

taken from more than twenty cases of tuberculous disease in human beings, including sputum from phthisical patients and the diseased parts of the lungs in pulmonary tuberculosis, mesenteric glands in primary abdominal tuberculosis, tuberculous bronchial and cervical glands and tuberculous joints. We have compared the effects produced by these with the effects produced by several different strains of tuberculous material of bovine origin.

"In the case of seven of the above strains of human origin, the introduction of the human tuberculous material into cattle gave rise at once to acute tuberculosis, with the development of widespread disease in various organs of the body, such as the lungs, spleen, liver, lymphatic glands, etc. In some instances the disease was of remarkable severity.

"In the case of the remaining strains, the bovine animal into which the tuberculous material was first introduced was affected to a less extent. The tuberculous disease was either limited to the spot where the material was introduced (this occurred, however, in two instances only, and these at the very beginning of our inquiry), or spread to a variable extent from the seat of inoculation along the lymphatic glands, with, at most, the appearance of a very small amount of tubercle in such organs as the lungs and spleen. Yet tuberculous material taken from the bovine animal thus affected, and introduced successively into other bovine animals, or into guinea-pigs from which bovine animals were subsequently inoculated, has, up to the present, in the case of five of these remaining strains, ultimately given rise in the bovine animal to general tuberculosis of an intense character; and we are still carrying out observations in this direction.

"We have very carefully compared the disease thus set up in the bovine animal by material of human origin with that set up in the bovine animal by material of bovine origin, and so far we have found the one, both in its broad general features and in its finer histological details, to be identical with the other. We have so far failed to discover any character by which we could distinguish the one

from the other; and our records contain accounts of the post-mortem examinations of bovine animals infected with tuberculous material of human origin which might be used as typical descriptions of ordinary bovine tuberculosis.

"The results which we have thus obtained are so striking that we have felt it our duty to make them known without further delay in the present interim report.

"We defer to a further report all narration of the details of our experiments (and we may say that up to the present time we have made use of more than two hundred bovine animals), as well as all discussions, including those dealing with the influence of dose and of individual as well as racial susceptibility, with questions of the specific virulence of the different strains of bacilli, with the relative activity of cultures of bacilli and of emulsions of tuberculous organs and tissues, and with other points. In that report we shall deal fully with all these matters, as well as with the question why our results differ from those of some other observers."

THE INTERNATIONAL ASSOCIATION OF ACADEMIES.

As we have already noted, The International Association of Academies met in London, on May 24, 25, 26 and 27 under the presidency of Sir Michael Foster. From reports published in the *London Times*, we take the following details. Lord Reay was nominated vice-president and Dr. Diels, Professor Darboux, Count Balzani and Professor Bakhuisen were appointed honorary presidents.

A resolution was passed to the effect that the initiation of any new international organization, to be maintained by subventions from different states, demands careful previous examination into the value and objects of such organization, and that it is desirable that proposals to establish such organizations should be considered by the International Association of Academies before definite action is taken.

Professor Credner moved "That this meeting recognizes the great value of the International Catalogue of Scientific Literature, and the importance of aiding the work by

making its existence known, as well as of contributing to its efficiency and completeness by endeavoring to secure the indexing of scientific publications at the time of issue, in accordance with the plan adopted by the Royal Society." Lord Reay announced that the British Academy was taking steps to publish a similar catalogue for philology, and the other branches of learning not included among the sciences of nature.

M. Boutroux gave a brief account of the work completed and contemplated in connection with the preparation of a complete edition of the works of Leibniz. Professor Waldeyer presented, on behalf of the commission for investigating the anatomy of the brain, a report of the sitting of the committee of May 24. The report stated that a meeting had been held of the invited members of the central commission and of the seven special commissions for brain investigation, and that there were present members both of the central commission and of the special commissions. Professor Waldeyer was elected chairman in place of the late Professor His, of whose memory Mr. Cunningham spoke in warm terms.

Professor Fredericq presented the report of the late Professor Marey on the work of the Institut Marey, and moved the following resolution—"The International Association of Academies approves the nomination of MM. Lippmann, Amagat, Charles Richet, Blix, Einthoven, Grützner, Langendorff, Schenck, Athanasiu as new members of the Marey Institut. After having considered the report of the late Professor Marey, dated May 5, 1904, on the work of the institute, the association congratulates the committee of the Marey Institut in having obtained in France recognition as being of public utility, and thus secured the permanence of this international scientific organization. The association expresses its best wishes for the success of the scientific work undertaken at the institute."

Sir A. Geikie, on behalf of the International Geological Congress, moved the following resolution: "The International Association having received and considered a reference

made to it by the International Geological Congress held at Vienna, 1903, resolves to ask the International Geodetic Association to take into consideration whether and (or) in what way it can undertake or promote international cooperation in the investigation of the following subjects: 'Precise determination of levels in mountain chains subject to earthquakes, with the view of ascertaining whether such chains are stable or are undergoing movements of elevation or depression.' 'Measurements of the value of gravity with the object, so far as geological questions are concerned, of throwing light on the internal distribution of masses in the earth, and on the rigidity or isostasy of the terrestrial crust.'"

The president proposed Vienna as the place of meeting of the next general assembly in 1907. The proposal was adopted unanimously.

SCIENTIFIC NOTES AND NEWS.

At the jubilee celebrations of the University of Wisconsin the degree of doctor of laws was conferred on a number of delegates, including Henry Prentiss Armsby, director of the Pennsylvania Agricultural Experiment Station; Thomas C. Chamberlin, professor of geology, University of Chicago; Professor W. G. Farlow, Harvard University; Dr. Daniel Coit Gilman, president of Carnegie Institution; the Hon. James Wilson, secretary of agriculture; Robert S. Woodward, dean of the faculty of pure science, Columbia University; F. P. Mall, professor of anatomy, Johns Hopkins University; E. L. Mark, Hersey professor of anatomy, Harvard University; Professor S. L. Penfield, professor of mineralogy, Sheffield Scientific School, Yale University.

THE Chemical Society of London has elected as foreign members Professor E. W. Morley, of the Western Reserve University; Professor F. W. Clarke, of the U. S. Geological Survey, and Professor A. H. Becquerel, Professor C. A. L. de Bruyn, Madame Curie and Professor C. T. Liebermann.

COLUMBIA UNIVERSITY has conferred its doctorate of science on Professor Hugo De Vries, the eminent botanist of the University of Amsterdam.