in years near sunspot maxima are very desirable. Observations to reduce atmospheric potential gradients to volts per meter over level ground are much needed. It is also most important to investigate the magnetic properties of rocks from all over the earth, and from different geological ages. An instrument to measure the vertical intensity of the earth's magnetic field in absolute measure is much to be desired.

The American proposal to approve explorations of the oceans was adopted by the section of hydrology and by the general assembly. Biological oceanographers have been admitted to this section.

The committee on glaciers, which was appointed by the International Geological Congress, has lapsed since the beginning of the war. The section of hydrology of the Union wishes to take up the problems of the variations of glaciers, and the Union made a small appropriation to enable Professor Mercanton, of Switzerland, to consult with members of this section and devise some means of continuing the records.

None of the American delegates was able to attend the meetings of the sections of vulcanology, oceanography or hydrology. This emphasizes the importance of making provision for at least one American delegate to each section at future meetings of the Union.

The arrangements for the entertainment of the delegates and their families were most elaborate. The king and queen of Spain received them at the royal palace; and the mayor of Madrid held a reception at the mayoralty. The reception committee (Sen. D. L. Cubillo, Chairman, Sen. D. J. Galbis, Secretary) were indefatigable in their efforts. Excursions were made to the most interesting places in the neighborhood of Madrid, including the city of Toledo, all at the expense of the committee; a concert was given at the opera house, the bull ring and the museums were thrown open; and the meetings closed with a banquet at the Hotel Ritz. I do not think such lavish hospitality could have been tendered in any other city of the world. After the meetings excursions were arranged to the cities of southern Spain and to the eastern coast; everywhere the hospitality was most generous.

The next general assembly of the Union will be held at Prague in 1927.

HARRY FIELDING REID
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IN MEMORIAM: SIR THOMAS CLIFFORD ALLBUTT
(1836–1925)

SIR THOMAS CLIFFORD ALLBUTT, Regius Professor of Physic, in the University of Cambridge, died, during sleep, on the night of February 22, 1925, at the age of 88. He was born on July 20, 1836, at the vicarage of Dewsbury (Yorkshire), the last resting place of Robin Hood. His father, the Rev. Thomas Allbutt, was a clergyman of great influence in the West Riding and the author of various religious books. The son was educated at St. Peter's, York, and at Caius College, Cambridge (1855–60), where he held several scholarships and won the Natural Science Tripos, first class, in 1860. During 1859, he was the clinical clerk of the celebrated Bence Jones, of proteinuria fame, at St. George's Hospital (London), and, by his advice, followed the lectures of Trousseau at the Hôtel Dieu (1860), the clinics of Bazin at the St. Louis (dermatology) and of Duchenne in the Boulevard des capucins (neurology). In 1861 Allbutt was elected physician to the Leeds Fever Hospital, passing over to the Leeds Infirmary in 1864, and then successively to the Belgrave Hospital for Children (London), the King Edward VII Sanatorium (Midhurst) and the Addenbrookes Hospital (Cambridge). In 1892, he was appointed to the Regius professorship at Cambridge (established 1540), which post he held until his death.

The newspaper obituaries of Allbutt defined him as "an eminent British physicist," as he was the inventor of the short, self-registering, pocket clinical thermometer which came into vogue in 1868. Sir Clifford was, however, deeply read in modern physics, and this invention in particular was based upon his reading of Wunderlich's classic on temperature in disease (1868), which established clinical thermometry, and was based, in its turn, upon the thermodynamic principles which led William Thomson (Lord Kelvin) to establish an absolute scale of temperature for thermometry (1849). The earlier clinical thermometers were cumbersome contrivances, nearly a foot long, and were, in consequence, little used. Allbutt's invention made bedside thermometry a going concern. He was the first to describe the articular lesions in locomotor ataxia (1869), suppressed an epidemic of typhus fever by bold fresh air treatment, described the first case of Charcot's joint in England, as a member of the Alpine Club did much for the mountain cure of phthisis, and was instrumental, with the surgeon Wheelhouse, in introducing paracentesis of the pericardium (1866). His writings, which abound in subtle clinical minutiae, include his lectures on physical overstrain of the heart (1871), which was translated into German, on ophthalmascopy (1871), on auscultation of the esophagus (1875), the Goulstonian lectures on visceral neuroses (1884), the Lane lectures on heart disease (1896) and his two volume monograph on diseases of the arteries (1915). Following the tradition of Harvey, it was inevitable that English physicians should specialize

in the physiology and pathology of the circulation, and these volumes are a summation of Allbutt's vast knowledge, replete with historical allusions on every page. In the history of medicine, Allbutt was, in fact, the most distinguished modern English scholar. His books on "Science and Mediæval Thought" (1901), on the "Historical Relations of Medicine and Surgery" (St. Louis lectures, 1905), his Fitzpatrick lectures on Greco-Roman Medicine (1909–10) and his Finlayson lecture on Byzantine medicine (1913), both contained in the volume "Greek Medicine in Rome" (1921), are each of them masterpieces in the best sense of the term, the fruits of sound scholarship set forth in a literary manner of the most pregnant, stimulating and thought-compelling kind. His "Notes on the Composition of Scientific Papers" (1904) constitute a kind of text-book on the use of words and the art of writing which, with his tract on Professional Education (1906), have exerted wide influence. He was the editor of deservedly famous systems of medicine (1896–8, 2 ed., 1906–11) and gynecology (1896; 1906), and contributed the article on history of medicine to the Encyclopaedia Britannica (11 ed., 1911).

During a professional activity of some 65 years, Allbutt rendered distinguished public service on all sorts of committees and commissions, was vice-president of the Royal Society in 1914–16, and presided, with charm, at the celebration of Osler's seventieth birthday. His presidential address before the British Medical Association in 1920 will be long remembered for its large view of the future of scientific medicine.

In his lectures on Byzantine medicine, Allbutt, like Mommsen, views the Greeks as an intelligencia *in excelsis*, but without political talent, deifying the individual at the expense of the state. His own mind was of that cast, tending, as in his phrase about Galen, "to lose the universal in the particular." Reading Allbutt is like playing Bach or Brahms, an intellectual game requiring mental powers of the utmost refinement. In a series of "Letters to Eminent Persons," published in 1917, Allbutt is addressed as a happy combination of the essential scholar and man of the world, learned but cosmopolitan, urbane but detached and dignified, "the firm possessor of that subtle alembic something which the cognoscenti demand before they will concede the title of gentleman," yet ineffectual through this very refinement, which manifested itself, as in the case of Browning or Henry James, by "a slight tendency to prolixity."

> Nevertheless [the pseudonymous scribe goes on to say], this note of detachment has stood you in good stead. It has permitted you to "talk with crowds while keeping your virtue," and "walk with kings" without losing such of "the common touch" as it was in you to possess. It enabled you to be a Censor of the Royal College of Physicians without becoming in any degree soiled by the soot of snobbery which hangs like a pall over Pall Mall East, to concentrate, ever and anon, in comic negro-minstrelsy upon the Censors Board. They never made you their president, these paltry panjandrums, because they dared not. And they dared not because, being what you are, your large learning would have emphasized their mental mesquinerie; and being the gentleman that you are, you would have brought into pitiless prominence their puny, pretentious plebeianism.[1]

Allbutt was, in fact, the spiritual aristocrat in medicine, just as Osler was an essential democrat in professional relations, gregarious and fond enough of people to be sometimes victimized by them. Neither of these high-souled gentlemen were politicians, *i.e.*, wheedlers and victimizers of their fellowmen. Allbutt's aloofness was that of the scholar lost in his subject, as shown by his lively sympathy with such American traits as the Chicago placard for infant welfare, "Give the Baby a Square Deal!" Judging by a correspondence of some fifteen years, I have never known a kindlier, serener soul. His first letter to me was a spontaneous illuminating criticism of an amateurish maiden effort on the terminology of disease, so encouraging and *eingehend* that I at once ransacked the literature for his articles on the subject. On this terrain he was unrivalled, his only possible competitor being William Farr, whose classification of diseases was adopted by Billings and Fletcher in the Index Medicus. Leaving Allbutt's work on internal medicine to the experts and his historical writings to the inevitable delight of all cultivated physicians, a few words on his three essays on classification (1867, 1888, 1906) may not be amiss. They are *Zukunftsmusik* of an aspiration so exalted as to be, in mathematical phrase, asymptotic; wonderful visions into the medicine of the future which it will require post-bellum medicine (visibly "limping across the state line") many decades to realize. We are to classify diseases of men, animals and plants on a scheme of comparative nosology based simultaneously upon their hereditary, historical and geographical relations and upon the findings of experimental medicine, a polyphonic method suggesting Ousspensky's Tertium Organum. Yet Allbutt is keenly aware that the data for such an orchestration of thought are, as yet, only scattered and fragmentary.

> Gout and cancer are autogenous, smallpox and ague extraneous in origin; in phthisis, the extraneous cause is a touchstone of diathesis. All diseases of modern peoples become neurotic in type, as Cullen surmised. Changes in types of disease are due to this fact and to the racial (*i.e.*, chemical or metabolic) complexion of peoples.

[1] Med. Press. and Circ., Lond., 1917, CIII, 199.

Diseases must be studied in family trees. There are even pathological races of people, set off by atavism. Each disease is only a member or term of a series—*e.g.*, the rheumatic series (purpura, urticaria, pemphigus, erythema, endocarditis, chorea, arthritis), or the gouty series (dyspepsia, arthritis, phlebitis, arteritis, nephritis, angina pectoris, migraine, hypochondria, insanity, eczema, glycosuria, neuritis, bronchitis, tonsillitis, haemorrhoids, purpura). Fever is a thermo-ataxia. Gout implies the metabolism of a bird. Infection and immunity are analogues of impregnation and sterility in sexual congress. Each locality or race has diseases peculiar to it. Each tropical country has its own kind of tropical medicine. Malarial fever in a locality usually connotes infrequency of cancer, typhoid, phthisis, insanity (neurosyphilis) and epilepsy. Poisons of active principle (acid) type produce hyperthermy, poisons of alkaloidal (basic) type hypothermy. Curare turns a mammal into a cold blooded animal. Poisoning and dextoxication turn upon isomerisms and molecular vibrations.

That all this was written over 35 years ago is a measure of the splendid scientific scholarship of Allbutt. Alas! that medical literature should be a motley proliferation of the well-born, the plebeian, the upstart and the bounder; that Starling's classification of physiology should tuck titles into wonderfully considered compartments where only Starling can find them;[2] and that we must still stick to the old caravansary plan of Billings and Fletcher, with suites, bedrooms and cubby-holes for all and sundry. By 1906, Allbutt himself had come around to this view: "The best labels for diseases are such names as epilepsy, measles, leprosy, Graves's disease and the like, which, having no attachment to hypotheses, are readily carried to new anchorages."

Three mental traits distinguished Allbutt: an innate and almost touching modesty, a fitting reverence for the past, the liveliest sympathy with the present and the future. His Finlayson Memorial Lecture begins: "I would that my lecture to-day were more worthy of him." His Harveian Oration concludes: "We celebrate the memory of great men in the certain hope that in their children they will be born again." His message to the future is that the wars and squabbles of mankind are due to mistaking the names and labels (personal opinions) of things for the things themselves, and that "almost any reform is possible so long as names are not touched." Our rough-neck post-bellum world will not find his match in noblesse of mind and nobility of character.

F. H. GARRISON

ARMY MEDICAL MUSEUM

[2] International Catalogue of Scientific Literature, Schedule of Classification, Q.

SCIENTIFIC EVENTS

JOHN FILLMORE HAYFORD

THE following minute has been adopted by the Chaos Club of Chicago:

In the passing of John Fillmore Hayford on the tenth of March, 1925, the Chaos Club has lost an esteemed member, a genial and friendly companion, an earnest devotee of research, a productive scholar.

Professor Hayford's training as a civil engineer prepared him directly for his life work which he found in the field of geodesy. His high regard for accuracy, his fine sense of good method in assembling and discussing data, his unlimited perseverance in pursuing a problem, his experience in field work, equipped him in an eminent degree for the enormous task of fitting an ellipsoid to the surface of the earth. Recognition is now given to the success of this work in the adoption of the Hayford ellipsoid by the Geophysical Union at the recent meetings in Madrid. It will now serve as the basis of reference for all the great national surveys.

Perhaps no less important than his determination of the size and figure of the earth is his work on isostatic compensation within its surface. His careful discussion of available data led to the substantiation and acceptance of the principle of isostasy.

Aside from his great service in the Coast and Geodetic Survey, he devoted his labors to engineering education. He was an instructor in civil engineering at Cornell University from 1895 to 1898, and in 1909 he came to Northwestern University as director of the newly organized School of Engineering. His clear conception of the proper relation of his profession to society and his keen appreciation of the value of research work, his own indefatigable labor were conspicuous qualifications for such an appointment.

While at Northwestern University he had devoted himself to the very difficult problem of the surface levels of the Great Lakes, the source of supply, evaporation, periodic fluctuations, effect of winds and barometric pressure, seiches. Reports have been made on some phases of this very intricate problem, but unfortunately it remains unfinished.

Professor Hayford's counsel was in demand in various fields of engineering; he served on a commission to determine the boundary between Panama and Costa Rica; he was a member of the National Advisory Committee for Aeronautics; he was greatly interested in the Society for the Promotion of Engineering Education; he was an author of valuable text-books; his voice was heard in many geodetic conferences. He was scholarly by every instinct and according to every standard of measurement, and of his students demanded the like. He was a valuable citizen, giving loyal, enthusiastic and unsparing service to his government in peace and in war, to the community, and to society.

The members of the Chaos Club wish to express their feeling of deep loss and to extend their sympathy to Mrs. Hayford and the other members of Professor Hayford's family.