assume that in the sex chimæras the hormones from the male part of the gonads suppress, to some extent, the development of female characters. On the other hand, the 3 clear cases of intersexes, mentioned above, exclude the possibility of complete dominance being an absolute rule. However, nothing is known at present about the distribution in the embryo of the cells derived from the two-component eggs. It seems more likely that the contribution from these two sources to different regions of the body, or even of the organs, is not uniform and varies from individual to individual. The genital apparatus can provide a clear indication of irregularities of this kind. The inconstant genetical constitution of the tissues contributing to this apparatus, when influenced by secondary stimuli, could produce a variety of abnormalities.

The striking ability of mouse eggs to unite and develop into one blastocyst, at so late a stage as the 8-cell, can be accounted for on the basis that the position of the cells is not yet determined. It is during the succeeding mitotic cycle that the trophoblastic cells (or strictly speaking enveloping cells) move and overgrow the cells of the inner mass^{14,15}. The movements of enveloping cells must be caused by differing surface activities of the two kinds of cells. In the case of fused eggs, these movements are influenced by the presence of two groups of cells of the inner mass. Consequently, the enveloping cells tend to overgrow the two inner masses together, leaving free from the beginning, or retreating afterwards from, the surface between them. The observations made just after joining and during the first few hours of culturing support this hypothesis. The mechanical squeezing is applied for a short time and results only in approximation of the eggs. Though sticking together, the eggs represent at this time two distinct entities. It is during culturing, when no mechanical squeezing is applied, that the boundary gradually vanishes and real union takes place. The 8-cell stage is the latest convenient stage for this purpose. Eggs joined at the 12-cell stage do adhere together, but later almost invariably separate completely to form two blastocysts.

The perfect morphology of 'double' blastocysts would seem to preclude the possibility that the

descendant cells of only one egg contribute to the developing embryo. It will be possible, perhaps, to obtain in future additional proof on purely genetical grounds. In the present work one combination of fused eggs—(LAB Grey)² + (LAB Grey × A₂G)—offers a possibility of tracing the existence of one component due to its factor for pigmentation. It can be assumed that if the pigment were revealed in some form in all or at least in the majority of cases, this could be considered as indirect evidence that the non-pigmented component is also present. As all but one of the young died before the time when skin pigmentation appears, the only criterion available was the eye colour. Among 15 embryos and young, 14 had black eyes, including both embryos in one pair of identical twins. The one additional animal which has survived has black eyes and a uniform coat of the type of the hybrid component.

Briefly, the evidence for real chimærisism in the experiments described is three-fold: (1) complete union of two eggs into one blastocyst as seen in culture *in vitro*; (2) the presence of intersexes; (3) the presence of black pigment in the majority of embryos developed from pigmented + non-pigmented fused eggs.

Experiments are still in progress and a detailed account will be published elsewhere.

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OBITUARIES

Maurice, Duc de Broglie, For.Mem.R.S.

MAURICE DE BROGLIE, who died on July 14, 1960, was one of that small band of scientists who pursue their researches privately with their own means. In some respects he was unique. Not only did he establish a laboratory for his own research in his Paris home, but he also collected around him a group of younger men who worked under his guidance. His brother, Louis de Broglie, joined him shortly before the First World War, and much of the initial inspiration of Louis's work came from Maurice's influence. Louis Leprince-Ringuet, Jean Trillat, Jean Thibaud, Alexandre Dauvillier, Bruno Rossi, were among those in his research school. It was his achievement to establish a private research centre of world-wide reputation in his mansion in the rue Chateaubriand.

Maurice de Broglie was born on April 27, 1875, in Paris. He entered the Ecole Navale in 1893 and served for ten years in the Navy. When he left it, in 1902, he established a small laboratory in his house. He was, at that time, interested in the electrical charges on fine particles suspended in an ionized gas, and studied these movements in an electric field, the method afterwards used by Millikan to measure the electronic charge. In 1913 he was one of the first to study X-ray spectra and X-ray absorption. He developed a spectrometer in which he registered, on a photographic plate, the reflected rays from a lattice plane of a slowly rotating crystal. I remember that time well, because Maurice de Broglie and my father corresponded so regularly and compared their results.

During the First World War, he had a commission in the French Navy and made a considerable con-

tribution to the underwater detection of submarines and the development of radio.

After the War, de Broglie continued his researches on X-ray absorption discontinuities, and published, with his brother Louis, *La Physique des Rayons X*, which was a well-known standard work at that time. The laboratory was greatly enlarged and the number of research workers increased. De Broglie's interests turned towards nuclear physics, and some of the devices for observations of high-energy particles which have now become classical were first developed by de Broglie's team. He was elected to the Académie Française in 1934. For ten years he was president of the Conseil Scientifique de l'Energie Atomique.

De Broglie won the warm affection of his students and his many friends all over the world, who will retain pleasant memories of their visits to his home and laboratory, where he was the kindest and most genial of hosts.

W. L. BRAGG

Prof. E. Henriot

WITH the death on February 1 of Emile Henriot, Belgian science lost one of its foremost representatives. Although of French origin (he was born in Besancon in 1885), he spent practically his entire scientific life in Belgium as professor of physics in the Université Libre de Bruxelles and was made emeritus professor in 1956. He suffered in the last few years from ill-health, which fortunately did not diminish in any manner his lucidity or his mental powers.

Among his many contributions to physics, two stand out by which his name will be remembered. The first was the subject of his doctor's thesis. By a masterly series of investigations, he was the first to show definitely that potassium and rubidium are naturally radioactive. This work, done before the First World War, was an investigation in the best tradition of the great French school of radioactivity measurements.

In more mature years came his justly famous investigations of extremely high angular velocities. He found that suitably placed air-jets can be used to spin tops at very high speeds, and he developed this technique to the point where it could be used for certain physical measurements. Although he originally wanted to use it for a precision determination of the speed of light, in the hands of Beams these air-driven tops became the mechanism of the then most successful ultracentrifuges.

Henriot was attracted time and again to questions of optics, where he was able to use his great theoretical skill. Problems of birefringence and molecular vibrations have been treated very successfully in several of his papers.

His contributions to physics went considerably beyond his own research. He was an outstanding teacher, and several of his former pupils are now professors of physics in different places. To the physics community at large, he was known as the organizer of the physics conferences of the Solvay Institute. For more than thirty years, he was a member of its administrative committee and for about twenty years he was its secretary. To the physicists going to these conferences he was a familiar figure, and he succeeded in maintaining these conferences at a very high level.

Physics was not his only love. Everything human attracted him, and his friends could, and did, learn much from him about art or archaeology. He had a fine collection of Greek marbles and a beautiful

library adorned by many valuable books. Moreover, he was an extremely warm human being, and those who had the good fortune of being his friends deplore his death.

The many distinctions which came to him were never mentioned by him. He was a very modest person, modest almost to shyness. He married one of his former students, who became his collaborator for very many years. During the Second World War, Henriot was professor at the University of Algiers, when evacuated from Belgium and France. By coincidence, his daughter still lives there. In the opinion of some of his colleagues, the good physics tradition in Algiers really started with his teaching there.

All his friends and the world of physics will miss him.

L. MARTON

Mr. G. W. G. Briggs

GUY BRIGGS, assistant director of the National Institute of Agricultural Botany, died in hospital at Cambridge on March 7. His death at fifty-seven brings a deep sense of loss to his colleagues in many countries who shared his interest in problems relating to grassland and to seeds.

His early interest in agriculture developed as he lived during school vacations on his grandfather's farm at Melbourne in Derbyshire. From King's College, Wimbledon, he went to Wye College, where he gained distinction in botany and in agriculture in the diploma examinations.

Entering the Colonial Agriculture Service in 1926, he was in close touch with the experimental farms and with advisory work among the growers. Those who knew him at that time remember the keen personal interest he took in all who sought his assistance, both Africans and Europeans. He played a leading part in the development of the rice crop and he had the satisfaction of seeing Nigeria become self-supporting in this cereal.

Retiring on medical advice from the Colonial Service in 1945, he was appointed as a technical officer at the National Institute of Agricultural Botany, becoming head of the Seed Production Branch in 1948 and assistant director of the Institute during January 1960.

Briggs's great organizing ability was admirably combined with a deep appreciation of technical problems on seed production. The researches of Stapledon and his colleagues at Aberystwyth had shown the value of leafiness and persistence in grasses and clovers, and had led to the development of a series of varieties which possessed these qualities. Briggs played an important part in bringing these to the notice of growers and in helping to develop methods of seed production which enabled the new varieties to be grown commercially on a large scale without losing their distinctive features.

The agricultural industry was beginning to appreciate the value of seed produced under technical supervision, and it was Briggs who was mainly responsible for organizing, on behalf of the National Institute of Agricultural Botany, the national certifying authority for herbage seeds. In this he had the strong support of the Welsh Plant Breeding Station, the seed trade and the National Farmers' Union.

Briggs took an active interest in developments in seed production abroad, and when, in 1958, the Organization for European Economic Co-operation adopted throughout the eighteen member countries an