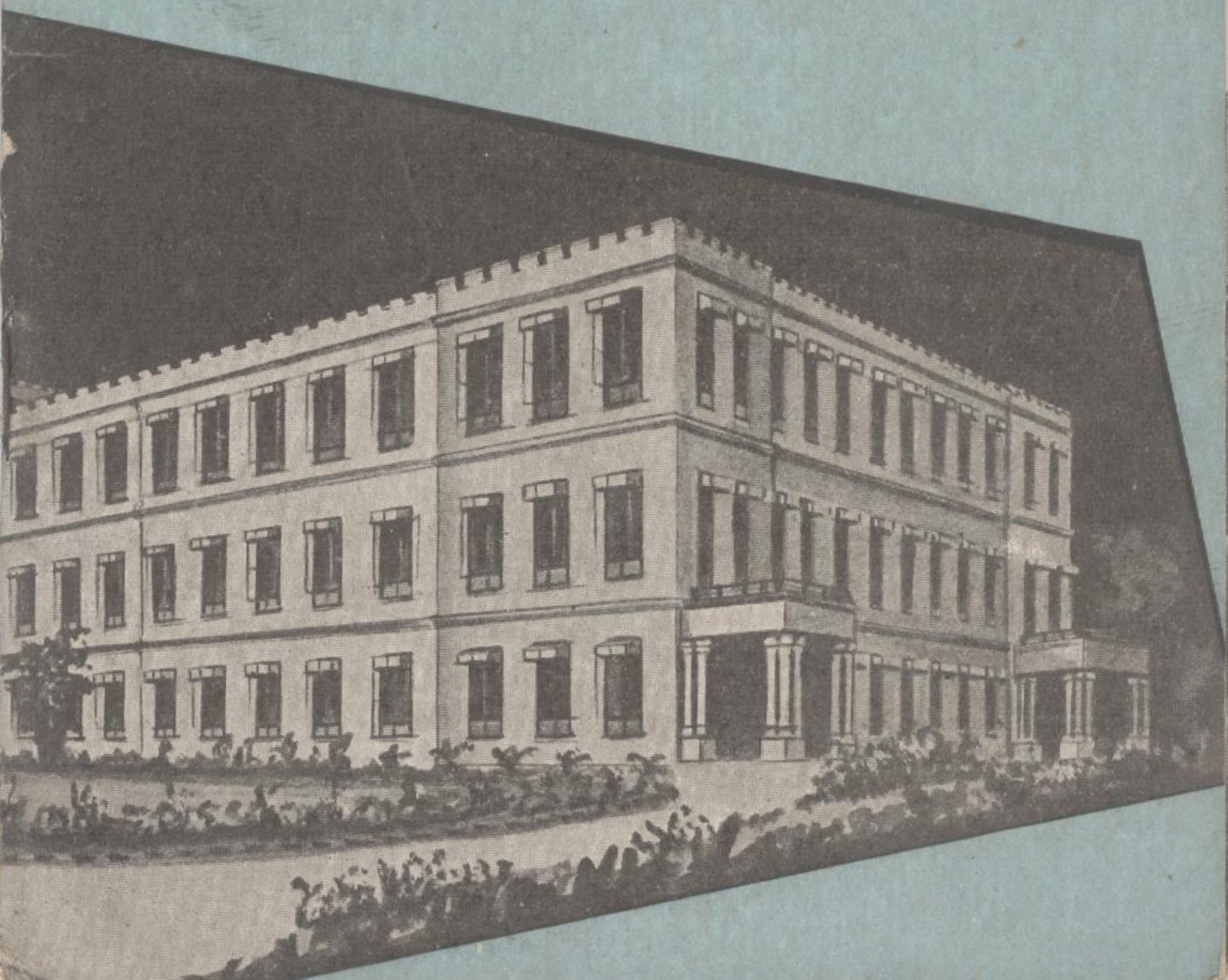




HAFFKINE

INSTITUTE





Dr. Haffkine

A Biographical Note

Dr. Waldemar Mordecai Wolff Haffkine, born on 16th March 1860, was a son of Jewish parents settled in Odessa, Russia. Haffkine got his education at the University of Odessa and there he earned his Doctorate specializing in Zoology.

He migrated first to Switzerland and later to France where he met renowned Louis Pasteur at Paris. He became his devout disciple and successfully developed a vaccine against cholera. Haffkine wanted to test the efficacy of his vaccine and this mission brought him to India in 1893.

At first, he popularized his vaccine against cholera, but later, he came to Bombay to combat plague. He developed a very effective vaccine against plague and his efforts brought Haffkine Institute into existence, where he served as Director for a number of years.

The Government, on his retirement, awarded him "C. I. E." in recognition of his services to humanity. On 26th October, 1930, this great Scientist and humanitarian passed away.

HAFFKINE INSTITUTE

—Where Science Fights Death.

HEALTH of the Nation is one of the most important responsibilities of a Social Welfare State. India's half-starved, poverty-stricken teeming millions constitute a special health problem. More and more remedies are required to cope up with and eliminate disease.

Eversince Waldemar Mordecai Haffkine produced the first plague vaccine in 1897, in addition to Medical Research, Haffkine Institute is committed to the obligation of making available life-saving biologicals and drugs—standard in quality, economical in price. Devoted to this objective, Haffkine Institute, in its life of 60 years, has accepted many challenges created by wars, epidemics, floods and famines and met them successfully. Vaccines, sera, blood plasma, intravenous solutions, diagnostic reagents, vitamins and sulpha products are being supplied in increasing quantities in this country as well as overseas.

In January, 1959, the Institute celebrates its Diamond Jubilee, when it will rededicate itself to the cause of Medical Research and production of life-saving biologicals.

HAFFKINE INSTITUTE,
Parel, Bombay-12.

Tele— { grams—"Research"
 { phone—61614/5/6

INSTITUTE AND ITS ACTIVITY

HAFFKINE Institute, which will complete next year, 60 years of its eventful career in the cause of service to humanity, is the biggest research institution of its kind, not only in India, but also in the East. The building and the site where it stands have a very historical background. It's here that once stood the temple of Parli-Vaijnath in olden times. By 1678, during the Portuguese regime, a monastery and a Chapel managed by Jesuits flourished at this site. Later on, the British selected it as a residence for the Governors of Bombay. In 1896, when plague broke out in an epidemic form in Bombay, this abandoned building served as an emergency hospital, which eventually became "Haffkine Institute".

A young Russian Scientist, Waldemar Mordecai Wolff Haffkine came to Bengal (Calcutta) in 1893 to try his anti-cholera vaccine. At the time he came, plague broke out in India and the Government invited him to investigate into the cause of plague epidemic and, if possible, to combat it by preparing a prophylactic vaccine against it. This brilliant student of Louis Pasteur, with years of experience in the preparation of cholera vaccine, moved into this building in 1899 to lay the foundation of the Plague Research Laboratory, in which some of the most fundamental researches in plague epidemiology and plague prophylaxis were conducted.

With the growing importance of bacteriological work in the diagnosis and treatment of tropical diseases, the laboratory was further expanded. It undertook investigation of other infectious diseases besides plague. To indicate this significant expansion of its activities, the laboratory was renamed in 1906 as the "Bombay Bacteriological Laboratory". In 1925, the laboratory was rightly named as the Haffkine Institute to celebrate the name of its Founder, whose inspiration and work resulted in enormous benefits to the mankind and to the people of this country in particular.

The Institute comprises of many departments and sections, some of which are :

1. Department of Vaccines;
2. Department of Antitoxins & Sera;
3. Department of Virus Diseases including Rabies;
4. Department of Pharmacology;
5. Department of Clinical Pathology;
6. Department of Biochemistry;
7. Department of Entomology;
8. Blood Bank;
9. Department of Chemotherapy;
10. Media and Parenteral Solutions Section;
11. Animal House.

The Institute has, on its technical staff, more than 100 scientists and over 520 persons as subordinate staff. The Director is aided by eight Assistant Directors.

Patents Enquiry Committee in session at Haffkine Institute in 1948. The Committee's recommendations resulted in amendment of the Patent Law in the country.

From left to right: Mr. S. P. Sen, Bengal Chemicals, Calcutta; Major-General S. S. Sokhey, Director, Haffkine Institute, Bombay; Bakshi Sir Tek Chand, Chairman of the Committee; Dewan Bahadur K. Rama Pai, Secretary of the Committee; Mr. N. Barwell, Barrister, Calcutta and Sir Gurnath Bewoor, Tata Industries, Ltd.



The Institute's main functions are :

- (1) Medical Research,
- (2) Training of Research Workers,
- (3) Supply of Vital Biologicals, and
- (4) Diagnostic Aids to Medical Profession.

The Institute is run by the Government of Bombay and collaborates actively with National and International Organisations, such as, Indian Council of Medical Research, World Health Organisation, Rockefeller Foundation, etc. in the field of Medical Research.

VARIOUS DEPARTMENTS AND SECTIONS

Department of Vaccines

WHEREAS the production and supply of plague vaccine all over the nation has been the main activity of this Institute almost from the day of its inception to date, it also has undertaken since 1934 the preparation of other anti-bacterial vaccines, particularly the cholera vaccine and the T. A. B. (Typhoid) Vaccine, on a large scale. The Vaccine Department is exploring the field of fundamental research on bacterial variation, bacterial dissociation, immunogenic structure, antigen-antibody reactions, biological standardisation of vaccines and agglutinable suspensions and such other related fields of research. The students are trained by this department for post-graduate degrees in medical sciences and micro-biology. Besides, under the Second Five Year Plan, it has committed itself to the work of preparing, in conjunction with the Department of Antitoxins and Sera, Triple vaccine for combined immunization against Diphtheria, Tetanus and Whooping Cough. Added to this, the department also gives diagnostic aid in regard to plague.

The Vaccine Department collaborates with the Plague

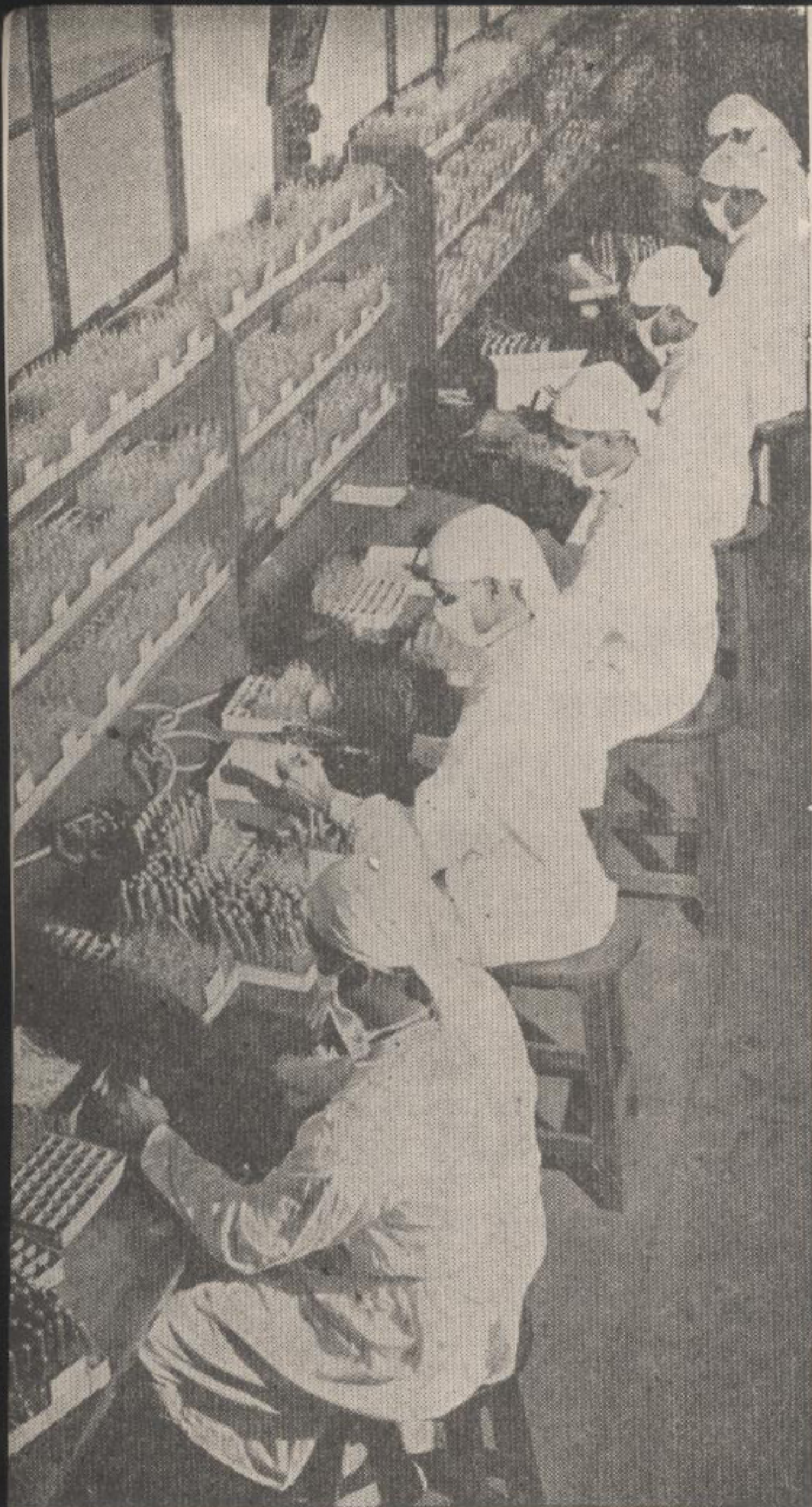
Advisory Committee of the Indian Council of Medical Research in researches on plague and with the World Health Organization in standardisation of cholera vaccine. The department also works in collaboration with other vaccine production centres in the country in designing methods of testing the potency of prophylactic vaccines and for establishment of standards for the drug rules.

Department of Antitoxins and Sera

The Department of Antitoxins and Sera, set up in 1940, has continued to grow and had to establish a subsidiary horse-farm at Pimpri to accommodate about 200 horses that are being maintained for the production of anti-venin, anti-tetanus, anti-diphtheria, anti-gas-gangrene and a number of other sera. Polyvalent Antivenin against snake-bites is specially prepared in a lyophilised (dried) form to avoid cold storage facilities. This is effective against all the four common varieties of poisonous snakes in India, namely: Cobra, Russell's Viper, Krait

Vaccine manufacture—Inoculation of the Haffkine Flask with seed-culture of Cholera.





Vaccine manufacture—Flame-sealing of filled ampoules.

and Saw-scaled Viper. The department also makes studies on venom fractions.

This department conducts research on immunology and has mainly a biochemical approach to the problems of micro-biology and bacteriology by means of electrophoretic, chromatographic, gel diffusion and other techniques. It has also started preparing Hyperimmune Rabies Serum for trials in the treatment of dog-bite cases where mere treatment with

anti-rabic vaccine is not effective.

Department of Virus Diseases including Rabies

Department of Virus Diseases was started in 1923, and prepares antirabic vaccine for the treatment of dog-bite cases both for medical and veterinary purposes and meets the entire needs of the Bombay State and the other neighbouring States by supplying the antirabic vaccine to about 215 centres. It concentrates on the researches on Avianized Vaccine, Hyperimmune Rabies Serum, Adeno Viruses and Influenza Vaccine. This department also serves as a laboratory for an influenza centre in India in the network of the W. H. O. Laboratories attached to the World Influenza Centre, London.

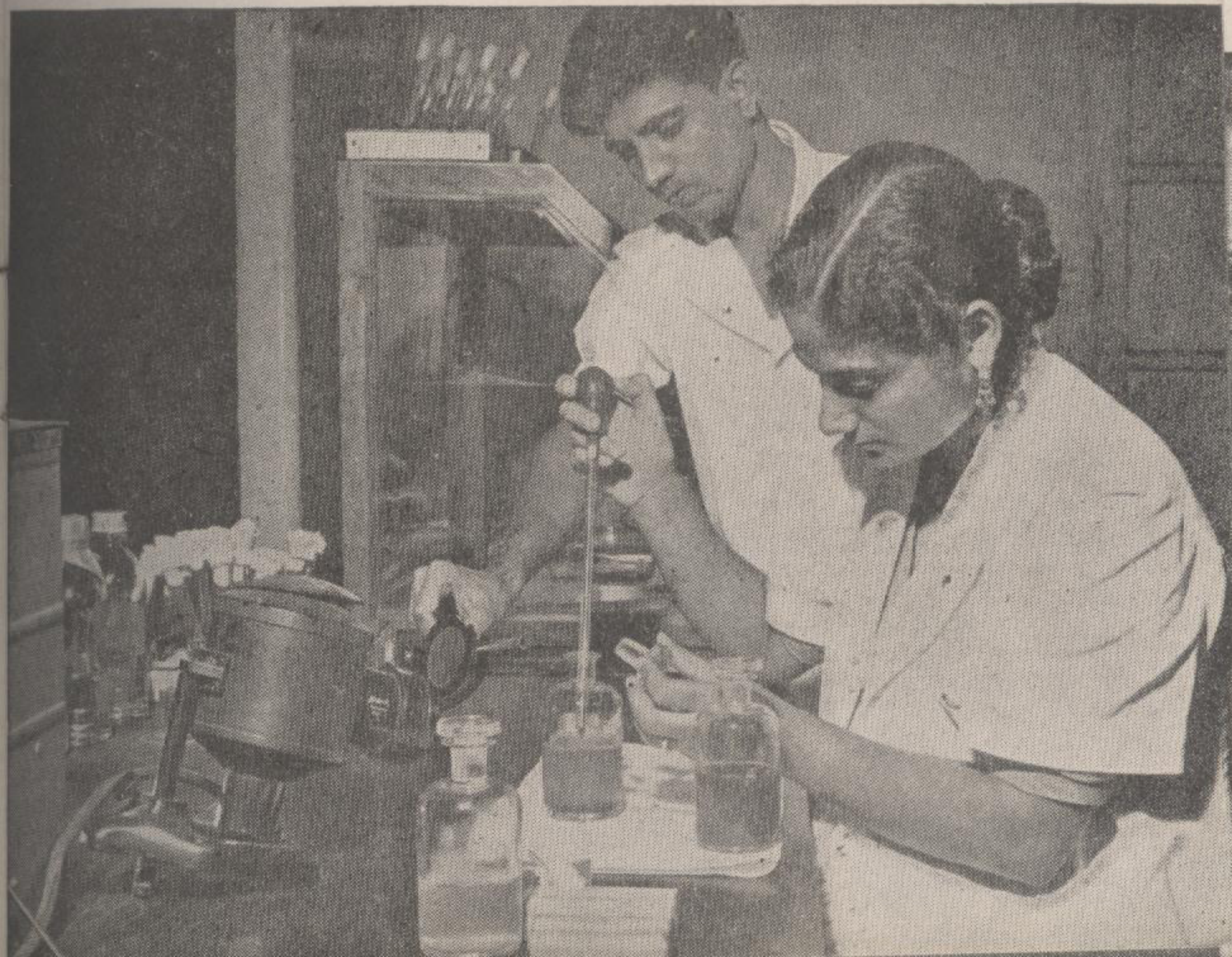
Department of Pharmacology

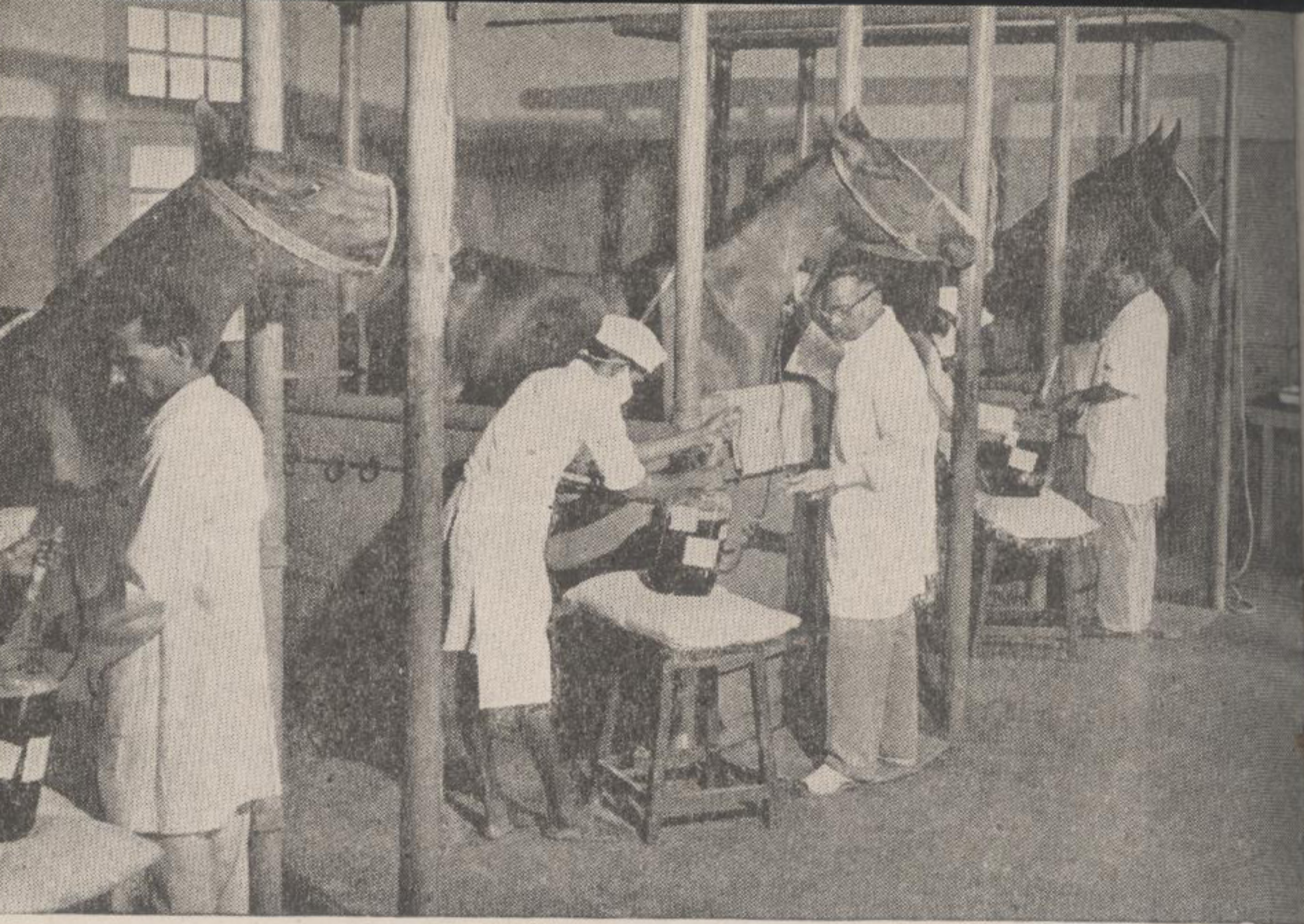
The Department of Pharmacology has been recently equipped to function as the Drug Testing Laboratory for the implementation of the Drugs Act for Bombay State as also for some other States for ensuring purity and adequate standards of the products. The Assistant Director in charge of the department acts as State Analyst to the Government of Bombay with independent functions. The department concentrates on evolving new techniques and methods for testing drugs. Besides, it trains personnel for drug testing and analyses from other States. The department coaches students in Pharmacology for research degrees. Lastly, it carries out researches on indigenous drugs in co-operation with the Indian Council of Medical Research.

Department of Clinical Pathology

Department of Clinical Pathology performs laboratory tests to diagnose pathological conditions and infectious

Research on development of Influenza Vaccine.





Serum manufacture—Immunized horse being bled.

diseases, such as plague, cholera, typhoid, dysentery, diphtheria and meningitis. Tests for infectious diseases are done free of charge and laboratory facilities for prompt diagnosis of infectious diseases are available to medical practitioners.

The department acts as a State Laboratory and offers help in diagnostic fields to the hospitals of Bombay State. It is also a Reference Laboratory in regard to serological tests for syphilis in this State. It collaborates in medical research with the city hospitals. A section of this department deals with production of supplies of biological reagents needed for diagnostic laboratories in the State. Disinfectants, germicides and similar products manufactured by commercial firms are tested in this department to find out their actual germicidal value and to help them maintain a proper standard of quality.

Biochemistry Section

The Institute offers facilities of clinical bio-chemical analyses of the specimens received from the city hospitals

and medical practitioners. Majority of the samples pertain to higher type of diagnostic work. It also undertakes research in clinical biochemistry and development of better analytical techniques. This section also collaborates in the teaching and training programme of the Clinical Pathology Department of this Institute.

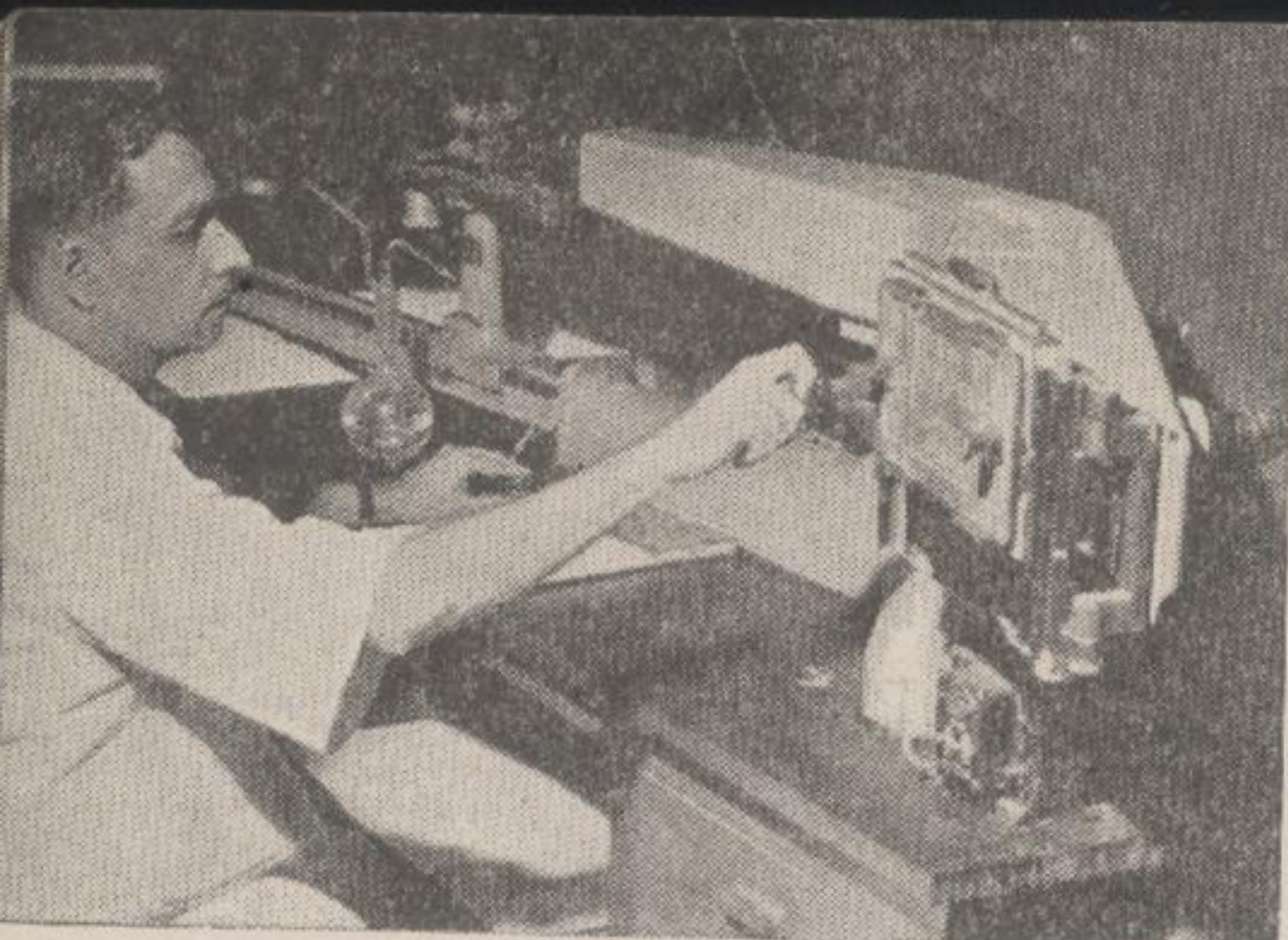
Department of Entomology

The Department of Entomology makes intensive study mainly of plague epidemiology with reference to fleas and rats.

The department maintains four types of poisonous snakes to collect venoms. These venoms are made available to Serum Department and other laboratories for antivenin manufacture, biochemical researches and therapeutic purposes. An open-air snake farm has been recently constructed for rearing snakes in their natural surroundings. Thorough researches are done to study

Biochemical research—Studies in the bacterial metabolism.





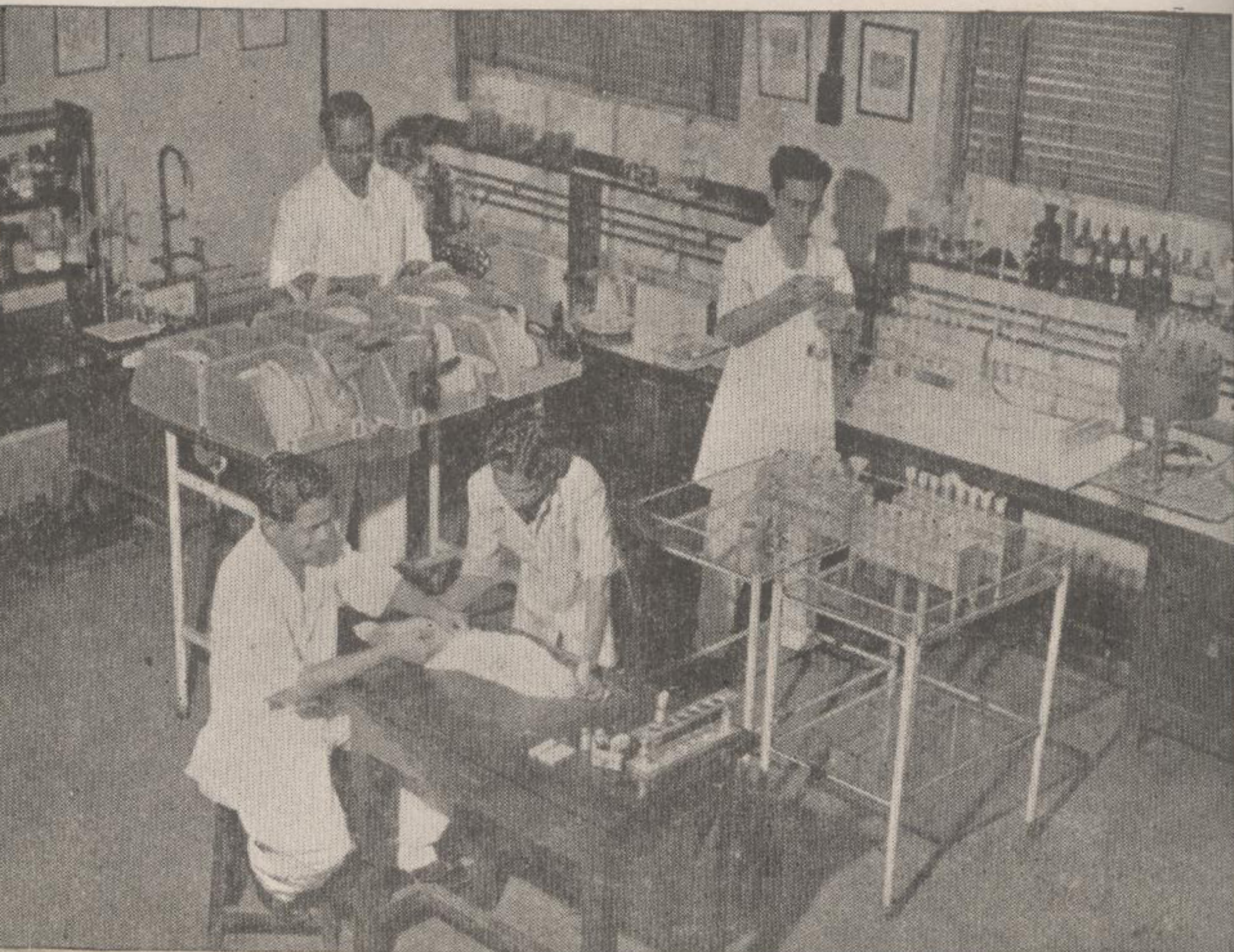
Spectrographic analysis of drugs carried out in the Pharmacology Department.

the natural habits of snakes to facilitate their proper rearing. Under the Second Five Year Plan, the department has to supply venoms in large quantities to meet an increasing demand.

A Rat Unit has been set up for studying rat population and the state of their infectivity in Bombay as a measure to prevent plague. The unit, which works in collaboration with the Bombay Municipal Corporation, supplies information of epidemiological value.

The department helps the testing of insecticides and carries out field trials for research. Lastly, classes are

Biological Standardisation—Insulin testing in the Pharmacology Department.



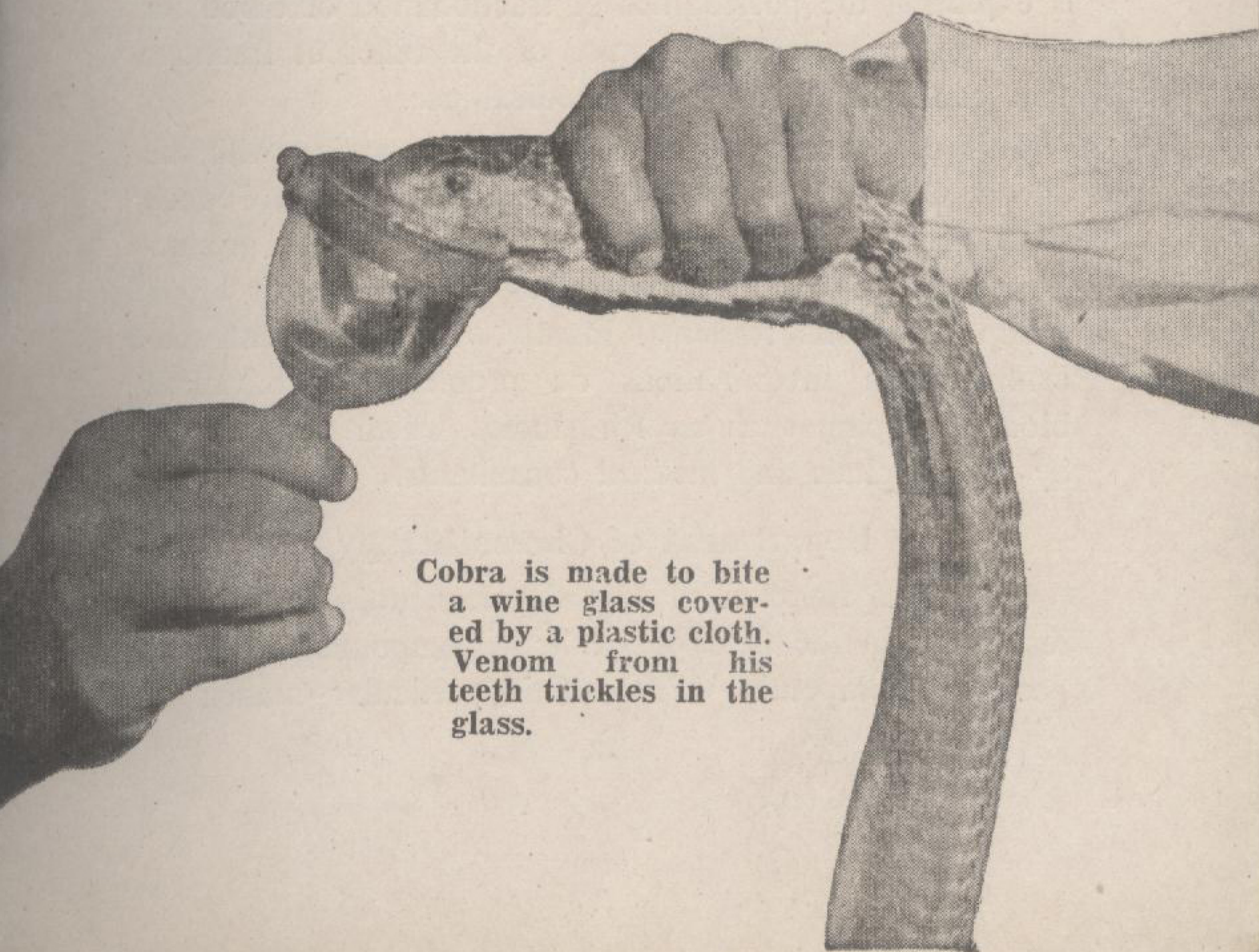
Handling of a snake before venom extraction requires considerable skill and experience.



conducted for epidemiological workers in Plague Control Measures.

Blood Bank

This department got organised in 1942 during the time of World War II for collecting human blood and to process it for therapeutic purposes. As the whole blood cannot be preserved for any length of time, the process of freeze-drying of the blood plasma was investi-



Cobra is made to bite a wine glass covered by a plastic cloth. Venom from his teeth trickles in the glass.



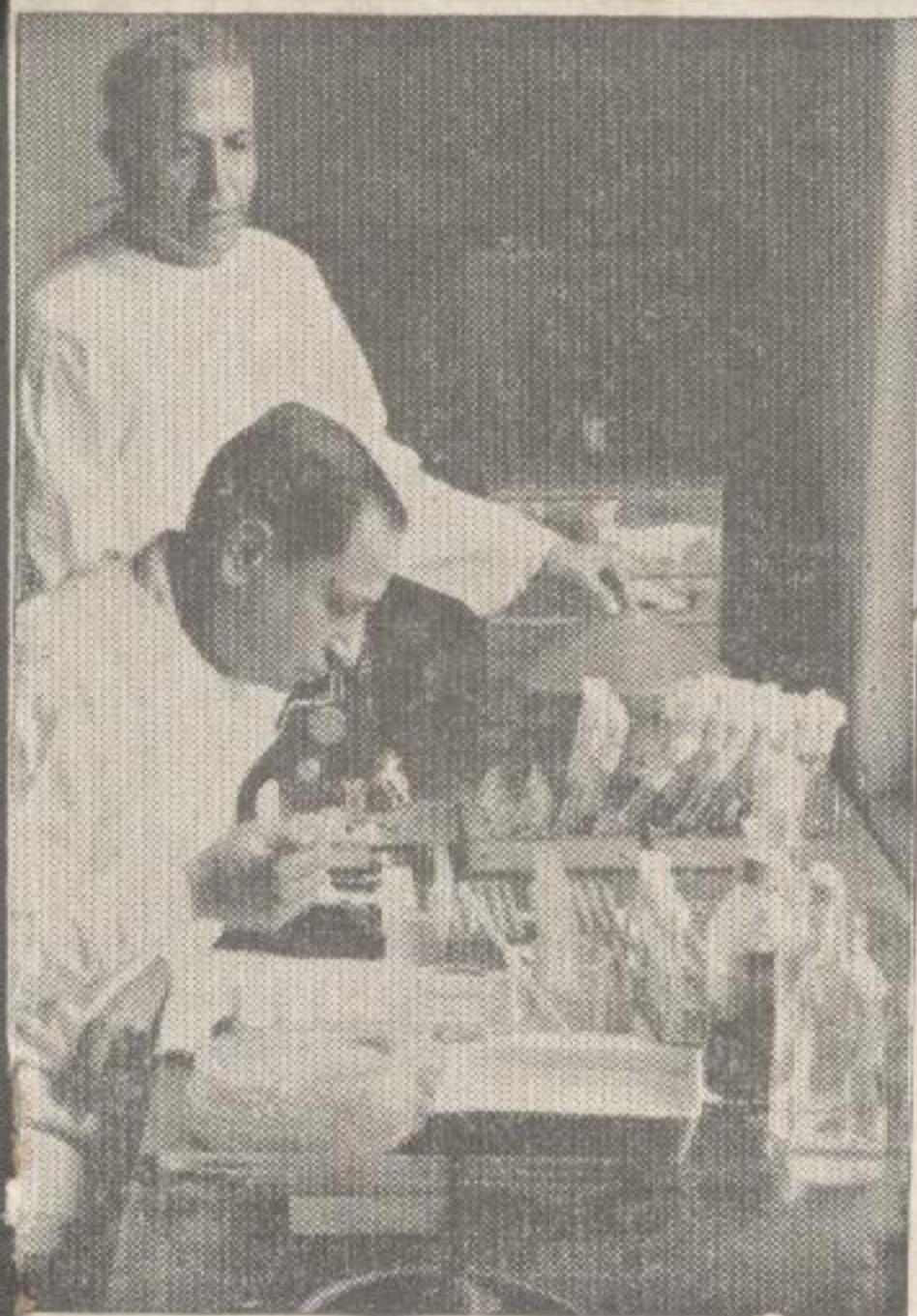
Freeze-dried human blood plasma bottles being removed from vacuum chamber.

gated by the department and, by 1943, a plant for the processing of the blood plasma was locally designed and got fabricated and put into operation. A new much bigger plant with a capacity of 75 litres, first of its kind in India, was installed in 1950. At present, the Department is exploring the possibilities of fractionation of blood for making the most efficient use of the different fractions that could be obtained for medical use.

This department works in close co-operation with the Blood Group Reference Centre of the Indian Council of Medical Research in the standardisation and production of blood grouping and typing sera and other blood group diagnostic reagents. Finally, the department concentrates on investigations on problems of advanced blood grouping such as Rh studies which are referred by the hospitals and medical consultants.

Department of Chemotherapy

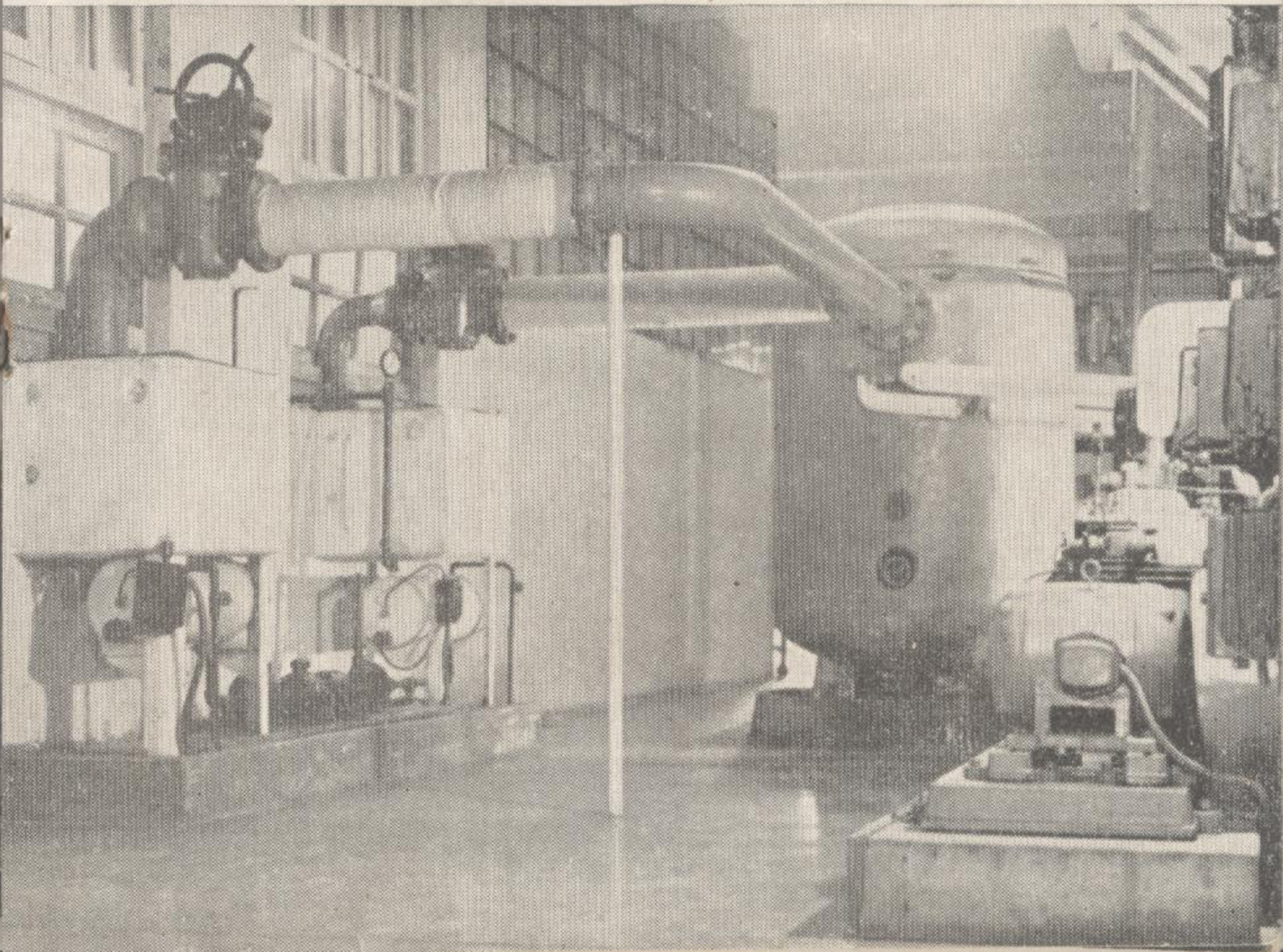
The chief function of this department is to conduct researches in the field of synthetic compounds for their possible therapeutic value. This particular branch of



**Grouping of blood in the
Blood Bank for medico-
legal purposes.**

medicine has achieved important results in recent years and promises to lead the way towards the treatment of maladies for which at present there are no adequate remedies. Besides, the department investigates into the possibility of manufacturing important life-saving drugs such as sulphas, antitubercular drugs and such others under local conditions. Various methods for economical and commercially feasible manufacture of these drugs are examined on a pilot plant scale. The department also makes the utmost use of facilities provided by the pilot plant to manufacture, on a limited scale, several vitamin, sulpha drugs and allied preparations. Thus, efforts are made to meet the requirements of hospitals, dispensaries and partial needs

**Freeze-drying equipment for the processing of blood
plasma.**



1959

THE DIAMOND JUBILEE YEAR

1957

Production of Influenza Vaccine.

1955

Inducing of Experimental Cholera in Rabbits.

1953

Putting on organised basis the Institute's Snake Fa

1952

Establishment of W.H.O. Influenza Centre.

1945

Introduction of Lyophilised Polyvalent Anti
Introduction of an improved Cholera Vaccine
Liquid Medium facilitating mass and economic
Establishment of the Blood Bank Section

1943

Introduction of Lyophilised Blood Plasma

1942

Development of improved Plague Vaccine
Casein Hydrolysate Liquid Medium

1940

Establishment of the Department of Bacteriology
Establishment of the Department of Pathology

1938

Establishment of the Department of Physiology

1925

Renaming of the Institute

1923

Establishment of the Department of Microbiology
Establishment of the Department of Biochemistry

1922

Establishment of the Department of Pharmacology
including the Department of Therapeutics
Introduction of the Department of Hygiene

1906

1905

1895



Production of Plague Vaccine in the early years

H A F F K I N E
In Step With Medicine

E A R

arm.

Anti-snake Venom Serum (Antivenin).
Vaccine in Casein Hydrolysate
Industrial production.

on.

Plasma.

Plague Vaccine grown in
medium.

Department of Antitoxins and Sera.

Department of Chemotherapy.

Department of Entomology.

Laboratory as "Haffkine Institute"

Department of Pharmacology.

Department of Biochemistry.

Establishment of Department of Virus Diseases
Including Rabies.

Production of Antirabic Vaccine.

Expansion of Laboratory and its renaming "Bombay
Bacteriological Laboratory"

Establishment of the Department of Clinical Pathology.

—(10th August)—Foundation of Plague Research
Laboratory in the present building with
Haffkine as Director-in-chief.

—(10th January)—Fruits of Medical Research realised.
Haffkine took the first Plague Injection himself.

The Seed of Medical Research in India was sown
with the breaking out of Plague in Bombay.



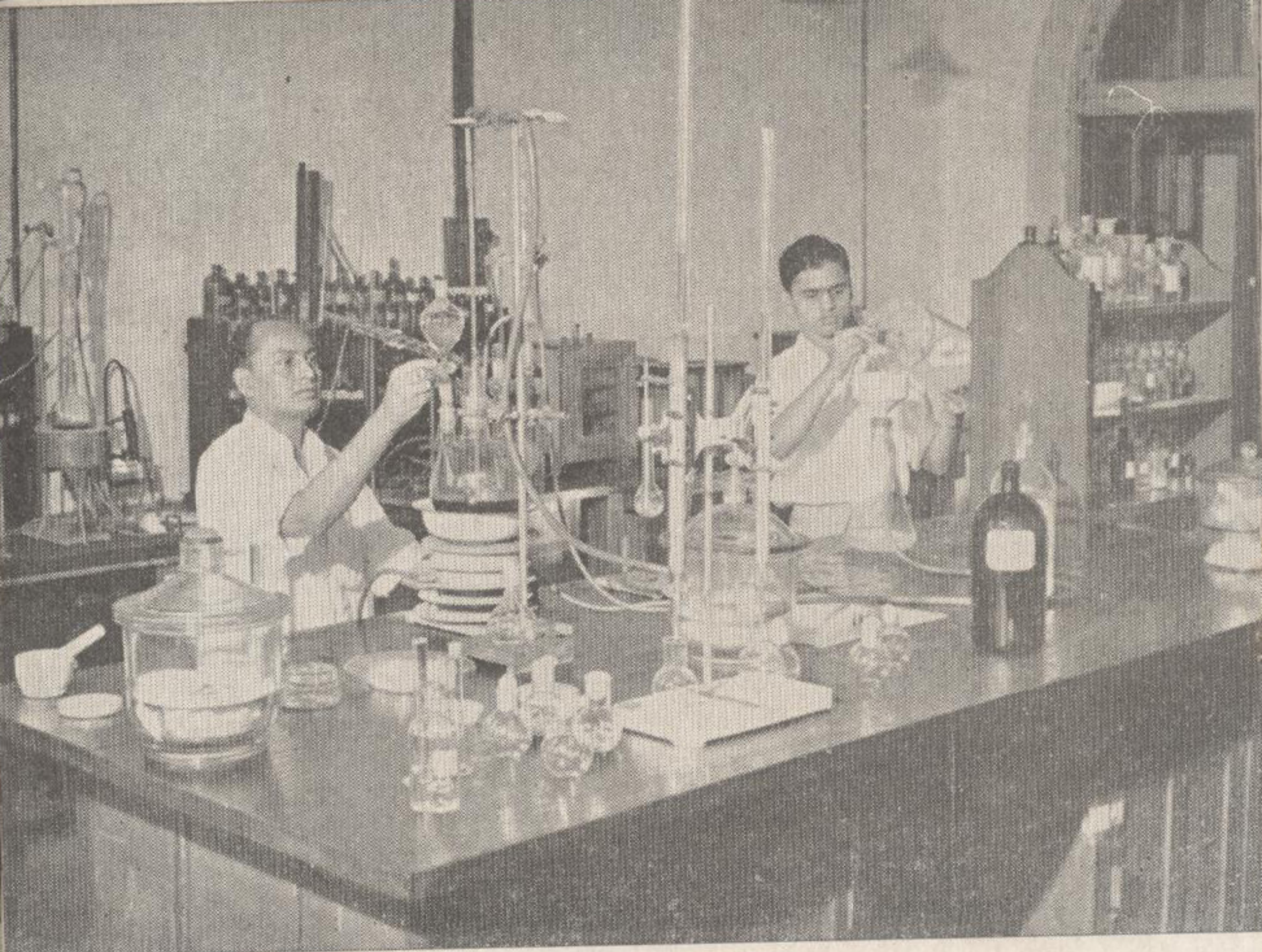
*Production of Influenza Vaccine
in 1957*

9

1897

1896

I N S T I T U T E
al Research in India



Laboratory preparation of synthetic drugs in the Chemotherapy Department.

of Employees' State Insurance Scheme. Facilities are available for the training of industrial workers and students of Pharmacy Colleges in the techniques of manufacturing pharmaceuticals, maintaining quality control during manufacture, analyses of pharmaceutical preparations, etc.

Media and Parenteral Solutions Section

This section prepares and supplies specialised media for the manufacture of vaccine, as also other media required for diagnostic purposes and sterility tests. As the micro-organisms are very fastidious regarding their nutritional requirements, a very high degree of skill is required in the preparation of these media. The important parenteral preparations such as Glucose Saline, Casein Hydrolysate, for the use of Government and other hospitals, are also prepared in this section.

Animal House

The Institute needs a large number of animals for various biological tests for standardisation of its products to comply with the requirements of the Drug Rules. The Institute, therefore, maintains an animal house and also supplies animals to other research institutions whenever spare supplies are available. The Institute also trains staff of other institutions in animal keeping and breeding.

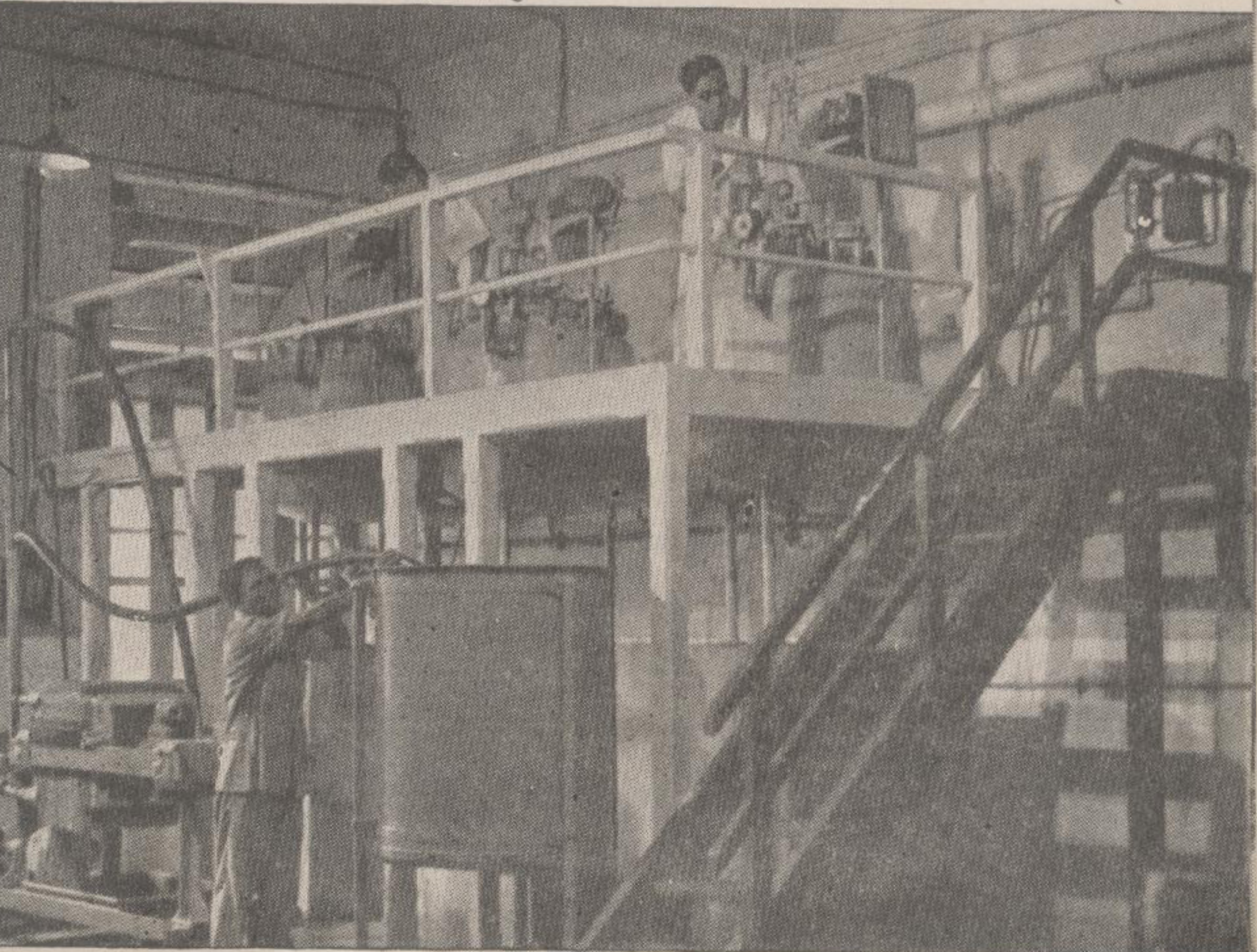
Antirabic Outdoor Section

The Institute has clinic facility for outpatient treatment round the clock of dog-bite cases and treats about 12,000 cases annually.

Yellow Fever Section

This section is the centre for Yellow Fever Vaccination for international travellers proceeding abroad and also has facilities for diagnosing suspected cases of yellow fever. This section is well-equipped for testing

Preparation of casein Hydrolysate required for vaccine manufacture in the Media Department.



potency of the imported yellow fever vaccine. It controls the inoculation programme in this regard by supplying potent yellow fever vaccine to various centres in India.

Business Management

The Business Management Section is responsible for all routine administrative matters such as looking after the programme of production, programme of sale, programme of purchases, supervising stores, accounts and budget of the Institute. This section employs cost-accounting methods in order to ensure economical production and pricing.

Maintenance and Workshop Section

This section looks after the maintenance of plants, machinery and equipment of the Institute and offers repairs service in case of breakdowns. It also prepares specialised equipment and apparatus designed by the personnel of the Institute for specific research work.

Department of Nutrition

The Department of Nutrition was established by amalgamating the Department of Nutrition and Experimental Pathology at the Haffkine Institute and the former Nutrition Unit of the Civil Supplies Department. The Department is located in the Haffkine Institute as a separate administrative unit with a staff of 35 members—medical, scientific and technical.

The Department is composed of well-equipped laboratory where adequate facilities are provided by the Haffkine Institute, the Nutrition Clinic at the J. J. Group of Hospitals and a Field Unit with jurisdiction all over the State.

The main activities of the Department are to carry out research into various problems of human nutrition and dietetics, to assess the state of nutrition of different population groups, to improve community nutrition and to

**Diagnosis of Clinical
samples in the
Clinical Pathology
Department.**



advise the Government in matters relating to the subject.

In addition, the department offers liaison service in the UNICEF Skim Milk Distribution in the State.

Examination of samples for food bacteriology is also undertaken.

Library

The library attached to the Institute contains a collection of more than 20,000 publications and 250 medical and scientific periodicals. This collection was made

Serum manufacture—Centrifugation of hyperimmune blood for separation of red cells from plasma.



over the years to provide reference material for the research and production staff. The library facilities are free and open to all research workers.

General

All the labour welfare legislation with regard to manufacturing activities is applied to the Institute. The Institute also complies with the Drug Control Rules.

There are several research fellowships awarded at this Institute by national agencies, such as the Indian Council of Medical Research, Council of Scientific and Industrial Research, State and Central Governments. The Institute also takes up research fellows who may be recipients of fellowships of the National Institute of Sciences of India or any other research endowment. These fellowships are open to science and medical graduates. The Institute takes the advantage of sponsoring research schemes through the Indian Council of Medical Research on specific projects. The laboratories of the Institute are exceptionally well-equipped with Laboratory apparatus and attract international visitors and trainees from organisations like the World Health Organisation, UNICEF, Colombo Plan and Rockefeller and other International Foundations. The Institute has contributed substantially in several fields of medical research.

The Institute is affiliated to the University of Bombay for degrees of M.Sc. and Ph.D. in Microbiology, Biochemistry, Organic Chemistry, Pharmacology, Pathology, Bacteriology, and Zoology. It has also fulfilled all its functions in several ways in the past. The Institute maintains public relations and helps the public by education in scientific activities by encouraging them to visit it and by taking them round the Institute when they visit it.

A BRIEF RESUME OF THE RESEARCH ACTIVITIES AT THE HAFFKINE INSTITUTE

The Vaccine Department, which has been in existence since the inception of this Institute, can rightly claim some firsts to its credit. It was here that the causation and spread of plague through fleas and rats, which acted as intermediary hosts, were finally established. Special differential tests for establishing the purity of plague culture were evolved. Standard methods for the assay of plague and cholera vaccines, which are now adopted all over the world, were worked out here. Production of plague and cholera vaccines in liquid media, which is so very convenient, was evolved at this Institute. Chemotherapeutic remedies for plague were developed first in the laboratory and were later tried out with great success in the field during epidemics. In recent years, the nutritional requirements of plague bacillus, its respiratory activity and its antigenic structure have been worked out. The antigenic structure of cholera and typhoid organisms have also been studied using the recent gel-diffusion techniques.

The Department of Antitoxins and Sera produced, for the first time in India, an Anti-snake Venom Serum which is effective against the bites of the four common poisonous snakes of India. It is marketed in a dry form in which condition it is stable for over 10 years. The department has produced better quality diphtheria toxins and toxoids in recent years. An improved method has been worked out to purify antisera. Electrophoretic, enzymic and immunological studies have been conducted on venoms. Hyperimmune rabies serum has been developed last year for trials.

The Chemotherapy Department has taken out patents on the manufacture of sulpha drugs. The department has synthesized a number of antitubercular and anti-malarial drugs which are under test. A study of indigenous drugs has also been started recently.

The Department of Virus Diseases has made extensive studies in Hebel's test for assessing rabies vaccine. It has produced avianized antirabic vaccine which is under test. Recently, work on isolation of influenza strains, typing them and studies on their antigenicity have been started. A tissue culture section has been set up to grow and study the APC group of viruses. Production of vaccines against RSS virus (Kyasanur forest disease) and against polio will be taken up in collaboration with Government of India and the Rockefeller Foundation.

Ecological studies in plague and studies in determining the reservoir for the disease were carried out in the Entomology Department. In recent years, the morphology of fleas and the morphology and breeding habits of snakes have been studied. The changing pattern of rat population in cities like Bombay and the susceptibility of rats to plague is under study.

The Department of Clinical Pathology has isolated and studied the incidence of typhus in India. The use of clot culture for the isolation of typhoid organisms from blood of patients was independently worked out. A pregnancy test using rats has been evolved.

The Pharmacology Department started intensive studies on indigenous drugs. Work has also been done on sleep inducing drugs. In recent years, production of experimental cholera in infant rabbits and testing of anticholera drugs is in progress. A simple method of estimation of saccharin in prepared tea has been worked out. Work on indigenous drugs is also being more intensively studied at present.

The Biochemistry Department has established a simple method for estimation of sodium by chemical method.

The Department of Blood Bank has studied the incidence of Rh and other factors among Indians.

WHAT DOES THE INSTITUTE PRODUCE?

VACCINES

- (1) *Plague Vaccine*: Prophylactic against plague.
- (2) *Cholera Vaccine*: Prophylactic against cholera.
- (3) *T. A. B. Vaccine*: Prophylactic against Para-Typhoid A & B.
- (4) *Antirabic Vaccine*: For treatment against dog-bite cases.
- (5) *Influenza Vaccine*: Prophylactic against Asian Virus Influenza (at present available for key personnel only against sanction of Central Government but may be available to public in immediate future).

ANTITOXINS AND SERA

- (1) *Anti-venin*: Lyophilised Polyvalent Anti-snake Venom Serum effective against bites of Cobra, Krait, Russell's Viper and Saw-scaled Viper.
- (2) *Tetanus Antitoxin*: Used in the treatment and prophylaxis of tetanus.
- (3) *Diphtheria Antitoxin*: Used in the treatment of Diphtheria.
- (4) *Normal Horse Serum*: Used as a constituent of bacteriological media.
- (5) *Gas Gangrene Serum*: Used in the prophylaxis and treatment of infected gangrenous wounds.

(6) *Diphtheria Toxoid*: Prophylactic against diphtheria and prevents disease for long periods; of particular usefulness in case of children.

(7) *Tetanus Toxoid*: Prophylactic against tetanus and prevents disease for long periods; of particular usefulness in case of children.

BLOOD PLASMA

Lyophilised human blood plasma for transfusion therapy.

SNAKE VENOMS

(Cobra, Russell's Viper, Krait and Saw-scaled Viper).

Used in the manufacture of Antivenin and biochemical research.

MEDIA

Used as Diagnostic Reagents.

DEAD EMULSIONS, HIGH-TITRE SERA, STAINS AND SOLUTIONS

Used as Diagnostic Reagents.

BLOOD GROUPING SERA

Used for typing blood groups.

PARENTERAL SOLUTIONS

Used in the treatment by infusion therapy.

DRUGS

- (1) *Vitamin Products*: Used in the treatment of disorders due to vitamin deficiency.
- (2) *Sulpha Products*: Used in the treatment of Bacterial infections.
- (3) *Quinine Sulphate Tablets*: Used in the treatment of Malaria.
- (4) *Pemon*: A liquid antiseptic and disinfectant.
- (5) *Solapsone*: Strong BPC Solution used in the treatment of Leprosy.

KITS

- (1) *Kit for treatment of Snakebite*: for immediate first-aid as well as effective treatment of snakebites.
- (2) *Kit for Inoculation against Cholera*: For preventive mass vaccination against Cholera.

ANALYTICAL SERVICES

The Institute renders extensive services to Government and public in the fields of Clinical Pathology, Biochemistry and Entomology. The Institute has a Pharmacological Laboratory, which also acts as a Drug Testing Laboratory for the Drugs Controller for the State of Bombay and the Prohibition Department.

All other information regarding the products and prices can be had from the Director, Haffkine Institute, Bombay-12.

THE INSTITUTE'S SUPPLIES

From year to year, increasing demands are received to meet the requirements of high quality biologicals and drugs produced at the Haffkine Institute. Below are given the supply figures for the year 1957-58:—

	<i>In Thousands</i>
Vaccines	... 214,21,000 Mls.
Sera	... 18,91,000 Mls.
Blood Plasma	... 6,15,000 Mls.
Diagnostic Reagents	... 4,86,000 Mls.
Intravenous Solutions	... 733,17,000 Mls.
Vitamins	... 279,29,000 Tablets
Sulpha Drugs	... 107,44,000 Tablets
Pemon	... 12,000 Lbs.

TO WHOM THE INSTITUTE'S PRODUCTS ARE SUPPLIED?

The Institute's products are supplied to the following:

- (1) State and Central Governments including Defence Establishments.
- (2) Municipalities and District Local Boards,
- (3) Chemists registered under the Employees' State Insurance Scheme, Bombay,
- (4) Medical Profession,
- (5) Public at the Institute's Sales Counter,
- (6) Foreign Countries.

At present, the Institute's products are, however, not available for resale to public through Chemists and Druggists, except under Employees' State Insurance Scheme.

EXPORTS

The Institute meets not only the heavy demands of the Nation, but also undertakes to meet some of the pressing and urgent demands from Middle East, Near East and Far East countries, for items like Cholera Vaccine, Antivenin etc. In view of the recent export policy of the country, the Institute is considering setting aside a part of its production for export purposes.

Interested parties may contact the Director, Haffkine Institute, Bombay-12, for further details.



