

Every precaution was taken to avoid contamination, and on incubation on agar jelly at 30° C. five colonies of bacteria and five moulds developed. The bacteria were all different and afterwards withstood temperatures much lower than those encountered on the stratosphere flight. The moulds were identified as *Rhizopus*, *Aspergillus niger*, *Aspergillus fumigatus*, *Penicillium cyclopium* and *Macrosporium tenuis*, all of which have frequently been collected on aeroplane flights.

CONCLUSION

A considerable amount of very useful data was obtained on this flight, and one has great admiration for the intrepid aeronauts who navigated the balloon, and the ground staff who made the flight possible. Nevertheless, one is inclined to wonder whether, from a purely scientific point of view, the money would not have been better spent in sending up a large number of unmanned balloons. Practically all the apparatus was entirely automatic in operation and it was merely necessary

for the crew to press a few switches. It might be rather difficult to operate the cosmic ray apparatus and ozone spectrographs in an unmanned balloon, but Regener has succeeded in doing this. The total weight to be carried up was enormously increased, both by the passengers themselves and by the airtight stratostat with its air-conditioning apparatus. On the other hand, the popular appeal was far greater, which doubtless made it much easier to collect the necessary funds.

It is hoped that this flight will soon be repeated, as isolated observations become far more useful when substantiated by further data.

The report of the flight contains several very interesting photographs taken at the top of the flight. The most striking features in these pictures are the effects of erosion on the topography of South Dakota, and the sharpness of the top of the haze layer. Even more interesting are the photographs taken from an aeroplane at the exact moment of landing of the balloon.

R. T. P. W.

Obituary Notices

Sir James Crichton-Browne, F.R.S.

SIR JAMES CRICHTON-BROWNE, who died on January 31 at the age of ninety-seven years, was born at Dumfries in 1840. His father was Dr. W.A.F. Browne, who became Commissioner on Lunacy for Scotland, and was at the time of his son's birth head of a famous private asylum in Dumfries the Crichton Royal Institution. Crichton-Browne as a boy saw his father applying new methods to the treatment of the insane; they were treated as if they were rational human beings they were employed according to their bent in the day time, entertained in the evening and surrounded with the comforts of a home. His father believed in education—particularly of the young medical men who were to devote their lives to the care and treatment of insanity. It was in the late fifties of last century, when Crichton-Browne was a medical student in the University of Edinburgh, that Prof. Laycock of that University began to give lectures on the disordered psychology of the insane. In no other university or medical school in Great Britain was any attempt made to give systematic lectures on insanity. It was otherwise on the Continent.

It cannot, therefore, be a matter of surprise to find young Crichton-Browne, when he became a qualified medical man in 1861—he being then twenty-one years of age resolving to do for the insane of England what his father had done for their unfortunate brethren in Scotland. In the year in which he qualified, he gave a paper to the Royal Medical Society of London on "The Clinical Teaching

of Psychology". It is difficult to believe, as one reads that lecture now, that its mature thoughts are those of a young man of twenty-one. "There are," said he, "in the midst of your civilization, currents swift and relentless which are ever hurrying on countless contributions to that whirlpool in the vortex of which so many minds float wrecked". The full and rounded style with which he enlightened his listeners in those later days was already developed in 1861.

Newcastle-on-Tyne had discernment, and snapped up this young medical Scot and placed him in charge of its asylum, and the medical school of that city made him its lecturer on medical psychology. While still in his twenties (1866), he was made medical director of the West Riding Asylum at Wakefield. He brought enlightened and humane methods with him, and believing that the foundation of all progress in medicine depends on research, had a laboratory built and equipped in connexion with the asylum. A glance at the reports which were issued under his direction will show how well he planned. The most famous of all the researches done there was that which laid the fame of the late Sir David Ferrier (1843-1928). In the spring of 1873, Ferrier visited the West Riding Asylum, Ferrier being then thirty years of age. Crichton-Browne was his senior by three years, they had been at the University of Edinburgh together. A discussion sprang up on the experiments which Fritsch and Hitzig had done on the brains of dogs. The result was that Ferrier stayed on to repeat similar experiments and ultimately proceeded to apply faradic stimulation to the cortex

of the brains of monkeys. These experiments laid the basis of our knowledge of localization of function in the cortex of the human brain. The incident is worthy of notice, for it illustrates the manner in which Crichton-Browne helped in the growth of scientific knowledge. There was no jealousy in his composition; he welcomed knowledge from any source, so long as it was real knowledge.

In 1875, Crichton-Browne left Wakefield to become a Lord Chancellor's visitor in lunacy. It was thus early that he became a feature of London social life: no gathering of medical or of scientific men seemed complete without him; he had a rare zest for public life. He was elected to the Royal Society in 1883, and at the time of his death he was senior fellow. In 1880, he became a member of the Royal Institution. James Dewar was then in the fourth year of his directorate; both men were steeped in the Edinburgh tradition. In 1889 he took over the honorary treasurership of the Institution, and held that office and all that it embraces until 1926. He was elected to the Athenæum Club in 1893. He took an active part in all medical societies which concern themselves with the life and disorders of the human brain.

It was during the later part of his treasurership at the Royal Institution that the writer of this note had the privilege of his friendship. One incident may be mentioned because of the light it throws on Crichton-Browne's character. Sir James Dewar was not always an easy colleague and was at times dictatorial almost outrageously so. It so happened that towards the end of the Great War, Prof. H. H. Turner of Oxford was busy in the theatre of the Institution making ready for his Christmas lectures for children. Dewar entered to find Turner grouping a class of young children to represent the heavenly bodies and their movements. "What is this?" demanded Dewar. Turner explained. Dewar banned the scheme out of hand. Turner banged the lecture-room door and refused to return—on the eve of Christmas. It was then that Sir James Crichton-Browne appeared on the scene and in two days had peace restored and lectures assured. It was all accomplished by clear thinking, honest speaking and the pertinacity of a good heart. He combined in his person and in his mentality traits of both the centuries in which he had lived. He dressed his beard and his hair to the last in the fashion which prevailed when he was a young man in the late 'fifties; his oratory was of the kind beloved by the Gladstonians, but his attitude towards affairs was always modern.

Crichton-Browne loved his native town—Dumfries and all connected with it—especially Burns and Carlyle. His pen never wearied in their defence. Next to Dumfries came Edinburgh and its great men—especially Walter Scott. His interests were so diverse and so wide. Among his writers, Shakespeare stood highest, Scott next. His pen was always busy—always in search of his country's good. It is not necessary here to give a list of the non-professional books he wrote—from "The Nemesis of Froude" (1903) until the last of his reminiscences, which began to appear after his official retirement in 1922. The

first volume of this series, "Victorian Jottings", appeared in 1926; the fifth, "The Doctors After-Thoughts", in 1932. Up to the last he and Lady Crichton-Browne went every year—spring and autumn—to breathe his native air at Crindau, Dumfries. It was during a visit to Crindau that death came to him. His brother, Balfour Browne, was the most successful parliamentary barrister of his time. Crichton-Browne himself had the makings of a great judge. Indeed he was a very great Victorian, the last of them. He was great not because of any contribution he himself made to medicine or science, but because he fostered the conditions which ensure the birth of knowledge in others. He was great both for what he did and for what he was. A. K.

Sir Thomas Stanton, K.C.M.G.

THE sudden death on January 25, at the age of sixty-two years, of Sir Thomas Stanton has come as a great shock to his many friends, both at home and abroad. Although Stanton, as director of Government Laboratories, Federated Malay States, and later, as chief medical adviser to the Colonial Office, occupied prominent positions throughout a large part of his life, he never sought publicity, and the public never fully appreciated the work which he had done on beriberi, on malaria and other diseases, or his work at the Colonial Office in reorganizing the Colonial Medical Service.

Stanton went to Malaya in 1907 and was soon engaged in the work with which, perhaps more than any other, his name will be permanently associated—the discovery of the cause of beriberi and of means for its prevention. At the beginning of this century, beriberi was certainly a medical puzzle. Its neuritis and paralysis were so similar to alcoholic and lead poisoning that few people doubted that beriberi was the result of the entry into the body of some poison. The late Dr. W. L. Braddon strongly maintained the hypothesis that the poison entered the system in white polished rice, and that it was absent from par-boiled and partly polished rice. But evidence that rice was not a factor seemed so conclusive from experiments conducted by the late Dr. E. A. O. Travers in two jails at Kuala Lumpur that in Manson's "Tropical Diseases", third edition (1903), it is stated: "This view has been disposed of effectively by experiments by Dr. Travers. This experiment was prolonged and scrupulously carried out." Braddon was not convinced, and a polemic ensued, as a result of which Dr. William Fletcher carried out an experiment in his hospital wards at Kuala Lumpur at the suggestion of his chief, Dr. Travers.

The question was far from being one of merely academic interest. There were hundreds of new cases of beriberi every year in Malaya. The tin mines suffered severely. Sometimes the disease attacked the jails so seriously that a sentence of six months' imprisonment threatened to be a sentence of death, or what might perhaps be regarded as worse, a life sentence of paralysis following beriberi. Fletcher set out to confirm Travers's view that rice played no part in causing beriberi. At the end of