

## News and Views

## Dr. Alfred Harker, F.R.S.

ON February 19, Dr. Alfred Harker, emeritus reader in petrology in the University of Cambridge, attains his eightieth birthday, and petrologists throughout the world will join in offering their congratulations. Graduating from St. John's College in mathematics in 1882, he had already come into contact with Prof. McKenny Hughes, and was shortly appointed to the staff of the Woodwardian Museum. His earliest original work dealt with the development of cleavage in slates; but he soon turned to petrographic work on the igneous rocks of North Wales, with a series of publications culminating in the Sedgwick prize essay on "The Bala Volcanic Series". In the Lake District, he began (with J. E. Marr) a study of the Shap granite and its aureole, and later of Carrook Fell. During this period also appeared the first edition of "Petrology for Students", now in its seventh edition. From 1895, Harker was for ten years attached to the Scottish branch of the Geological Survey of Great Britain, and worked in Skye and the Small Islands of Inverness-shire, collaborating in the production of the official maps and memoirs, and writing a special memoir on "The Tertiary Igneous Rocks of Skye". Much of this work was necessarily descriptive, and the genetic considerations to which it gave rise were brought together in "The Natural History of Igneous Rocks", a pioneer work on petrology in its treatment of rock-magmas as complex solutions. As president of the Geological Society, he expanded further in his address in 1917 the significance of igneous activity as an integral part of the historical geology of Britain. The central themes of his address the following year, that metamorphism is to be conceived as a progressive change, and that Great Britain offers unique opportunities to investigate such changes, find fuller expression in his book, "Metamorphism", published in 1932. Since his retirement, Dr. Harker has remained actively associated with the petrological collections at Cambridge, where the Harker collection of rock-slides now numbers forty thousand sections. He was awarded the Wollaston Medal of the Geological Society of London in 1922 and a Royal Medal of the Royal Society in 1935.

## Prof. František Nušl

IN honour of Prof. F. Nušl, director of the National Observatory of Prague and professor in the Charles University, who has entered on his seventieth year, a composite work has been compiled with the title "Práge věnované Dr. Františku Nušlovi". Prof. Nušl's interest in astronomy is well known; he was vice-president of the International Astronomical Union for the Leyden meeting held in 1928. His circumzenithal instrument for the determination of time was described before the Czech Academy in Prague (see NATURE, 68, 376; 1903) and also in a number

of other papers. Twelve authors have contributed to the volume and their papers embrace a wide range of subjects. Z. Kopal discusses the two-bodies problem where the central body is an oblate spheroid, not homogeneous, and shows that a steady advance of periastron will take place. V. Guth develops a graphical method for determining the heights and paths of meteors, and J. Štěpánek has a most interesting paper showing the results of photographing Comet Finsler (1937 *f*) from July 13 until August 15, 1937. It is easy to follow the developments of various parts of the head and tail of the comet by examining these photographs, and also the variations of the different luminous rays. J. Procházka explains his method for investigating the stability of the Bouty meridional telescope at Paris by means of two auxiliary telescopes provided with micrometers, and has found that the stability of the instrument is excellent. J. Svoboda supplies a detailed account of his experimental method for finding the personal error in observations with the Nušl-Frič circumzenithal instrument. Z. Horák deals with Svoboda's method for determining the radiant of a meteor stream with a minimum of error, and towards the end of his paper shows how very satisfactory results can be obtained by a graphical method. These as well as the other papers, with all of which it is impossible to deal in the limited space, form most interesting reading.

## Centenary of the Cell Theory

THE centenary of the cell theory is marked by an article from the pen of Prof. William Seifriz, professor of botany in the University of Pennsylvania, in the recent issue of *Chronica Botanica* (4, No. 6, December 1938). The original theory as propounded by Schleiden and Schwann was faulty; but the immediate theory was, like many other theories, of far less value than the truths which it has been instrumental in ultimately bringing to light. The authors advanced the theory that all organisms are aggregations of structural units or cells; but in his cautiously worded article Prof. Seifriz warns biologists that disciples of the theory tend to attach far more meaning to this than perhaps even its originators intended. The theory established a universal principle of development in living matter; to follow the principle slavishly, in the light of modern knowledge, is wrong; but there is, according to Prof. Seifriz, a tendency to do so. Many biologists seem averse to remoulding their speculations with the advancement of knowledge. Another weakness in the theory is that the cell is viewed as an elementary individual with an autonomy all its own. But this conception is very limited, since the cell is invariably influenced by its environment, such as solutions, temperature, and even the proximity of other cells. That is, the cell is far more plastic than the cell theory would

allow. As Prof. Seifriz emphasizes: "The laws of science as formulated by man are to be commended, even the worst of them, because of the influence they have on further speculation, but they are at best but speculations. . . . In this light must we view the cell theory. Flexibility in thinking comes through mellowness in character and greater willingness to view matters philosophically."

IN a less critical, though historically more detailed, article, in the recent issue of *Current Science* (7, No. 6, December 1938), Mr. E. W. Melson, of the Bausch and Lomb Optical Co., Rochester, New York, claims that the cell theory has been followed by such a wealth of confirmation that we are justified to-day in rating it as the most fundamental concept in the whole science of modern biology. He gives interesting facts concerning the aberrations on cells made by Hooke, Swammerdam, Malpighi, Van Leeuwenhoek and Wolff. They, together with others mentioned, collected much data concerning cells. They undoubtedly saw them and probably their nuclei; but the significance escaped them. Dutrochet published in the eighteen twenties much material which showed his clear conception of the anatomical identity of the cell. In fact, it seems that it was Dutrochet's experiments on physiology which made the recognition of the cell as a structural, functional and developmental unit a necessity. But the nucleus was left out. Schleiden's greatest contribution rests on his recognition that increase in the size and number of cells is responsible for growth, and Schwann's his statement that "The elementary parts of all tissues are formed of cells in an analogous, though very diversified manner, so that it may be asserted that there is one universal principle of development for the elementary parts of organisms, however different, and that this principle is the formation of cells. . . ." But we feel, with Prof. Seifriz, that biologists tend to be incautious of the theory, especially in elementary biological teaching, and do not realize sufficiently that neither Schleiden nor Schwann had at their disposal present-day knowledge of nuclear structure, mitotic division and all the modern concepts in genetics and cytology.

#### Evidential Value of Blood Groups in Litigation

THE debate on the second reading of the Bastardy (Blood Tests) Bill, introduced by Lord Merthyr, which took place in the House of Lords on February 8, was no less noteworthy for the tribute paid by Viscount Dawson of Penn to the work of Mendel in the study of inheritance than for the cogency of the arguments with which his Lordship supported the objects of the legislation proposed. Clause 1 of the Bill states that in applications for affiliation orders a court may, and at the request of either party shall, order a test to be made of the blood of all three parties in the case. Lord Dawson's insistence on the urgent desirability of substituting objective evidence for the human and subjective in this class of legal action, which is peculiarly open to the danger of a miscarriage of justice—a contention in which he was followed with characteristic vigour

by Lord Raglan—will be welcomed by all who concur in the view that the scientifically attested fact is the surest guide to right judgment. At the same time his recapitulation of the scientific evidence, on which confidence in the blood group test is based, will both inform public opinion as to its potentialities, while removing certain popular misconceptions as to its scope by the emphasis laid on its limitations. It was pointed out by both Lord Merthyr and Lord Dawson that the blood test provides no more than negative evidence, that is evidence of non-paternity, to the extent, it is estimated, of 30 per cent of innocent men. In the course of the debate it was pointed out that the application of the test in this connexion had been widely adopted in other countries and its supporters "were culled not from the scientists of one country, but from the whole civilized world". "It was," it was said further, "a slur on the medicine and law of this country that we were so long in adopting something so completely proved". The Bill was referred for inquiry to a Select Committee of the House; but the Lord Chancellor in summing up the arguments, mostly of a practical nature, against adoption of the Bill, accepted Lord Dawson's scientific view as "completely reliable".

#### New Explanation of the Great Glen Fault

THE powerful dislocation which intersects Scotland in a north-east and south-west direction along the line of the Great Glen has usually been interpreted by geologists as a normal fault with a vertical down-throw on its south-eastern side. In an important paper read before the Geological Society of London on February 8, however, Dr. W. Q. Kennedy brought forward new evidence which leads him to believe the fracture as a strike-slip or wrench fault with a true lateral displacement of approximately 65 miles. It belongs, therefore, to the same class as the San Andreas rift of California and, like the latter, presumably extends downward at least to the base of the earth's granitic shell. This conclusion is supported by several independent lines of evidence. (a) The Great Glen fault belongs to the same system as the Strathconan, Ericht-Laidon and Loch Tay faults, all of which have proved lateral displacements of up to five miles. (b) It possesses characters unlike those of a normal fault but similar to other strike-slip dislocations (for example, singularly smooth, straight outcrop and abnormally wide shatter-belt). (c) It displaces the great north-south injection belt of the Moine Series for a distance of at least sixty miles. (d) It truncates the Strontian granite, the southern portion of which, according to the detailed structural evidence, is missing. The missing half, however, has now been identified in the Foyers granite, which outcrops on the other side of the fault some sixty-five miles to the north-east and is similarly truncated by the fracture. These two intrusions consist of identical rock-types and agree in all details of internal and external structure. This interpretation clarifies certain obscure features of Scottish geology and serves to explain the southern continuation of the Moine Thrust in Islay. The fault is still active but the main lateral movement appears to have been