

near certainty was de Geer's fundamental task. As president of the memorable International Geological Congress that met at Stockholm in 1910, he presented his case in an address and also less formally during a wonderful afternoon excursion. His argument was as follows.

There are in the Stockholm district two other sets of glacial phenomena which independently seem to record successive seasons. The first is a series of rock-fragment ridges, obviously frontal moraines. One naturally interprets them as marking winter readvance positions of the ice front, which, owing to preponderant summer melting, was on the whole retreating. The second is a series of great mounds of sand and gravel, strung like giant beads in a chain running at right angles to the moraines. Here the inference seems justified that each mound represents the gradually retreating mouth-position of a persistently renewed summer sub-glacial river, discharging into the standing water of the Baltic. De Geer assured us that moraines, gravel mounds and varves are all convincingly related. Thus usually only one gravel mound is situated between each successive pair of moraines, as one would expect, since there is only one summer between any two successive winters. Also, in proceeding northwards across the moraines (keeping away from complications near the gravel mounds, which make observation difficult), one finds that the bottom varve of the local varve succession is always lost each time one crosses a morainic ridge.

This last claim obviously involves identification of individual varves. De Geer found on graphing his records of thickness for successions of varves exposed in neighbouring brick pits that he obtained curves of considerable character, with diagnostic groupings of maxima and minima. These curves he interpreted as in large measure a record of climatic vicissitudes. It was clear, at any rate, that they allowed of identification of certain well-characterized varves from pit to pit. Supposing that south of a particular moraine de Geer had established that the fifth varve from the bottom was of abnormal thickness, he always found that immediately north of the same moraine it was the fourth varve from the bottom that showed this abnormal character.

The above is only an outline of the beginning of de Geer's work. One remembers how he connected graph with graph, until he had compiled a year-and-climate record reaching from the time when glaciers melted from the site of Stockholm right on to the present day. One remembers, too, his selection of a year 0, when, according to his chronology, the Glacial Period terminated and Recent Times began. This year 0 is marked locally by a monster varve, attributed to the catastrophic drainage of the glacially impounded portion of Lake Storsjön on severance by melting of its retaining glaciers. At Storeidan in West Ragunda the resultant varve measures 980 mm. of clayey sediment. Again, one remembers time correlations with Iceland and the Great Lakes region of North America. One also remembers how de Geer's technique of graphing successive varve thicknesses has been applied with striking success to extracting history from the annual rings of trees, whether pines in Scandinavia or Sequoias in California. Finally, there is his observation that glacial varves are only found where summer floods have entered standing fresh water. Various explanations of this limitation of glacial varves to fresh water have been advanced.

In brief, de Geer created and maintained throughout his life-time a new sub-science. Fortunately, his main results are summarized in "Geochronologica Suecica: Principles", published in two fine volumes in English (Stockholm, 1940). This great work is dedicated to his wife, Ebba Hult de Geer, "since more than thirty years my indefatigable scientific partner during all expeditions, every kind of field-work and redaction unto the last proof-leaf". Those of us who are interested in geochronology know how much original research has entered into this invaluable and indefatigable partnership.

E. B. BAILEY.

### Mr. Hugh Whistler

By the death of Mr. Hugh Whistler at the early age of fifty-three, ornithology—and especially Indian ornithology—has lost a man of science who had already made his mark but who would undoubtedly have added greatly to his reputation had he been spared.

Hugh Whistler was born on September 28, 1889, and died on July 7, 1943. He was educated at Aldenham and when twenty years old entered the Indian Imperial Police. Choosing the Punjab as his Province, in a very short time his keen observation of Nature enabled him to add much to our knowledge of the distribution of birds in that and the adjoining Provinces.

In 1925 he married the Hon. Joan Ashton, daughter of Lord Ashton of Hyde, and had one son and one daughter. In 1926 he retired from the Indian Police to Battle, Sussex, where his ancestors had lived for many generations. Here he took a keen interest in local matters. He was on the Committee of the Sussex Archaeological Society.

His outstanding work is, undoubtedly, his "Handbook to Indian Birds", which, published first in 1928, has already passed through three editions, each an improvement on the last. Of more scientific importance, however, were his papers on the "Scientific Survey of the Eastern Ghats" (in collaboration with N. B. Kinnear); his "Hyderabad State Ornithological Survey" (in collaboration with Salim Ali); and his "Ornithological Survey of the Jodhpur State".

His first article was published in the *Bombay Natural History Journal* (22; 1911), a note on "the distribution of *Passer pyrrhonotus*", and from that time up to the date of his death he contributed sixty to seventy articles to that journal. In addition, after his retirement in 1926, he wrote frequent notes and articles for the *Ibis* which, though brief, were of considerable value.

In his notes to the Bombay journal and the *Ibis* he recorded additions to the Indian avifauna of *Motacilla alba leucocephala*, *Emberiza calandra*, *Luscinia suecica discessa*, *Panurus biarmicus (russicus)* and *Pitta megarhyncha schlegel*, while he also described as new *Zosterops palpebrosa salimalii*, *Pomatorhinus horsfieldi maderaspatensis* and *Passer domesticus parkini*. In recognition of his work the following birds, among others, were named after him: *Garrulax albigularis whistleri*, Stuart Baker; *Tarsiger chrysaeus whistleri*, Ticehurst; *Niltava sundara whistleri*, Ticehurst; *Horeites brunnifons whistleri*, Ticehurst; *Seicercus burkii whistleri*, Ticehurst; *Parus rufonuchalis whistleri*, Stresemann and *Sitta Himalayensis whistleri*, Delacour.

Whistler's work was characterized more than anything else by his "capacity for taking pains"; by his



extraordinary care over the most minute details, and by his methodical procedure in everything he undertook.  
E. C. S. B.

WE regret to announce the following deaths:

Mr. W. H. Hogg, since 1933 principal of Seale-Hayne Agricultural College, on July 29.

Sir Ralph Jackson, formerly chief veterinary officer in the Ministry of Agriculture, on August 2, aged seventy-one.

Prof. T. J. Jehu, emeritus regius professor of geology in the University of Edinburgh, on July 18.

Dr. C. J. S. Thompson, M.B.E., honorary curator of the Historical Collection of the Museum of the Royal College of Surgeons, aged eighty.

## NEWS and VIEWS

### Retirement of Prof. Raymond C. Archibald

Few scholars have a larger circle of personal friends among mathematicians on both sides of the Atlantic than Prof. Raymond C. Archibald, whose impending retirement is announced from Brown University. An official position in the American Mathematical Society has brought him into touch with every active mathematician of this century in America, while in the course of frequent and extensive journeys in Europe to ransack bookshops and visit libraries, he has taken every opportunity to make the acquaintance in their own countries of the men and women whose writings he already knew. Enthusiastic, persuasive and learned, he has made the mathematical section of the library at Brown University one of the finest to be found anywhere, and he has created there for mathematicians the surest source of bibliographical and biographical information in the world.

Prof. Archibald's published works include the definitive edition of one of Euclid's minor treatises, and the semi-centennial history of the American Mathematical Society, the latter a heavily documented volume incorporating twenty-seven biographical sketches. He is the author of a vast number of bibliographical articles, distinguished for an impersonal and uncritical thoroughness that conceals the toil and the knowledge that go to their compilation, and is, it must be confessed, sometimes carried to excess, for Archibald's modesty will not allow him to believe that if only, like Keynes and Muir, he would sometimes tell us after reading a paper that no one need ever read it again, others would gladly accept his judgment and be spared the tedium of making the discovery for themselves. Prof. Archibald has served for long periods on a number of editorial boards, and is now editing for the National Research Council of the United States the youngest of mathematical journals, *Mathematical Tables and Aids to Computation*. To Prof. Archibald, retirement will not spell indolence. It need scarcely be said that his expert advice will still be available in the library which he has made famous, he is continuing in his latest editorship, and he hopes to devote the time saved from routine to perfecting the organization of a library of English and American poetry and drama which he has been developing at Sackville since 1905 in memory of his mother. Increased leisure, if miraculously he achieves it, will mean enhanced opportunities to cultivate a second passion, for he is not merely a lover of music but also a musician of exceptional skill, who might easily have become a professional violinist and remained an amateur in mathematics. May he long enjoy a strenuous life.

### Higher Education in the British Colonies

THE Colonial Office announces that the following Commission is to inquire into higher education in the Colonies: Sir Cyril Asquith (chairman); Sir Donald Cameron, formerly Governor of Nigeria; Prof. A. M. Carr-Saunders, director of the London School of Economics; Prof. H. J. Channon, professor of biochemistry, University of Liverpool; Sir Fred Clarke, director of the Institute of Education, University of London; Mr. J. F. Duff, vice-chancellor of the University of Durham; Lord Hailey, chairman of the Colonial Research Committee; Prof. A. V. Hill, M.P., secretary of the Royal Society; Sir James Irvine, vice-chancellor of the University of St. Andrews; Sir Richard Livingstone, president of Corpus Christi College, Oxford; Dr. R. Marrs, formerly principal of University College, Colombo; Miss L. H. Penson, professor of modern history, University of London; Miss Margery Perham, director of Colonial research, Nuffield College, Oxford; Prof. J. A. Ryle, professor of social medicine, University of Oxford; Dr. R. V. Southwell, rector of the Imperial College of Science and Technology; Dr. J. A. Venn, vice-chancellor of the University of Cambridge. The terms of reference of the Commission are: "To consider the principles which should guide the promotion of higher education, learning, and research and the development of universities in the Colonies; and to explore means whereby universities and other appropriate bodies in the United Kingdom may be able to co-operate with institutions of higher education in the Colonies in order to give effect to these principles".

A further commission of inquiry into higher education in British West Africa has been announced. It consists of Colonel Walter Elliot, M.P. (chairman); Prof. H. J. Channon, University of Liverpool; Mr. A. Creech Jones, M.P.; Mr. J. F. Duff; Sir Geoffrey Evans, of the Royal Botanic Gardens, Kew; Dr. Julian Huxley; Mr. K. A. Korsah, unofficial member of Executive Council, Gold Coast; the Rev. Ransome Kutu, headmaster, Abeokuta Grammar School, Nigeria; Miss E. C. Martin, vice-principal of Westfield College, University of London; Prof. B. Mount-Jones, vice-chancellor of the University of Leeds; Miss Margaret Read, acting principal of the Colonial Department, Institute of Education, University of London; Dr. E. H. Taylor-Cummings, medical officer of health, Sierra Leone; and Prof. A. E. Trueman, professor of geology, University of Glasgow. It is also to include a member with wide administrative experience in tropical Africa. This Commission is to report on the organization and facilities of the existing centres of higher education in British West Africa and to make recommendations regarding future university development in that area.