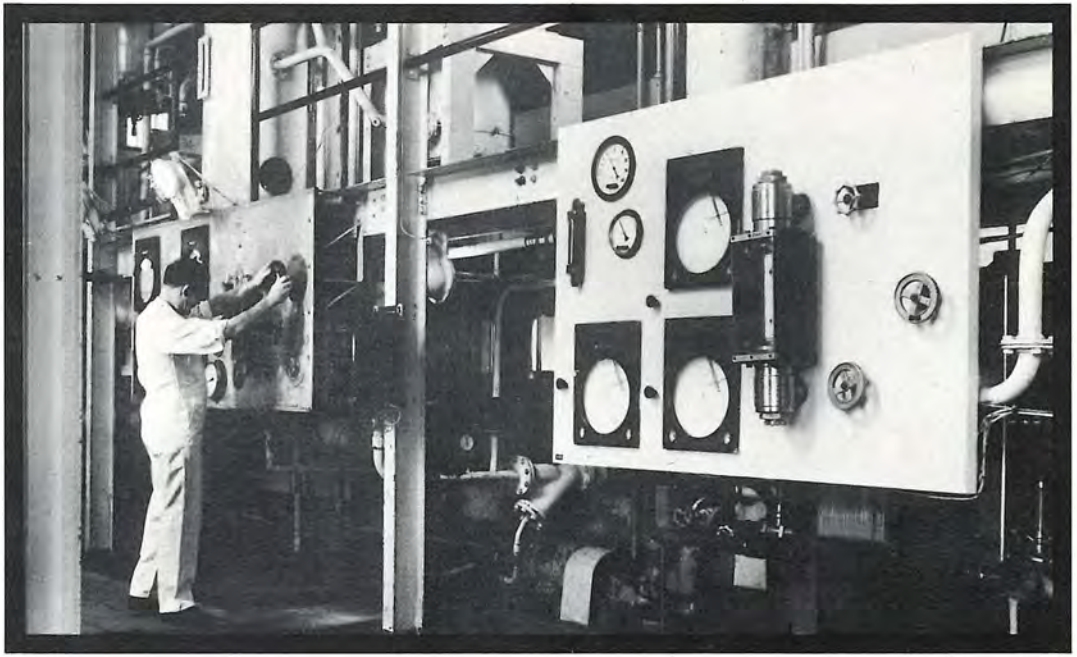
The Antibiotics Section, for example, produces an extensive range of penicillins for human and veterinary use; Biochemistry produces insulins and other endocrine products, allergen extracts and human and animal blood products; from Bacteriology comes vaccines for animal and human use, toxoids, tuberculins and various diagnostic agents.

In the Virology Section a number of living and inactivated viral vaccines are prepared.



Miles of pipes and scores of valves and pumps circulate the cooling water for the penicillin fermentation tanks.

Solvents used in extracting and purifying penicillin are redistilled in this plant.



Millions of capsules are filled with penicillin preparations in this machine each week.

Supporting production, CSL maintains a well-equipped Engineering Division which provides full-scale maintenance for all machinery and equipment and design and development services to assist in the provision of new, specialised equipment to improve production efficiency.

In a large modern Packaging Department, bulk products are dispensed under sterile conditions into smaller containers for subsequent labelling and packaging ready for distribution to hospitals, doctors, veterinarians and pharmaceutical suppliers in Australia and overseas.


CSL

OUR EXPORTS INCREASE TENFOLD

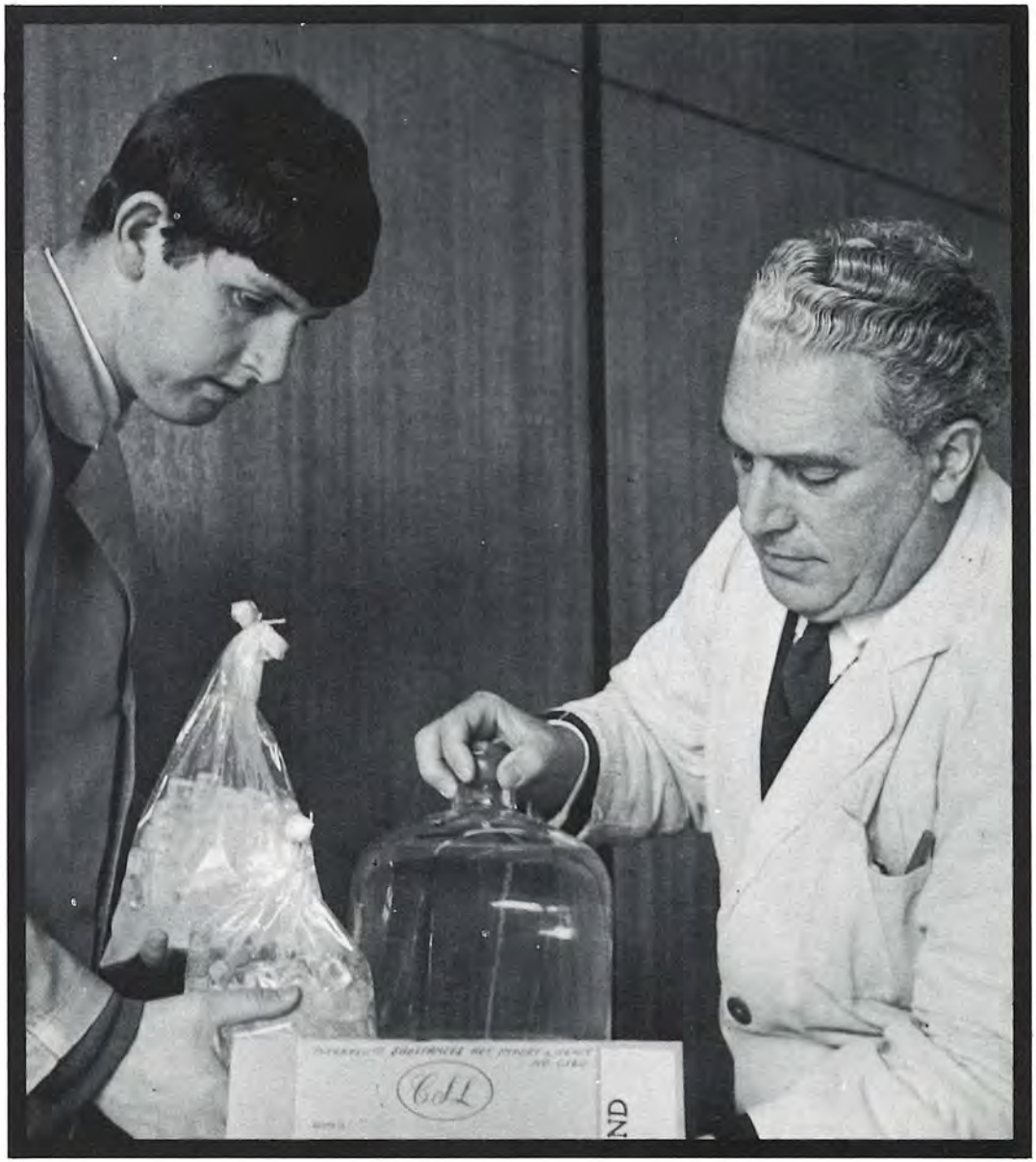
More than one-fifth of CSL's earnings comes from the export sales of penicillins, insulins, vaccines, diagnostic agents and veterinary vaccines and sera.

The main export markets are Great Britain, certain European countries, South Africa, New Guinea, South East Asia and New Zealand, although CSL products are accepted throughout the world for standards of quality, safety and presentation.

The ability to supply the overseas demands for products within the manufacturing range proscribed for CSL has resulted in a steady growth in the Laboratories' export activities. In the five year period to 1970, the total value of CSL goods exported increased tenfold.

This achievement brought recognition from the Export Awards Committee of the Australian Government's Department of Trade and Industry and the Associated Chambers of Manufactures in Australia.

Overseas air transport, linking Australia to most major overseas cities with daily direct or connecting services, is used extensively in the despatch of CSL exports. Most of the goods ordered are required urgently and must travel under full or partial refrigeration, a facility available in modern aircraft.



A bottle containing bulk influenza vaccine is packed with ice bags before being sent by air to Britain. During recurrent influenza epidemics British authorities import emergency vaccine supplies from CSL.

THESE ARE OUR PRODUCTS

Although the word "Serum" is retained in the name of CSL, the production of sera now represents only a part of the Laboratories' total production of biological products. These may be grouped as —

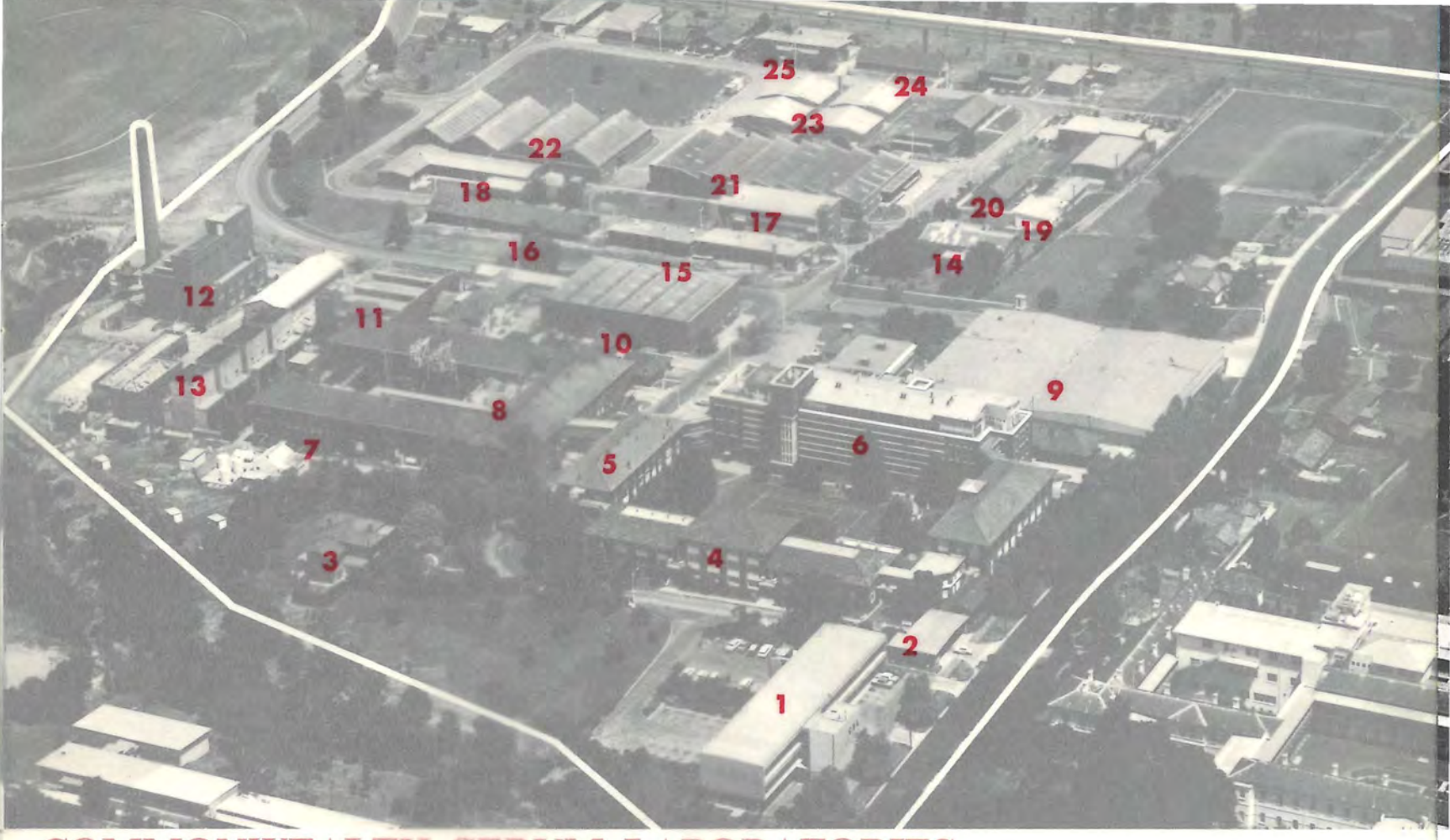
ANTITOXINS such as diphtheria and tetanus antitoxin for the treatment of patients already sick with these diseases.
VACCINES to protect against typhoid, cholera, whooping cough, tuberculosis, smallpox, influenza, poliomyelitis and other diseases.
TOXOIDS to protect against diseases such as diphtheria and tetanus.
EXTRACTS of endocrine glands such as insulin, heparin, A.C.T.H. (adrenocorticotropic hormone) to be used when the patient requires additional quantities of these materials.
ANTIBOTICS, including all forms of penicillin.
ALLERGEN extracts for testing and treating sufferers from hay-fever and other allergic states, such as asthma.
ANTIVENENES to treat persons suffering from the bites of snakes, spiders and venomous marine life.
POOLED human serum and blood fractions, for blood transfusions in cases of shock and for very sick people, or for persons whose blood is deficient in certain fractions.
DIAGNOSTIC agents for use in hospitals and medical clinics to assist in determining the cause of a patient's illness.
VACCINES for the prevention of diseases in animals and poultry.

CSL influenza vaccine is supplied in both single-dose and multi-dose containers.

A hospital's order for various insulins is prepared for packaging and despatch.

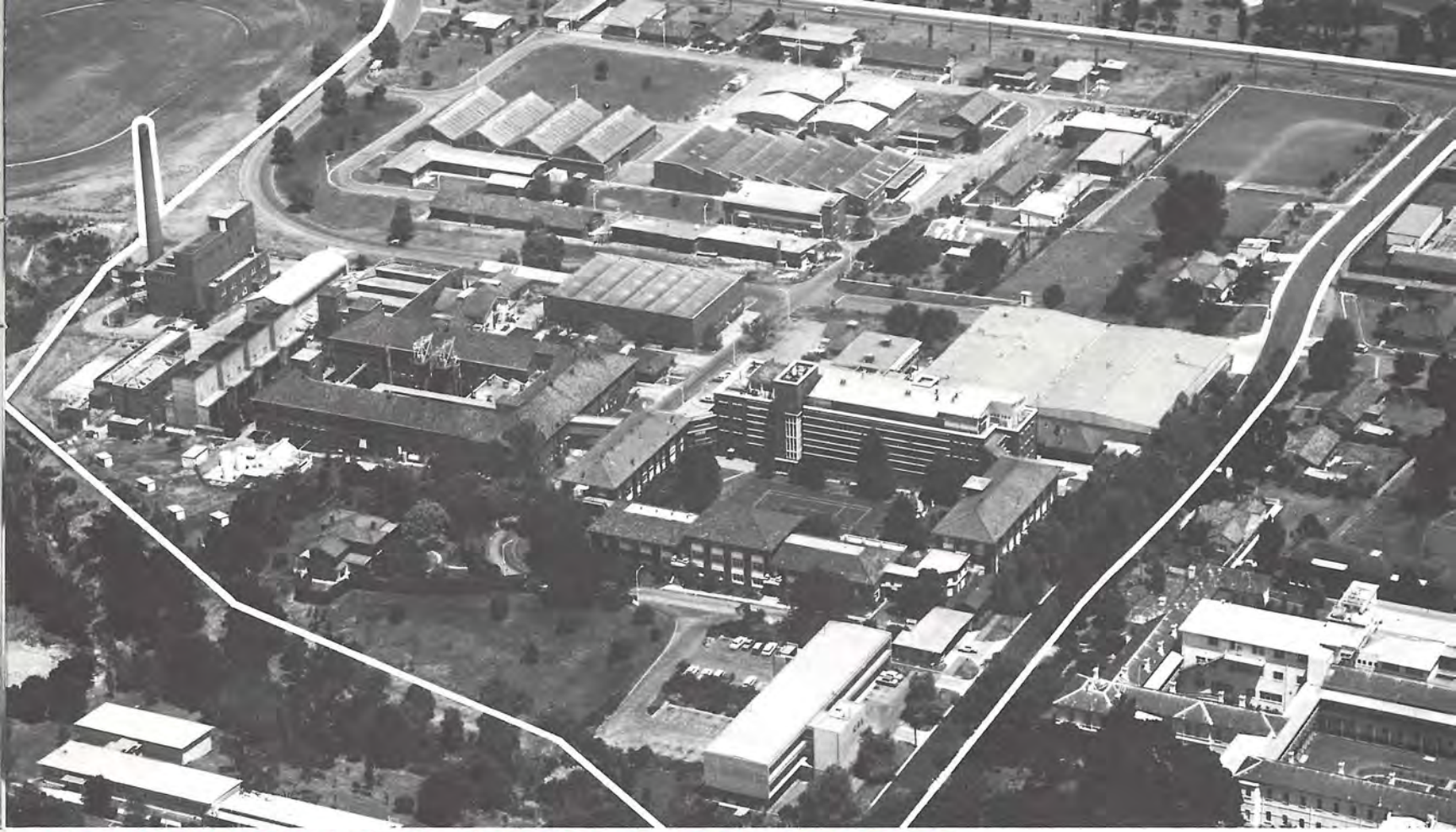
Veterinary vaccines on display at a reseller's store.

Administrative block, Commonwealth Serum Laboratories, Melbourne.



COMMONWEALTH SERUM LABORATORIES

1. Administration Block.
2. Main Entrance — Poplar Road.
3. National Blood Group Reference Laboratory.
4. Vaccines and Media Production.
5. Bacteriological Research.
6. Blood Fractionation and Immunology Research Laboratories.
7. Virus Assay Laboratory.
8. Penicillin Production.
9. Dispensing and Packaging Building.
10. Engineering Workshops.
11. Compressor House.
12. Boiler House.
13. Water Cooling Plant.
14. BCG Vaccine Laboratory.
15. Virus Research Laboratories.
16. Influenza Virus Production.
17. Experimental Animals Building.
18. Veterinary Virus Research Laboratories.
19. Allergen Laboratory.
20. Tetanus Vaccine Production.
21. General Store No. 1.
22. General Store No. 2.
23. Small Animals.
24. Smallpox Laboratory.
25. Monkey Holding Compound.



COMMONWEALTH SERUM LABORATORIES

1. Administration Block.
2. Main Entrance — Poplar Road.
3. National Blood Group Reference Laboratory.
4. Vaccines and Media Production.
5. Bacteriological Research.
6. Blood Fractionation and Immunology Research Laboratories.
7. Virus Assay Laboratory.
8. Penicillin Production.
9. Dispensing and Packaging Building.
10. Engineering Workshops.
11. Compressor House.
12. Boiler House.
13. Water Cooling Plant.
14. BCG Vaccine Laboratory.
15. Virus Research Laboratories.
16. Influenza Virus Production.
17. Experimental Animals Building.
18. Veterinary Virus Research Laboratories.
19. Allergen Laboratory.
20. Tetanus Vaccine Production.
21. General Store No. 1.
22. General Store No. 2.
23. Small Animals.
24. Smallpox Laboratory.
25. Monkey Holding Compound.

PRODUCED BY JOHN VEITCH ASSOCIATES
DESIGNED AND PRINTED BY THE CRAFTSMAN PRESS PTY. LTD., MELBOURNE