

News and Views.

THE Council of the Royal Society, at its meeting on Feb. 21, recommended for election into the Society the following fifteen candidates: Arthur John Allmand, professor of physical and inorganic chemistry, King's College, London; Arthur Henry Reginald Buller, professor of botany, University of Manitoba, Canada; Charles Drummond Ellis, university lecturer in physics, University of Cambridge; Ronald Aylmer Fisher, head of Statistical Department, Rothamsted Experimental Station, Harpenden; George Ridsdale Goldsbrough, professor of mathematics, Armstrong College, Newcastle-on-Tyne; James Gray (Cambridge), fellow of King's College and lecturer in comparative anatomy, University of Cambridge; Cyril Norman Hinshelwood, fellow and tutor of Trinity College, Oxford; Augustus Daniel Imms, head of Entomology Department, Rothamsted Experimental Station, Harpenden; Peter Kapitza, assistant director of magnetic research, Cavendish Laboratory, Cambridge; William Dickson Lang, keeper of the Department of Geology, British Museum; John Mellanby, professor of physiology, University of London; Henry Stanley Raper, professor of physiology, University of Manchester; Harry Ralph Ricardo, consulting engineer; Harold Roper Robinson, professor of physics, University College of South Wales, Cardiff; Frederick William Twort, professor superintendent of the Brown Animal Institution, London.

THE place taken by some of the best of our English timbers and the increasing use being made in Great Britain of some of the finest quality Empire timbers is well shown in the great new building known as Imperial Chemical House, Millbank, London, a special view of which took place on Friday, Feb. 22. Amongst the English timbers used are walnut veneers, chestnut, oak, sycamore, lime, and holly. The Empire woods include Australian silky oak, Australian black bean, Rangoon teak, Indian laurel wood, British Columbian timber, Canadian maple, Canadian yellow pine, Canadian spruce, Tasmanian timber, and Honduras mahogany. Of the English timbers, the chairman's room is panelled with English walnut veneers which it is said could scarcely be equalled by any other walnut veneers in the world. Certain rooms on the same floor are panelled with English chestnut key-jointed centres, built-up plywood panels. The conference rooms are panelled throughout with English oak which is of a higher quality than the finest Austrian wainscot oak. The first floor conference room is panelled with Australian silky oak, a beautiful wood which should have a more extended use in England. Another conference room is panelled with Australian black bean, the wood of which has a very beautiful figure. This panelling has a Renaissance design.

THE whole of the skirtings in the new building which is to house Imperial Chemical Industries, Ltd., including nearly $2\frac{1}{2}$ miles of corridors, and in all the rooms with the exception of the panelled rooms, are made of English sycamore. For the elaborate carvings in the Gibbons manner English limewood has been

used, whilst English hollywood is employed for the inlaid work in certain bath and changing rooms and lavatories. For dormer windows, staircases, and doors, teak is the timber employed. The room to be used by Lord Reading, one of the directors, is panelled with Indian laurelwood, which shows the striking beauty of the unusual figure of this timber. British Columbian timber has been used for the parquet flooring in some of the stories, including the great refectory. Tasmanian timber is used in the basement, and Canadian maple for the flooring in the squash rackets and badminton courts. Certain of the panelled rooms in white wood have been made from the best Canadian pine. The backings for the best panels, such as the walnut veneers, etc., are made from Honduras and West African mahogany. Finally, the great flag-staff, nearly 90 feet high, is made of Canadian Pacific coast spruce. It will be apparent that this magnificent building provides an important object-lesson in the utilisation of some of the finest timbers in the Empire.

It is satisfactory to note that the interest in the application of scientific methods to industrial problems is beginning to receive financial expression. It was announced a few days ago that the trustees of the estate of the late Mr. C. Heath Clark had decided to make a contribution of £10,000 to the National Institute of Industrial Psychology for the promotion of education in London. The problems connected with the application of psychology to industry fall into two categories: (a) Those that involve the application of already well-established generalisations to a particular problem; (b) those for which as yet no generalisation is known. Employers are often quite willing to avail themselves of the help of the Institute for problems of the first order, but seem to be either unable or unwilling to help in the solution of those of the second, for these involve the slow and laborious accumulation of data for which no immediate value can be assigned. It is therefore necessary, if research is to go forward, that there should exist some fund which can be applied to problems involving more detailed study.

THE Institution of Mechanical Engineers, before which Prof. A. S. Eddington recently delivered the Thomas Hawksley lecture on "Engineering Principles in the Machinery of the Stars," was founded in 1847 at Birmingham with George Stephenson as its president. Thirty years later its increasing activities led to its removal to London, and its present fine headquarters in Storey's Gate has been the scene of many notable gatherings. The president this year is Mr. R. W. Allen, of the Queen's Engineering Works, Bedford, while the president-elect is Mr. Daniel Adamson of Manchester. Its membership is more than 10,000 and its income about £30,000 per annum. It has initiated and carried out much important research work; it has representatives on numerous conferences, boards, and institutions; it maintains various provincial and overseas branches, and in conjunction with the Board of Education it conducts

examinations for National Certificates and Diplomas in Mechanical Engineering at more than one hundred technical schools and colleges. The Thomas Hawksley Lecture was founded by the late Charles Hawksley (1839-1917) to commemorate the centenary of the birth of his father, Thomas Hawksley (1807-1893), one of the most distinguished waterworks engineers of his time, who served as president of the Institution of Civil Engineers and of the Institution of Mechanical Engineers. One of the greatest works with which he was associated was the Lake Vyrnwy Scheme, North Wales, for the water supply of Liverpool.

ONE hundred years ago a young musician, Louis Braille, blinded at the age of three, overcame his difficulty by the invention of a system of six dots whereby it was possible to emboss music, literature, and numerals. Braille was born at Coupvray, near Paris, in 1809, and died in 1852, having been a pupil and for twenty-six years a professor in the Institution des Jeunes Aveugles at Paris. In connexion with the centenary of the invention, the National Institute for the Blind, which has issued millions of copies of music, books, etc., is appealing for funds for its work. The appeal is addressed primarily to musicians, and it is proposed to have a performance of Mendelssohn's famous "Hymn of Praise," written in 1840 in connexion with the erection of the monument to Gutenberg on the fourth centenary of the invention of printing. It is in this work that the words "The night is departing" occur.

THE first public school for the blind was established in Paris in 1784, the first in England was that at Liverpool opened in 1791, and the first in London dates from 1799. That in Paris was founded by Valentine Haüy (1746-1822), the brother of the famous crystallographer René Haüy (1743-1822), and it was Valentine Haüy who began printing in embossed characters for the blind. Many men of science have suffered from blindness. Galileo and Euler became blind. Nicholas Saunderson, for a long time Lucasian professor of mathematics at Cambridge, was blind from the age of one; and H. M. Taylor, at the time of his death in 1927 senior fellow of Trinity College, Cambridge, did most remarkable work by translating mathematical volumes into Braille after he became blind at fifty-two years of age. The Belgian physicist Plateau became blind at the age of forty-two, but with the aid of his wife and son continued to carry on his work in physiological optics and molecular physics, and at the age of seventy-two published a valuable contribution to the knowledge of capillary attraction.

A NEW scientific expedition to the Antarctic under the leadership of Sir Douglas Mawson is now being organised. The *Times* announces that the British government has given the *Discovery*, and that the Australian government is providing the necessary funds. The government of New Zealand is also contributing. The expedition is designed to explore the region between the Ross Sea and Enderby Land and to continue the work carried out in that area by Sir Douglas Mawson and Capt. J. K. Davis in the

Australasian Antarctic Expedition of 1911-14. Capt. Davis is again to go with Sir Douglas Mawson and will be in command of the *Discovery*. Much of the coast-line towards Enderby Land is still unknown, and Enderby Land itself has never been visited since its discovery in 1832. Aeroplanes will be useful for inland survey. The study of meteorological conditions will enable the relationships between the climates of Antarctica and Australia to be determined more accurately. Much attention will be paid to the distribution of whales, in view of the spread of commercial whaling to those waters. The expedition will sail from Australia towards the end of this year. The combination of aeroplane reconnaissance and detailed ground work should result in discoveries of the highest value.

A PAPER was read before the Surveyors' Institution on Feb. 4, by Mr. H. J. Vaughan, on "The Significance of the Timber Merchant in Estate Forestry." Mr. Vaughan, who is now managing a large estate, in addition to taking a keen interest in the planting and growing of trees, has had the somewhat unique experience of having spent two years in close association with a large firm of English timber merchants in the south of England. He says, in his opening paragraph, that "it seems to me that some even of our eminent foresters tend to lose sight of the saw-bench when advocating and putting into practice schemes of afforestation or re-planting." After glancing at the sporting and amenity aspects of woodlands, Mr. Vaughan pointed out that what the timber merchant wants is a regular and trustworthy source of supply of his raw material, and that the management of private woodlands in the past has not fulfilled this desire. This is the cause to some degree of the low prices offered to owners for their trees, and for the high freights charged by railways for the carriage of timber. After contrasting some of our best hardwoods with the softwood conifers, Mr. Vaughan said he doubted whether Great Britain would ever be able to compete with the Scandinavian countries in this class of material. In discussing the work of the Forestry Commissioners and their concentration on planting softwoods and purchase of land for this purpose, Mr. Vaughan expressed the opinion that it would be better to concentrate on growing hardwoods wherever possible, some of our native trees of this class having a real superiority, rather than to try to meet a questionable world famine with what is bound to be a very small proportion of our total requirements of coniferous softwoods for building and for constructional work. Mr. Vaughan considers it a wrong policy to plant conifers on areas where valuable hardwoods would grow.

THE Department of Entomology of the British Museum (Natural History) has recently received through Mr. P. A. Buxton, of the London School of Hygiene and Tropical Medicine, specimens of a new genus and species of parasitic Hymenoptera (*Ichneumonidae*), bred from the grubs of *Cladocera migroornata*, a beetle used by the Bushmen of the Kalahari Desert, South Africa, as an arrow poison. The Trustees of the Museum have approved the purchase

for the Department of Geology of part of the skeleton of the horse-like mammal *Moropus*. This is one of the Chalicotheres, distantly related to the horses, which they resembled in their rather small head and long neck. The fore-limbs were long compared with the hind-limbs, so as to give the trunk a giraffe-like pose. Like the horses, they were herbivorous, but they had claw-like hoofs, three on each foot. Chalicotheres have been obtained from early Tertiary times onwards, from Europe, Asia, Africa, and America. Hitherto the Museum had only some incomplete remains from India, and a single claw from Central Africa. The individual now acquired came from the Middle Tertiary of North America. It stands as high as a large horse, but the bones are far more massive. Recent additions to the mineral collection of the Museum include some crystallised sprays of native gold in calcite from Torquay, Devonshire, discovered and presented by Prof. W. T. Gordon.

PROF. F. O. BOWER, F.R.S., made "The Evolutionary Relation of the British Ferns" the subject of his presidential address to the Yorkshire Naturalists' Union at York on Dec. 8. The address is published in full in the *Naturalist* for January 1929, and is of very great interest to British botanists, as the following citation will indicate: "Having this year completed nearly half a century's research on 'Ferns,' and summed it up in three volumes in which the aim has been to reconstruct their chief evolutionary sequences upon a foundation of Organography, it seemed not inapt to use the present opportunity for placing our British Ferns in their probable relation to the Class at large. I believe this has never yet been done." Both task and man were most apt to the occasion, a memorable one for the Union; a large meeting listened to a most delightful and stimulating address which did not restrict itself to the written word, but often diverged into a most interesting and relevant commentary upon the slides used in illustration, which were made from the plates of Sir William Hooker. Prof. Bower pointed out that in Great Britain we have only some forty species out of a total of 6000, but these are representative of half the families and about one-eighth of the genera. "This is probably the consequence of the position of Britain on the extreme fringe of a great continental area." Many of the largest fern genera are monotypic with us. Prof. Bower discussed this interesting fact, concluding that probably the majority of these British ferns "represent vestiges of a richer flora of the past, and that the species themselves have, by their more ready adaptation, or by more hardy constitution, been able to subsist in surroundings from which their congeners have retired beaten." "In fact, they symbolise the tenacious and adaptable race of men that inhabits these islands."

PROF. J. A. FLEMING gives interesting personal recollections of Sir Joseph Wilson Swan in the *Journal of the Institution of Electrical Engineers* for February in connexion with the invention of the carbon incandescent electric lamp. In particular, he points out that one of the carbon incandescent lamps shown by

Swan at an Exhibition in Newcastle-on-Tyne on Dec. 18, 1878, is still preserved in the Science Museum at South Kensington. It is necessary to distinguish between patent priority, which is often a mere matter of luck or promptitude, and that scientific or technical priority which is based upon achievements, exhibitions, public statements, or the evidence of contemporary workers. Scarcely any invention springs into existence in full completion. In many cases inventors may with justice claim to have originated some part of an invention. It was thus with the invention of the electric lamp of small candle-power. The 'sub-division of the electric light' was the problem which the electricians of 1878 had to solve. In 1879, Fleming was scientific adviser to the Edison Telephone Co., and in 1882 he was appointed in the same capacity to the Edison Electric Light Co. and to the Edison and Swan Co. In his opinion the credit for the epoch-making invention of the electric lamp cannot be solely attributed to T. A. Edison. Sir Joseph Swan is, without doubt, one of those whose names are inscribed high up on the roll of fame. For all future time his name will be connected with the invention of the carbon filament electric lamp.

DURING the summer meeting last year at Glasgow of the Institution of Electrical Engineers, many members visited the works of the British Aluminium Co. at Tulloch and Fort William. The company has two hydro-electric stations in operation, that at Foyers on Loch Ness, opened in 1896, and a second at Kinlochleven, on Loch Leven, opened in 1909, while a third and much larger one is being erected about a mile from Fort William. This is not only of interest on account of its size and its various engineering features, but also as an example of the use of water-power for manufacturing in a remote area dominated by the mountain Ben Nevis. The most notable piece of construction has been the boring of the tunnel from the valve shaft at the Treig Dam to Fort William, 15 miles in length. Commenced in the summer of 1926, the last shot opening the tunnel was fired on Feb. 9, the work having proceeded from 23 faces by means of vertical shafts and horizontal adits. From the surge chamber on the hill above Fort William the water will be conveyed by three steel pipes, at a maximum head of 800 ft., to the power-house, which will eventually have turbines of a total capacity of 120,000 h.p. The catchment area is 303 square miles in extent, the rainfall over which varies from 50 inches per annum in the northern part to 160 inches on the summit of Ben Nevis. A short description and a map of this important scheme was given in *Engineering* for July 6 of last year. Though the tunnel is now bored, about half of it still remains to be lined with concrete.

THE Annual Summary of the World's Shipbuilding, issued by Lloyd's Register, is a statistical return of great value affording an indication of the progress of this great industry in all countries. The summary for 1928 deals with the ships launched during the year, their tonnage, classes, types and machinery, and includes tables showing the tonnage launched for many

years back. Shipbuilding is an industry liable to very great fluctuations, and one which, owing to the War, experienced great difficulties. The fluctuations will probably always occur, for the demand for ships varies with many factors, but it is a satisfactory feature of last year's return to find that the tonnage launched in Great Britain and Ireland was 53.6 per cent of the world's tonnage of about 2,700,000 tons. The tonnage launched in 1893 was about one million tons, in 1903 it rose to two million, in 1913 to three million, and in 1919 to more than seven million tons. Of this seven million tons about half was built in the United States, but after 1921 shipbuilding in the United States sank to a much lower level, and last year the tonnage launched in that country amounted to only 86,000 tons. The growth of the mercantile fleets of the world can be seen by comparing the total tonnage of 42,514,000 tons of 1914 with the 61,594,000 tons of 1928. Remarkable changes in ships have taken place also. Oil tank ships in 1914 amounted to 1,479,000 tons, in 1928 to 6,544,000 tons; motor ships totalled 234,000 tons in 1914, and 5,432,000 tons in 1928; while steamers fitted for burning oil totalled 1,310,000 tons in 1914 and 19,000,000 tons in 1928. The largest vessels launched during 1928 were the German Atlantic liners *Bremen* and *Europa*, of 46,000 tons each.

WE have received the first number of the *Journal of Nutrition*, edited by J. R. Murlin, assisted by an editorial board of ten well-known American experts in this branch of science. It is to be published every two months by the American Institute of Nutrition, the president of which is E. F. Du Bois; at present one volume of about 500 pages will be issued each year. The first number (September 1928) contains articles by H. M. Evans, "The Effect of Inadequate Vitamin B upon Sexual Physiology in the Male" and "Relation of Vitamin E to Growth and Vigour"; by E. V. McCollum and collaborators, "The Distribution of Vitamin E"; by B. Sure, "A Detailed Study of the Role of Vitamin B in Anorexia in the Albino Rat"; and by the editor, "Vital Economy in Human Food Production," etc., some of which we hope to refer to in more detail later. The *Journal* is well got up, with a portrait of Lavoisier on the cover, and is clearly printed. The science of nutrition has expanded so greatly in the last few years that there is undoubtedly room for another journal dealing solely with this subject; the composition of the editorial board should ensure that it maintains a high scientific outlook. It can be obtained in Great Britain from Messrs. Baillière, Tindall and Cox.

AN article on the marine biological laboratory at Seto, Japan, its equipment and activities, with remarks on the fauna and flora of the environment, appears in the *Memoirs of the College of Science, Kyoto Imperial University*, Series B, vol. 3, No. 3; 1927. The laboratory, which is affiliated to the departments of zoology and botany of Kyoto University, was opened in 1922. It consists of a number of separate buildings—an aquarium open to the public, a students' laboratory, two research laboratories, and a dormitory capable

of accommodating thirty persons. Up-to-date equipment is installed throughout, and individual research rooms are furnished with electricity and running salt and fresh water. For the collection of material the laboratory possesses, in addition to three rowing boats, one vessel of 19 tons capacity, fitted with masts and sails and equipped with a 25 h.p. semi-Diesel gas engine. Up to the present the staff has been engaged mainly in making faunistic surveys of the various collecting grounds. A preliminary survey of the littoral and inshore areas has already been completed, but that of the deeper waters has not yet been fully worked out. Spring and summer vacation courses—attendance at which is compulsory—are provided for students of biology at the University, and a summer course is also provided for teachers of biology in public schools.

THE Report of the United States Coast and Geodetic Survey for the year ending June 30, 1928, in addition to the usual record of work, mentions several new features. The demand of air maps has led to a new branch of the department's work. Already several sheets of recognised flying routes have been published and others are in preparation. A big development in this branch of survey work is anticipated. In coast surveys considerable use is now being made of echo sounding with the fathometer, for which the claim is made that it allows work to be done twice as quickly as by any other means. It is now used in eight survey vessels which can work at full speed, and stop only when temperatures or water samples are required. In connexion with echo sounding, a further development is sound ranging in order to fix positions in thick weather. The use of this method allows hydrographical work to be continued almost regardless of weather conditions and throughout the twenty-four hours. The report gives a number of charts showing the state of field work up to the end of the year under consideration.

THE recent series of illustrated post cards of British trees issued by the Natural History Museum, as F 22—F 28, contain excellent photographs and illustrations of trees, long familiar in Great Britain, if not necessarily native. In each series two photographs show the appearance of a fine example of the tree in winter and in summer, whilst two more coloured illustrations depict and analyse flower and fruit. These cards, with their accompanying descriptive leaflet, together with an exhibit of British-grown trees in a bay in the Central Hall of the Natural History Museum at South Kensington, to which the leaflet refers the reader, should help to make the city dweller more alive to the beauty and interest of the trees of the countryside.

APPLICATIONS for the Government Grant for scientific investigations must be made to the clerk to the Government Grant Committee, Royal Society, Burlington House, W.1, upon the requisite form, by Mar. 31.

DR. KARL JORDAN, curator of the Entomological Department of the Zoological Museum at Tring, has been elected president of the International Commission

on Zoological Nomenclature, in succession to Prof. F. C. Monticelli, deceased. Prof. Filippo Silvestri, of Portico, Italy, has been elected a member of the Commission in succession to the late Prof. F. C. Monticelli, of Naples.

THE new-year issue of *The Fight against Disease*, the organ of the Research Defence Society, reminds us that the Society has now been in existence for twenty-one years. An interesting correspondence between Lord Knutsford and the Hon. Stephen Cole-ridge on diabetes and insulin treatment appears in this number.

A CATALOGUE issued by Mr. Francis Edwards, High Street, Marylebone, of books on the voyages of Captain James Cook, contains several items of great interest. One entry is the original painting by J. Webber, who was artist in the *Resolution*, of the death of Captain Cook in Hawaii. This picture is well known from the engraving by Bartolozzi. Another item is the manuscript log-book of H. Roberts, who as mate of the *Resolution* was in charge of the pinnace which took Captain Cook ashore for the last time. The log runs from October 1778 to November 1779, when Capt. King demanded for the Admiralty all log-books and diaries kept on board the ship.

APPLICATIONS are invited for the following appointments, on or before the dates mentioned:—An assistant in the Electrical Engineering Department of the Coventry Municipal Technical College—The Director of Education, Council House, Coventry (Mar. 8). A head of the Building Department of Rutherford Technical College, Newcastle-upon-Tyne—The Director of Education, Northumberland Road, Newcastle-upon-Tyne (Mar. 9). A head of the Engineering Depart-

ment of the Technical Institute, Gillingham—R. L. Wills, 15 New Road Avenue, Chatham (Mar. 9). A woman lecturer in education in the Department of Education of the University of Bristol—The Secretary, Department of Education, The University, Bristol (Mar. 11). A lecturer in engineering at the Technical College, East London, South Africa—The High Commissioner for the Union of South Africa, South Africa House, Trafalgar Square, W.C.2 (Mar. 12). A Tancred student in physic at Gonville and Caius College, Cambridge—E. T. Gurdon, 28 Lincoln's Inn Fields, W.C.2 (Mar. 12). A director for the Harcourt Butler Institute of Public Health, Rangoon—The Secretary to the High Commissioner for India, General Department, 42 Grosvenor Gardens, S.W.1 (Mar. 13). A professor of botany in the University of Birmingham—The Registrar, The University, Birmingham (Mar. 16). A horticultural lecturer and adviser under the Bucks County Council—The Agricultural Organiser, Education Sub-Office, Aylesbury, Bucks (Mar. 16). A professor of philosophy in the University of Lucknow—The Registrar, The University, Lucknow (Mar. 17). An assistant lecturer in economics in the University College of North Wales—The Registrar, University College of North Wales, Bangor (Mar. 18). An assistant inspector in connexion with agricultural and horticultural education and research—The Secretary, Ministry of Agriculture and Fisheries, 10 Whitehall Place, S.W.1 (Mar. 18). A lecturer in metal mining in the Mining Department of the University of Birmingham—The Secretary, The University, Birmingham (Mar. 23).

ERRATUM.—Obituary of Dr. J. W. L. Glaisher in NATURE of Jan. 26, p. 135, col. 2, line 8 from bottom: for 1910 read 1901.

Our Astronomical Column.

SPECTRA OF MINOR PLANETS.—*Lick Observatory Bulletin*, No. 407, contains an investigation of this subject by Mr. N. T. Bobrovnikoff; he used a one-prism spectrograph on the 36-inch refractor. As might be expected, the light of the small planets is wholly reflected sunlight; there are no absorption bands as in the giant planets. The violet and ultra-violet regions are generally very weak as compared with the spectra of *G*-type stars. There is evidence of difference of composition of different planets; thus Ceres is bluer than Vesta, the maximum of intensity of the latter being much further towards the red end; the values given are: Ceres, $\lambda 4800$; Vesta, $\lambda 5300$. It has been deduced both by changes of light and of spectrum that Vesta rotates in $5^h 55^m$. The suggestion is made in the article that minor planets may be comets that have lost their gaseous envelope; but it should be remembered that Halley's comet was invisible when in transit over the sun in May 1910, whereas any solid body of even a few miles in diameter would have been detected, the comet being near the earth.

MAGNITUDES OF STARS IN THE CAPE ZONE CATALOGUE.—The importance of the accurate determination of magnitudes both for statistical purposes and for the deduction of spectroscopic parallaxes has been more fully realised during the last two decades. The Cape Observatory has lately published a volume

which gives the photographic magnitudes of 20,843 stars in the Cape Zones (Declination -40° to -50°), the Harvard spectral type and photometric and photographic magnitudes being given for comparison.

Very careful experiments have been made at the Cape of the photographic effects of different exposures, different intensities of light, and different brands of plates. Kron gave an exponential formula with different values of the exponents for different brands of plates. This is adopted with the simplification that Kron's a_1, a_2 are each assumed equal to 0.25 for all brands of plates. The quantity I , known as the 'optimal intensity,' is, however, considerably greater in slow than in fast plates. The mean difference (irrespective of sign) between Cape and Hertzsprung is 0.07 mag.; the difference from Harvard for 16 stars in the south polar sequence is +0.07 mag.

The satisfactory conclusion is reached that if there is on a plate one star the magnitude of which is known from extraneous sources, the magnitudes of the other stars on the plate can be deduced. The zero point of the Cape system was derived from the Harvard visual system corrected for colour. There is found to be a marked tendency for the colour indices to group themselves round four maxima the positions of which are -0.04 mag., $+0.38$ mag., $+0.84$ mag., $+1.30$ mag. It will be seen that they are nearly equally spaced.