

## THE LISTER INSTITUTE OF PREVENTIVE MEDICINE

FIFTY YEARS RESEARCH ACTIVITY

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**T**HOUGH the British Institute of Preventive Medicine had received its certificate of incorporation under the Companies' Acts in 1891, it was not until two years later that its amalgamation with the College of State Medicine, with its rooms at 101 Great Russell Street, London, made possible its embarking on the scientific activities it was founded to promote. It is fitting, therefore, that short of celebrating in some more overt fashion, had times been normal, the jubilee of an institution which has well and worthily performed the charge committed to it by its founders, we should at least take the opportunity of recalling its genesis and of reviewing in briefest compass the services it has rendered to preventive medicine throughout a period which has witnessed that branch of science so bountifully enriched by the cultivation of all those basic studies that minister to its advancement.

The genesis of the British Institute of Preventive Medicine is soon told. A Mansion House meeting took place on July 1, 1889, to discuss the urgent problem of hydrophobia in Great Britain in the light of Pasteur's experimental work, and his elaboration of what had been almost universally hailed as a successful method of treating the victims of rabid dogs by immunizing them with his attenuated virus. At this meeting a resolution moved by Victor Horsley that the Government should be invited to introduce a Bill for the simultaneous muzzling of all dogs throughout the British Isles and for enforcing quarantine of imported animals was carried, and a son of Pasteur who attended the meeting was asked to convey to his father the thanks of the meeting for his services to British victims sent to Paris to undergo the new treatment. A committee was appointed to consider the most appropriate manner of discharging their debt to Pasteur and his staff for treating gratuitously "over 200 of our fellowcountrymen". Towards this object an appeal for funds was made, and the result was a gift of some two thousand pounds which was forwarded to Pasteur as a contribution to the Institute which bore his name and which had been formally opened only nine months previously (November 18, 1888). Funds were also raised towards the reimbursement to needy patients of their travel costs to Paris.

This was not all, however. The Committee enlarged its numbers and proceeded to consider how the lack of an institute in Great Britain with similar objectives to those of the Pasteur could be made good; and the final outcome of their deliberations, details of which cannot be given here, was the founding of the British Institute of Preventive Medicine, which received its charter on July 25, 1891. Long before this date, however, steps had been taken to secure sufficient funds to enable a commencement, even in a small way, of the Institute's programme of work. Financial support was solicited from private individuals and City of London companies, but progress was slow and indeed gave the promoters much concern, for provision had to be made not only for a scientific staff but also for the erection of a building worthy of the purpose it was destined to subserve.

Very substantial help came from the Berridge

Trust and the Grocers' Company and this, together with private donations and the liquid assets of the College of State Medicine, with which amalgamation was effected in 1893, placed the British Institute of Preventive Medicine in command of invested funds of the order of £60,000, at least half of which was earmarked for building purposes. Temporary accommodation for staff and students was found in rooms at 101 Great Russell Street, the lease of which was taken over from the College of State Medicine, and here the work of the Institute was carried on under very restricted conditions until the move could be made in 1898 to the new building in Chelsea Gardens. On December 6 of that year the British Institute became the Jenner Institute, in fulfilment of a promise by the Council to the Jenner Memorial Committee, which had collected funds to commemorate in some fitting way the centenary of Jenner's great discovery, that such change would be made should the funds collected be placed at the disposal of the Institute. The sum handed over by the Committee amounted to £5,768 and, ever since, the revenue from its investment has been disbursed on behalf of a Jenner Memorial Studentship tenable at the Institute. Five years later, in 1903, constantly recurring difficulties arising from a prior claim to Jenner's name by a body trading as the Jenner Institute of Calf Lymph, necessitated a further change of name and it was decided, with Lister's consent, that the Institute should bear his name.

Since the Mansion House meeting, Lister had taken a leading part with Sir Henry Roscoe in all the difficult and tedious negotiations with Government departments leading to the incorporation of the Institute as an association limited by guarantee but permitted to omit the word "Limited" from its designation. He had publicly upheld the importance of animal experiment in opposition to the noisy objections of the anti-vivisectionists, and he had been president of the Council of the British Institute until that body ceased to exercise executive functions on its replacement by a governing body of seven members under the terms of the munificent gift (1899) of £250,000 to the Institute by Lord Iveagh, whose interest Lister had been largely instrumental in securing. This gift gave an immediate assured income of some £8,000 a year and made possible progress in many directions.

So far I have referred only to the main research building in Chelsea Gardens, but one of the earliest ventures was the organization by the Council of the British Institute of an experimental farm for serum production, particularly diphtheria antitoxin. Dr. M. Armand Ruffer, who was appointed interim director in 1894 after the amalgamation with the College of State Medicine, was able to report to his Council that in August of that year he had immunized one or two horses against diphtheria toxin. These first horses to be immunized in Great Britain were stabled at the Brown Institution, and valuable help with the technical arrangements was given on the spot by Horsley and Sherrington. Later in the year, the work was removed to Sudbury, and finally in 1902 transferred to Elstree, where the Serum Department of the Institute has since been located. This department has not only been of enormous value to the Institute in providing an additional source of income from the sale of biological products, particularly therapeutic sera, but has also proved an unequalled training ground for young members of staff and voluntary workers, native and foreign, eager to

acquire a practical knowledge of immunological principles with the added advantage of working with large animals.

### Further Developments

Developments of the Lister Institute since its inception have been concerned almost solely with the growth of departments, and the institution of new departments rendered desirable less by reason of completeness or mere yielding to custom, than by the availability of outstanding exponents to run them. Some departments have had short lives, while others, such as those of nutrition and biophysics, the latter a quite recent innovation, have obviously come to stay in view of their weighty contributions to preventive medicine in the widest sense. It may be of interest to note that in 1919 the Governing Body, then becoming anxious about the future financial state of the Institute in view of increased costs of research and a probable falling-off in trading profits, proposed to the members that the name of the Institute as shown in the articles of association be changed to the "Lister Institute of Medical Research", on the ground that the change would convey to all persons more clearly the nature of the work carried on in the Institute than the words "Preventive Medicine", and that consequently more public support in the form of additions to its permanent revenue might ensue. The motion, however, was lost at an extraordinary general meeting of the members held on June 11, 1919.

The proposal in 1914, by a majority of the Governing Body, to hand over the Institute to the Government, under certain conditions, as a nucleus of the research organization contemplated by the National Health Insurance Act of 1911, created wide interest both internal and external. At a specially called meeting on November 18, 1914, of members of the Institute, Sir Henry Roscoe in the chair, the proposal was keenly debated, the merits and demerits of State control being the main theme expounded by a succession of distinguished speakers. The motion to amalgamate was, however, lost by a narrow margin of votes.

The idea of having a research hospital attached to the Institute, of similar character to those at the Pasteur and Rockefeller Institutes, was *inter alia* considered by a Reconstruction Sub-committee of the Governing Body in 1919, and it was agreed to be a sound one. Steps were accordingly taken with the approval of members at specially called meetings to have the relevant item on treatment in the original memorandum of association altered by the Court to permit the building of an in-patients hospital for which ground adjacent to the Institute was available, provided that, for the establishment and maintenance of such hospital, only funds "as shall be specifically subscribed for that purpose" be employed. So far, the necessary funds for that purpose—and they would require to be very large funds—have not been forthcoming.

### The Institute as a Scientific Centre

It is not for me, at least here and now, to traverse, much less to assay, the published work of half a century in a variety of fields. This must await a fuller history. Apart from the two specially printed volumes of dates 1897 and 1899 (London: Macmillan and Co.) containing papers published before the Institute adopted the name of Lister, there have appeared some forty volumes of "Collected Re-

prints", copies of which have been sent to selected individuals and scientific libraries in Great Britain and abroad. The very titles of the papers in these volumes will, as the years pass, be found to reflect very accurately the kind of problems that have exercised the minds of investigators at different periods, from the earliest activities of bacteriology, chemistry and immunology as the chief handmaidens of preventive medicine, to the advent of other disciplines such as biochemistry and biophysics which have come to the help of, and indeed would sometimes seem to dominate, current advance in fields which hitherto have been cultivated mainly on biological lines. I may mention, for example, bacteriology, immunology, nutritional science, endocrinology and virus structure. It is already clear that future workers in the field of preventive medicine, whatever form their particular biological training may take, will be well advised to add to their armamentarium a good deal more than a mere capacity to appreciate the help that chemistry and biochemistry can give to their problems; *mutatis mutandis*, I may add, for the trained chemist embarking on a biological problem.

Fortunately, in an institute containing experts in various disciplines, the difficulty of ensuring that the fullest light is thrown on a problem is considerably lessened. In the forty-two volumes to which I have alluded appear not only the fruits of inquiries planned within the Institute's walls but also scientific contributions and reports on a great variety of problems in the solution of which Institute workers have from time to time been invited to participate by various Government, public and scientific bodies. I may refer, for example, to such matters as the experimental demonstration of the rat flea as the vector of plague, the new knowledge of caisson disease and cognate issues made possible by the large pressure chamber, the gift of Dr. Ludwig Mond, the work on vitamins and deficiency diseases originally commenced in the middle of the War of 1914-18 to satisfy a crying need for special knowledge to meet an urgent war problem, and now with greatly expanded knowledge serving the present war effort at home and abroad, the investigation of the insect vector question in trypanosomiasis, yellow fever, typhus and trench fevers and many others.

Aside from its research activities, or perhaps because of them, the Institute has from its inception performed a most valuable function in providing research facilities for young workers from Great Britain and other countries desiring to acquire a working knowledge of technical methods, or to undertake under supervision some particular piece of work, holders of Beit and other fellowships, including those attached to the Institute, together with approved young graduates preparing for the higher research degrees of the University of London, with which the Institute has long been affiliated as a research school with its professors, readers and recognized teachers. Many of these former students and many former members of the Institute's staff have afterwards had distinguished scientific careers in academic or other spheres in various parts of the world. Having but recently retired from a lengthy term of service on the Institute's staff, I would wish to send here a friendly greeting to all former Listerians on this important occasion; and to offer, on behalf of NATURE, its congratulations to the Institute's Governing Body and staff, and its best wishes for the future work and welfare of the Institute in a post-war world.