sex-determination in the gamete, a discovery of astonishing novelty at that time, though now so familiar to us all that we have forgotten how hard it was to achieve. Being greatly struck with Wilson's cytological proof that many *male* insects are heterozygous for sex, and having himself proved that in Abraxas the female is in this condition, Doncaster devised a scheme in which both sexes are thus represented, dominance being attributed to the female gamete; but he afterwards accepted a simplifying emendation in which the male is taken to be homozygous. After this, finding a curious strain in which half the females produce daughters almost exclusively, Doncaster showed that these females generally had only fifty-five chromosomes instead of the normal fifty-six. By reasoning analogous to that afterwards used by Bridges in his famous paper on "non-disjunction," he attempted a cytological interpretation, though, as he admitted, the solution was imperfect, and the case is still mysterious.

Progress was also made with the paradox of tortoiseshell cats, known by fanciers to be almost exclusively females. Doncaster proved that tortoiseshell is the female heterozygote of orange and black, the corresponding male being orange; and in the course of wide inquiries he discovered the new fact that the rare tortoiseshell tom is often *sterile*. In his last paper he conjectured, not without probability, that, in view of Lillie's extraordinary discovery as to the free-martins of cattle, these males may owe their peculiarities to the intra-uterine influence of other embryos. Most of these subjects are discussed in his text-book, "The Determination of Sex," 1914. Just before his death Doncaster published an admirable "Introduction to the Study of Cytology," in which he declared himself with reservation a convert to the views of Morgan—a judgment which, from so critical an observer, must carry great weight.

His death will be cruelly felt. At a time when cytology is becoming a subject of primary importance, the loss first of R. P. Gregory and now of Doncaster leaves us bereft indeed.

Doncaster was one of the clearest-headed men I have known, and, being full of both enthusiasm and knowledge, he taught extraordinarily well. In Cambridge he served in various capacities, and was for four years in the University of Birmingham. As Prof. Herdman has written, his death is "nothing less than a calamity to Liverpool University." Doncaster was slight in figure and of a nervous temperament, feeling and thinking of everything with intensity, though nevertheless a fluent speaker. He came of a Quaker family, being the son of Samuel Doncaster, manufacturer, of Sheffield, in whose beautiful garden he developed his love of plants. Educated at the Friends' School at Leighton Park, Reading, he went up as a scholar to King's College, Cambridge, of which he afterwards became a fellow. He married in 1908 Dora, daughter of Walter Priestman, of Birmingham, and leaves three children.

We did not speak of such matters, but it was known to his friends that Doncaster had religious instincts strongly developed. The years of the war were to him more hateful even than to most thoughtful men. He held the Friends' attitude of the unlawfulness of war, but, feeling that alternative service was a duty, he gave up his researches and qualified as a bacteriologist, working in the 1st Eastern Hospital, Cambridge, and afterwards in the Friends' Ambulance Unit at Dunkirk.

W. BATESON.

MR. JOHN W. HYATT, of Newark, New Jersey, whose death is reported at the age of eighty-two, was the inventor of celluloid. He was a printer by trade, and was using collodion in the course of his work when he accidentally overturned a bottle, and the idea of celluloid came to him from watching the collodion solidify. He took out 250 patents in all, a large majority of which had an important bearing on manufactures. They included a billiard-ball composition, a roller bearing, a system of purifying water for domestic use, a sewing machine capable of sewing fifty rows of lock-stitches at once, a machine for extracting juice from sugar cane, and a new method of solidifying American hardwoods. In 1914 Mr. Hyatt was awarded the Perkin medal of the New York Society of Chemical Industry.

WE much regret to see the announcement in the *Times* that PROF. AUGUSTO RIGHI, For. Mem. R.S., died suddenly at Bologna on June 8 at seventy years of age.

Notes.

THE list of honours conferred in celebration of the King's Birthday includes the following names of men associated with scientific work:—*Irish Privy Councillor:* Mr. H. T. Barrie, Vice-President, Irish Department of Agriculture. *K.C.B.:* Sir A. W. Watson, president of the Institute of Actuaries. *C.B.:* Mr. A. W. Flux, Assistant Secretary, Board of Trade. *Baronet:* Mr. P. J. Mackie, who financed the Mackie Anthropological Expedition to Uganda and other expeditions. *Knights:* Prof. F. W. Andrewes, F.R.S., pathologist at St. Bartholomew's Hospital; Capt. D. Wilson-Barker, captain-superintendent of the training-ship *Worcester*, and past-president of the Royal Meteorological Society; Dr. J. C. Beattie, Principal of the University of the Cape of Good Hope; Mr. W. B. M. Bird, founder of the Salters' Institute of Industrial Chemistry; Dr. H. H. Hayden, Director of the Geological Survey of India; and Prof. J. B. Henderson, professor of applied mechanics, Royal Naval College, Greenwich. *C.I.E.:* Mr. C. M. Hutchinson, Imperial Agricultural Bacteriologist, and Mr. R. S. Pearson, Forest Economist, Research Institute, Dehra Dun. *K.B.E.:* Dr. J. Dundas-Grant, eminent aural specialist; Dr. J. C. Stamp, distinguished economist; and Col. W. Taylor, ex-president of the Royal College of Surgeons in Ireland. *Companions of the Imperial Service Order:* Mr. R. B.