

which have come increasingly into prominence of late years, may be more adequately met.

It should be scarcely necessary to press the claim of the Association in further detail. The position which it has won by its work during the past hundred years is a sufficient warranty of its deserts and of its fitness to administer wisely any funds committed to its charge. On the ground of its services to science and to the community, the Association has well earned the right to expect the support for which it asks.

The greater part of the Bristol meeting of the British Association was favoured by fine weather, of which full advantage was taken by all the sections. Owing to the easy access of many points of special interest, these purely sectional excursions were more fully organised than is usually the case. The Norman Lockyer Observatory at Sidmouth was visited by a party of physicists and astronomers, while Wookey Hole and the Mendips attracted geographers, zoologists, geologists, and anthropologists. The Forest of Dean was included with other excursions by botanists. In the sections themselves, apart from the presidential address, physicists listened with great interest to a summary of the present state of the theory of cohesion by Prof. Lennard-Jones, who showed that through the new mechanics a most promising theory is at last in the process of development. The subject of the present position of the British dyestuff industry provoked an important discussion in Section B, to which many well-known academic and industrial chemists contributed. The memorial lecture to Dr. Beddoe by Sir Arthur Keith emphasised the important anthropological work which has been and is still being done in Bristol, which Sir Arthur pleaded should be recognised by the foundation of a chair in that subject in the University. Airships, both British and German, naturally attracted engineers in Section G; while members had an opportunity of seeing the gyroplane in action at the new Bristol airport. The largest available theatre was filled for a joint discussion between geology, geography, and anthropology, on the relation between past pluvial and glacial periods, under the chairmanship of Prof. Fleure.

The following were included amongst the foreign guests present at the meeting: *Section A* (Mathematical and Physical Sciences): Prof. R. S. Mulliken (Chicago), M. R. Bureau (Paris), Prof.

M. Siegbahn (Uppsala), Prof. Van Vleck (Wisconsin); *Section B* (Chemistry): Prof. J. H. Hildebrand (Berkeley, California); *Section C* (Geology): Prof. G. Delépine (Lille); *Section D* (Zoology): Prof. D. de Lange (Utrecht); *Section E* (Geography): Prof. A. E. Douglass (Tucson, Arizona); *Section G* (Engineering): Prof. A. E. Kennelly (Cambridge, Massachusetts); *Section H* (Anthropology): Prof. E. Fischer (Berlin-Dahlem), Dr. M. Vassitz (Belgrade); *Section K* (Botany): Prof. T. H. Goodspeed (Berkeley, California), Prof. D. H. Campbell (Stanford, California), Prof. W. J. V. Osterhout (New York), Prof. F. A. F. Went (Utrecht).

The total membership for the Bristol meeting was 2650.

The General Committee of the Association has approved the arrangements made by the Council for the centenary meeting to be held in London next year. The president will be the Right Hon. J. C. Smuts, and a long list of vice-presidents prepared by the Council, together with a representative London Committee, was also accepted by the General Committee.

As the Albert Hall will not be available for the inaugural meeting in London, the Council booked the Wesleyan Central Hall and annexes for this meeting. The General Committee approved of this and also of the proposal that the inaugural meeting should be devoted mainly to receiving addresses and other messages, the president-elect finally addressing the meeting. His presidential address will, however, be delivered on a separate occasion, namely, the final evening of the meeting, Tuesday, Sept. 29. The reception room, sectional meeting rooms, etc., will be in and near Exhibition Road, South Kensington, at such institutions as the University of London, Imperial College of Science, Imperial Institute Science Museum, Victoria and Albert Museum, Royal College of Music, and the Royal Geographical Society.

The new members of Council elected by the General Committee are: Prof. H. Clay, Prof. W. T. Gordon, Dr. C. W. Kimmins, Sir Peter Chalmers Mitchell, and Dr. H. T. Tizard.

The meeting of the Association in 1932 will be held at York, and in 1933 at Leicester. The Lord Provost of Aberdeen and the Principal of the University, Sir George Adam Smith, attended the meeting of the General Committee on Sept. 5 to invite the Association to meet at Aberdeen in 1934, and the invitation was unanimously accepted.

### News and Views.

THE fact that definitely anti-social actions have been committed under the cloak of rationalisation is responsible for many of the misgivings with which labour regards the rationalisation of industry. Moreover, the displacement of workers by machinery has led to some distrust of science by labour. Labour-saving machinery is too often labour-displacing machinery, and although mechanical science is gradually eliminating from industry many of the most unhealthy and exacting conditions of labour, notably in the mining

and metallurgical industries, science is often held responsible for creating unemployment. Labour frequently fails to realise that originative discoveries of science create new demands and open fresh avenues of employment in which displaced labour is absorbed. Such discoveries are, of course, those with which science is most closely associated. In this connexion, addresses such as that given by Sir Richard Gregory on Sept. 7, in connexion with the Bristol meeting of the British Association, before the Bristol Branch of the

Independent Labour Party on "Science and Labour", are particularly valuable at the present time as tending to bridge a gulf which, since the days of Darwin, Huxley, and Kingsley, has gradually developed between science and labour.

SIR RICHARD GREGORY referred in his address to the development from fundamental scientific discoveries, such as those of Faraday and Cavendish, many of which were regarded as of no practical value when made, of a wide range of new industries—electrical engineering, the fixation of atmospheric nitrogen, automobiles, aviation, metallic filament lamps, the gramophone, and the many branches of wireless telephony. In every one of these cases the application of scientific discovery has resulted in increased employment and frequently has been accompanied by an increase in the pleasures of life. It may well be that the future of civilisation largely depends on the ability of science once again to co-operate with labour. Unsatisfactory social conditions are often a consequence of incapacity to use aright the results of scientific advances. Such incapacity is frequently due to the political impotency of scientific workers and their failure to co-operate, and the re-establishment of harmony between science and labour would do much to remove that political weakness. Such co-operation and harmony can, however, only be achieved by scientific workers demonstrating, as Sir Richard Gregory does in his address, that science is not merely mechanical invention but rather creative knowledge which enables man to control his environment, and by their participation in social movements as citizens whose motives are above suspicion and whose knowledge is at the service of the community for the promotion of the greatest good.

PROF. T. E. GREGORY'S presidential address to Section F (Economic Science and Statistics) of the British Association, on "Rationalisation and Technological Unemployment", which was read in his absence on Sept. 8, is welcome indication that the Association recognises not only a duty to inform the general public on all scientific advances but also a corresponding obligation to assist in the control and solution of some of the problems created by such discoveries and their applications. The international character of the rationalisation movement and its undoubted effect in most cases in reducing the cost per unit of output make it impossible for any single country engaged in international trade under competitive conditions to contract out of its consequences except at the expense of its international trade. Since rationalisation effects a lowering of real costs, given a desire for a rising standard of life, Prof. Gregory believes there is no reason to suppose that the volume of unemployment will not again fall. The most optimistic view of the situation, however, must recognise that a grave transfer is involved and the difficulties may be accentuated by monetary and other independent circumstances. Scientific workers have no right to delude themselves into thinking that a new era of orderliness will come automatically, and must concern themselves much more seriously about the use or misuse of the new

knowledge they have acquired and the social consequences of the improved methods of production which mechanical invention has developed. Increased productivity may tend to enhance the problem of unemployment, even if only temporarily, but it provides society with the margin of lower prices and increased leisure out of which unemployment can be relieved. The better use of the arts of production made possible by scientific methods and investigations is unlikely to endanger the organisation of society unless the process is applied with a wanton disregard of the injury which may be inflicted upon other industries or upon the workers rendered superfluous.

SIR ARTHUR KEITH'S Beddoe Memorial Lecture, which was delivered in the course of the meeting of the British Association at Bristol, and of which we print a summary elsewhere in this issue, was an eloquent affirmation of the enduring value of the work of this great pioneer. Beddoe's originality and vision, as well as his patience in inquiry, place him in a rank apart among the greatest of the anthropologists of the nineteenth century. It was only fitting that Sir Arthur should couple his appreciation of Beddoe with a strong plea for the institution of a chair of anthropology in the University of Bristol. The work of the Spelæological Society has shown that enthusiasm for the subject and the true spirit of inquiry are there among the members of the University. Bristol presents opportunities for anthropological investigation that are unrivalled. As a gateway of Britain from the earliest times to the present day it holds a key position. The caves of the Mendips; the lake-villages of Glastonbury and Meare; the traditions of early contact with Ireland, hostile and otherwise; the ethnology, archaeology, and folklore of the border counties of Wales—these are some only of the fields in which we should look to the University for enlightenment. Of the practical considerations in relation to civic affairs upon which Sir Arthur touched it is unnecessary to enlarge. To a public-spirited business community such as the City of Bristol, they should carry conviction without further emphasis.

THE report submitted at the Bristol meeting of the British Association to Section D (Zoology) by the subcommittee appointed to inquire into the position of animal biology in the school curriculum is, on the whole, encouraging: for there is evidence that biology is receiving wider recognition as a subject of educational value. It is a hopeful sign that a committee of the Economic Advisory Council has been appointed "to consider the obstacles which stand in the way of the education and supply of biologists for work in this country and overseas, and to submit recommendations for the removal of such obstacles". The British Social Hygiene Council, too, is pressing the claims of biology, and the Colonial Office is awake to the importance of the subject. All the examining bodies, with the exception of the Oxford and Cambridge Schools Examination Board, which is understood to have the matter under consideration, now provide syllabuses in biology for the school certificate examination. The percentage of candidates offering biology in this examination has been steadily

rising for the last seven years, and that of those offering botany as steadily falling. But unsatisfactory features in this report are the statements that the great majority of the biological candidates are girls, very few boys' schools taking biology in the school certificate examination; and that the shortage of men teachers with biological training persists. The vicious circle has not yet been broken down. The report suggests remedially the institution of general honours degrees, which four of our universities do already confer, by all universities as alternatives to the existing special honours courses. To this may be added the recommendation that all colleges in the residential universities should accept biology as a subject in their entrance examination. The refusal of some colleges to do so is a serious obstacle to the supply of biologists.

ON Sept. 5, Section B (Chemistry) of the British Association devoted the whole morning session to a discussion on the present position of the British dyestuff industry. Prof. A. G. Green, formerly director of research of the British Dyestuff Corporation, who opened the discussion, surveyed the position of the industry up to the time of the Dyestuffs (Import Regulation) Act, which came into force in January 1921 for a period of ten years. Since that date, the dyestuffs industry in Great Britain has made great strides; it now supplies 25,000 tons of dyestuffs annually, or about 11 per cent of the world's requirements. While the proportion supplied by Germany, Switzerland, and the United States has remained constant in the past few years, the British contribution has increased from 8.9 per cent in 1925 to 11.7 per cent in 1928. Prof. Green is of opinion that a further period of State assistance is both justified by past progress and by the present world position. Prof. J. F. Thorpe emphasised the need for the production of new dyes for new fibres coming into use, and referred in particular to the inevitable interdependence of flourishing schools of research in organic chemistry and a stable and vigorous dye-making industry. Sir William Pope also discussed the effect the Dyestuffs Act has had in promoting the training of chemists for all branches of industry. The industrial side was dealt with by Mr. J. Morton, of Scottish Dyes, who pleaded that the industry has justified the continuation of the Dyestuffs Act; but Sir Joseph Turner, managing director of the British Dyestuffs Corporation, urged that the Act has served its purpose and should be allowed to lapse.

THE third triennial conference of the Pathological and Bacteriological Laboratory Assistants' Association was held in the Medical School of the University of Manchester on Aug. 25-29. It was opened by Prof. W. H. Lang, pro-vice-chancellor of the University, who expressed appreciation of the skilled assistance rendered by the laboratory assistants in scientific work. Workers often do express their indebtedness to their assistants when contributing to the medical and scientific journals. Prof. Lang hoped that the time was close at hand when the laboratory assistants of other sciences would attach themselves to the

Association. The following papers were read at the conference: H. R. Hardie (London), the development of chemistry, from alchemy to biochemistry; P. H. Osmond (Liverpool), the pathogen selective culture method; S. G. Laws (Uganda), a simple flocculation test for the diagnosis of syphilis; R. J. Bromfield (London), equipping a biochemical laboratory and selecting biochemical methods; D. B. Colquhoun (Glasgow), a new method of isolating the typhoid and paratyphoid group from fæces; A. H. Walters (London), the examination of rats for plague in the Port of London; F. Dale (Manchester), Vincent bacilli and spirilli in cervical smears. The subject for general discussion was the training of juniors, opened by Mr. J. McLean (London). Prof. W. Blair Bell welcomed the conference to Liverpool on Wednesday, Aug. 27, and also spoke on laboratory research in cancer investigations. At the conference dinner, Sims Woodhead memorial medals were presented to Prof. A. E. Boycott and to W. A. Mitchell (Cambridge) for conspicuous services to the Association. The attendance at the conference was representative of the widespread organisation, members attending from Uganda, north and western Ireland, as well as all parts of England, Scotland, and Wales.

THE hurricane that reached Santo Domingo on Sept. 3 last is said to have caused many thousands of deaths, to have practically obliterated the capital of the Dominican Republic, and to have given rise to wind speeds so great as 160 miles an hour. Accurate measurements of wind speeds so high as this are not likely to have been obtained, but the material damage done supports the view that speeds of exceptional magnitude even for a tropical cyclone occurred. The large death-roll was evidently due in part to the unfortunate chance whereby a populous city felt the full force of the storm at its height. According to Fassig, the mean path of West Indian hurricanes in September lies to the north of the Leeward Islands and near to the north coast of Haiti. The particulars received so far suggest that the recent storm, at least in its earlier stages, followed a path slightly to the south of the normal track, for Dominica (Leeward Islands) was mentioned as the first island to be affected, and suffered some loss of life, while most of the islands immediately to the north of Dominica were unaffected. It is to be hoped that the full figures for loss of life will not be found to be so great as for the Galveston hurricane that occurred on Sept. 8, 1900, when 3000 people were killed in that town alone, but they evidently do not fall far short of those for the earlier disaster. Even if the storm reaches the mainland with reduced intensity, as predicted, it will rank as one of the very worst in a record that goes back to the fifteenth century.

THE Russian Soviet Union Society for Cultural Relations with Foreign Countries has issued the first number (Jan.-Feb. 1930, pp. 120) of *V.O.K.S.*, an illustrated literary and scientific publication in English. The object of this journal is to acquaint readers abroad with current affairs and cultural development in Russia, and the first issue contains more than

thirty contributions. Most of these are signed articles of general interest, such as, "Women of the U.S.S.R.", by Sophia R. Farman; "Building a New State", by A. Gurowitsch; "Excavations in the Crimea" and "Culture over the Ether", by "E. L." There are also descriptive travel articles on Samarkand, Tadzhikistan and Turkmenistan, but the present issue does not devote much attention to scientific matters, although Prof. B. Arendt describes the Soviet archaeological expeditions in 1929 and an account is given of the Leningrad Institute of Experimental Medicine and of the work conducted at the laboratory for experimental biology in the Moscow Zoological Gardens.

THE Leningrad Institute of Experimental Biology has undoubtedly performed most valuable work for the Russian people during the last decade. Side by side with the investigations of Profs. Kravkov, Omelyansky, Pavlov, and Vinogradsky, much urgently needed routine work has been performed in connexion with hygiene and sanitation and the preparation and application of curative and preventive serums. Prof. Daniel Zabolotny, president of the Ukrainian Academy of Science and former Commissar for Public Health, was also connected with the Institute of Experimental Medicine until he died recently. An obituary notice of him appears next to an account of the medical research work in progress at Leningrad. Prof. Zabolotny will be remembered for his studies of plague epidemics and the rôle of rodents as carriers of disease. Attempts have been made in several of the contributions to emphasise the progress being made under the *P'atiletka* or five-year plan of economic reconstruction and industrialisation. This is exemplified by "The Non-Stop Week", an article illustrated by the new Russian calendar for January and February, in which there are eleven weeks of five days each—a scheme which, it is claimed, has added sixty working days to the year. It is announced that twenty issues of *V.O.K.S.* will appear annually, the subscription being six roubles, or 12s.

THE eleventh International Conference of the Apis Club was opened on Monday, Sept. 8, at 3.30 P.M., in the Apothecaries' Hall, kindly lent for the occasion by the Society of Apothecaries, by Lord Ebbisham, who laid stress on the desirability of promoting apiculture among small-holders and other land workers, and referred to the increasing appreciation in other lands of the work of the Club. Miss A. D. Betts, in her presidential address, recapitulated the history of beekeeping, showing how it appears to have attained its maximum of national importance among the worshippers of the mother-goddess in neolithic or bronze age times. It has gradually fallen to its low status of a century ago through the loss of its religious standing, and by the economic difficulties caused by the substitution of other beverages for mead, the diminution of the wax market at the Reformation, and especially through the effects of the use of sugar upon the demand for honey. She pointed out that modern apiculture is built up upon science and must remain allied with science if it is to prosper, and indicated some of the directions in which apiculture is, or could

become, of national importance. The Conference continued throughout the week, Sept. 8–13, and included the reading of papers (at the Crystal Palace, in conjunction with the National Show of Bees and Honey) and an excursion to view the apiaries of Messrs. Sturges and Soden at East Dean, Sussex.

WE have lately received the first three Reports of the National Research Council of Japan. The first number is a reprint of one published in March 1922. The manuscript of the second number, and all the other materials, together with the office of the Council, were destroyed by the great earthquake and fire of Sept. 1, 1923. The issue of the later numbers has been delayed on this and various accounts, and the Council has now decided to bring out four double numbers in quick succession to cover the eight years, 1922–30, after which a single number will be published every year. The work of the Council is divided into eight sections, dealing respectively with astronomy, geophysics, chemistry, physics, geology and geography, biology and agriculture, medical sciences, and engineering, and each section issues its own *Japanese Journal*, except that astronomy and geophysics are combined in one, while that of biology produces separate journals of botany and zoology. The ideal that the Council has set before itself is that all original memoirs on one branch of science shall be published in the same periodical. Also, since papers written in the Japanese language are closed to western readers, authors are pressed to write either in English, French, or German, or if in Japanese to prepare full abstracts in one of these languages.

A CONFERENCE on steel structures research will be held in the lecture theatre of the Institution of Civil Engineers on Oct. 16 next. The purpose of the conference is to promote discussion of the work and objects of the Steel Structures Research Committee of the Department of Scientific and Industrial Research. This Committee has been set up to review existing regulations for the use of structural steel in buildings and bridges, and to investigate the possibilities of more efficient and economical design. In order to ensure the effective application of the results of the Committee's work, it is felt to be desirable at an early stage to enlist the interest and co-operation of various bodies concerned. The conference will, therefore, provide an opportunity for an exchange of views and for a consideration of various suggestions that have been made, in particular the feasibility of formulating a standard practice in the use of structural steel in building throughout Great Britain. Those interested are invited to communicate with the Secretary, Department of Scientific and Industrial Research, 16 Old Queen Street, Westminster, S.W.1.

MESSRS. A. Gallenkamp and Co., Ltd., have written to us in connexion with the Research Item entitled "Electrical Heating in Laboratories" which appeared in *NATURE* of Aug. 30, p. 326. They have sent us lists No. 75 G and No. 231 F describing small electric furnaces and electrically heated laboratory apparatus which they have been making for several years. We think that apparatus of this type might

advantageously be more widely used in many laboratories in Great Britain. In several districts the cost of electricity has been largely reduced recently and the many uses of electrically heated apparatus should be more generally appreciated.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—An assistant teacher of nautical subjects at the Boulevard Nautical School and School for Fishermen, Hull—The Director of Education, Education Offices, Guildhall, Hull (Sept. 16). A bacteriologist and pathologist for the County of Lanark—The County Clerks, Lanarkshire House, 191 Ingram Street, Glasgow, C.2 (Sept. 17). An assistant bacteriologist for the City of Bradford—The Medical Officer of Health, Town Hall, Bradford (Sept. 18). A head of the Building Department of the Leeds Technical College—The Director of Education, Education Department, Calverley Street, Leeds (Sept. 25). A lecturer in logic at Birkbeck College—The Secretary, Birkbeck College, Breams Buildings, E.C.4 (Sept. 25). A demonstrator in

physics at St. Bartholomew's Hospital Medical College—The Dean, St. Bartholomew's Hospital Medical College, Smithfield, E.C.1 (Sept. 27). An assistant research and advisory officer in plant husbandry at the West of Scotland Agricultural College—The Secretary, Blythswood Square, Glasgow (Sept. 27). A principal of the Municipal Technical College, Bath—The Director of Education, Education Office, Sawclose, Bath (Oct. 7). A principal of the L.C.C. South-East London Technical Institute, Lewisham High Road—The Education Officer (T.1), County Hall, Westminster Bridge, S.E.1 (Oct. 11). An assistant in the Cancer Research Laboratories, Bristol Royal Infirmary—The Secretary, Royal Infirmary, Bristol. A Dr. Robert Pollok lecturer in materia medica and therapeutics in the University of Glasgow—The Secretary, University Court, The University, Glasgow. A research assistant, with degree in engineering, under the Research Association of British Motor and Allied Manufacturers—The Technical Secretary, Research Association of British Motor and Allied Manufacturers, 5 Bolton Road, Chiswick, W.4.

### Our Astronomical Column.

Eros.—*Circ.* No. 296 of the U.A.I. announces that the first observations of the present very important apparition of this planet were obtained at Neubabelsberg by Dr. G. Struve, as follows :

1930.	U.T.	R.A. 1930-0.	N.Decl. 1930-0.	Mag.
Aug. 26 <sup>d</sup>	0 <sup>h</sup> 55 <sup>m</sup> 30 <sup>s</sup> ·7 <sup>s</sup>	3 <sup>h</sup> 33 <sup>m</sup> 4 <sup>s</sup> ·13 <sup>s</sup>	34° 25' 44·6"	11·8
27	23 44 18·6	3 38 22·47	35 0 35·6	

It was very close to the position indicated by a manuscript ephemeris prepared by Prof. G. Witt, who discovered the planet in 1898. Prof. Witt published an approximate ephemeris for the present apparition in *Mon. Not. Roy. Ast. Soc.*, vol. 85, No. 9. He gives a more precise one for October 1930 in *Astr. Nach.* No. 5729. The perturbations were computed partly by himself, partly by E. Noteboom; he notes that the 1928 observations show a puzzling discordance of some 3·5 sec. in R.A. Further search for its cause is postponed until after the present apparition. The distance of Eros from the earth is now just under a unit. It will be only one-sixth of a unit at the end of January. The magnitude will then be 7; it will be 9·6 on Nov. 1.

Rotations of the Stars.—A recent bulletin issued by Science Service, Washington, D.C., describes some investigations on this subject by Mr. C. T. Elvey at Yerkes Observatory. Provided that the axis of the star is not directed towards us, its rotation causes different portions of the star's surface to have different radial velocities. This produces a widening in the spectral lines. Mr. Elvey selected for examination the magnesium line at 4481, since it is normally sharp and narrow, so that its widening may be mainly ascribed to rotation. The contour of the line is studied by a microphotometer, which exhibits on a large scale the degree of opacity of each portion of the negative. If the whole of the widening of the line is correctly attributed to rotation, the majority of the stars studied are rotating much more rapidly than the sun. The mean rotational speed found for fifty-nine stars is 60 km./sec., about thirty times that of the sun; if a correction were introduced for limb-darkening, the value for the stars would be still greater. Drs. Shajn and Struve deduce that the

variable star W Ursæ Majoris has a diameter of 650,000 miles, and rotates in one-third of a day. This, if correct, would produce great ellipticity of form.

Planets and the Sunspot Cycle.—There have been many attempts in recent years to find an explanation of the variations in solar activity by planetary action. The latest is by Mr. Luby in *Astr. Jour.* No. 943. He notes that several investigators have made out a good case for the influence of Mercury, Venus, and the earth on individual spots, but that, to explain the principal cycle we must look rather to the giant planets; the tidal action of Jupiter is twenty-three times as great as that of Saturn, which in its turn bears a still higher ratio to those of Uranus and Neptune. It seems, however, that the length of time through which they act in the same direction raises the action of these last-named planets to an appreciable amount. Mr. Luby contends that the true sunspot period is 11·86 years, agreeing with Jupiter's period of revolution; but that it is subject to disturbance by the three other giant planets, so that it needs a long series of observations to deduce the correct value; he says that Wolf gave too much weight to the rough observations of the eighteenth century, which were made before the sunspot cycle was recognised. It is well to point out, however, that confirmation of the 11·2-year period has been obtained from ancient Chinese observations of sunspots, also by study of the annual rings in old trees; Mr. Luby's period should therefore be received with some caution. As a check on his theory he notes that the present cycle should be an abnormally long one, lasting until 1936. He further suggests that the variation of solar rotation with latitude may also be due to planetary action, comparing the similar behaviour of Jupiter and Saturn.

Mention may also be made of Prof. Dinsmore Alter's work, on the lines laid down by Prof. E. W. Brown, of which a description was given in the *Journal of the British Astronomical Association* for last January. This ascribes the principal term in spot-variation to the combined action of Jupiter and Saturn, but recognises the action of the inner planets in producing variations of shorter period.