REMARKS ON SPECTROPHOTOMETRIC CURVES OF BLOOD PIGMENTS*

BY

WILFRID MARSHALL, M.A., B.Sc., M.D.

SIDMOUTH

Photographs of blood spectra, owing largely to the varying sensitivity of plates to different wave-lengths of light, give an inadequate idea of the spectrum as a whole. Anyone who has attempted to photograph a mixture of methaemoglobin and oxyhaemoglobin, or a so-called neutral solution of methaemoglobin, will have recognized the difficulties. The spectrophotometer, which gives accurate measurements of absorption in different parts of the spectrum, would seem, provided certain constants are maintained, to be free from objection. The curves obtained, however, do not represent the blood spectrum seen by the eye, and in this respect at least are disappointing. In view of the increasing use of the spectrophotometer as an instrument of precision in analysis and research, some observations made in the course of other investigations may not be without interest.

THE INSTRUMENT

The spectrophotometer employed consisted of a Hilger large-model constant deviation wave-length spectrometer and a Nutting polarization photometer giving a triple field. The large-model spectrometer is less convenient to use than the small model, but owing to the greater dispersion it is more delicate, especially for the observation of absorption towards the red end of the spectrum. Its average accuracy over the visible spectrum is about one Ängstrom unit. The light source was a 100 c.p. pointolite lamp, 63 cm. from the collimator slit. The width of this slit, which controls resolution and affects the height, and to some extent the width, of the absorption bands in the curves, should be as narrow as the light source will allow. In most of my experiments it was 0.05 mm. The ocular slit was 0.1 mm. wide, and covered wave-lengths of 2.1 $\mu\mu$ in the yellow and 1.2 $\mu\mu$ in the blue. The internal diameter of the cells used was 1 cm.

TECHNICAL DIFFICULTIES

When a convenient solution of blood showing well-separated oxyhaemoglobin bands is examined spectroscopically, the blue of the spectrum appears clear, and on diluting the solution the α band is the last to go ; but when a curve of the absorption coefficients of the solution is plotted, the β band of the oxyhaemoglobin appears to be denser than the α band, and the limb of the β band towards the blue does not reach zero, and is followed by increasing absorption as the violet is approached. The whole curve presents a somewhat tilted appearance. This relative increase in absorption towards the violet is not wholly natural, and is difficult to explain. It is obtained with solutions of crystallized haemoglobin and other blood pigments, even when these are plotted against dilute serum ; but it is not seen in spectrophotometric curves of substances of low molecular weight, such as potassium permanganate or even eosin. It was at first thought to be due to the increased scattering of light of diminishing wave-length by the large molecules of haemoglobin. But this explanation is not wholly satisfactory. The graphs of absorption coefficients of particulate matter, such as suspensions of micrococci or a mastic emulsion, are straight lines, the inclination of which varies with the concentration ; whereas the haemoglobin absorption increases more towards the violet end than visual observation indicates. It may possibly be due to the residual yellow colour of blood solutions. Ordinary colour screens are not sufficiently labile to counteract this effect. Silver colloid solutions, which show increasing absorption towards the violet, are more serviceable, and I have found dilutions of electrargol especially useful as a control in the spectrophotometry of blood pigments. By using a dilution which will give zero at λ 500 $\mu\mu$ against an oxyhaemoglobin solution, a spectrophotometric curve is obtained which presents fairly accurately the blood spectrum seen by the eye.

METHAEMOGLOBIN IN NORMAL BLOOD

Most of my work has been done on ox blood, crystallized or more or less purified, but near the end of my researches three experiments were made on human blood, and they illustrate the value of curves of this type. Blood was obtained from the ears of three different persons in the usual way, and was diluted to a convenient concentration for examination. To 5 c.cm. of the dilution was added one drop of strong ammonia solution, and to another 5 c.cm. one drop of water. The two solutions were straightway placed in identical cells ; the ammoniacal dilution was put in the beam of the polarized light, and the neutral solution in the non-polarized beam of the spectrophotometer. The difference in the absorption coefficients was then taken. On plotting, the curve showed slight rises in the red and in the position of the two oxyhaemoglobin bands. From an analysis of the curves of oxyhaemoglobin and of acid and alkaline methaemoglobins it is difficult to avoid the conclusion that in these three individuals a trace of methaemoglobin is normally present in the blood. Whether this is universally the case further research, for which I have not at present the opportunity, will show. There seems, however, no obvious reason why oxyhaemoglobin and methaemoglobin should not normally exist in a balanced state, and a minute concentration of methaemoglobin be in equilibrium with the oxyhaemoglobin of normal blood.

* A communication to the Section of Pathology and Biochemistry at the Annual Meeting of the British Medical Association, Eastbourne, 1931.

Memoranda

MEDICAL, SURGICAL, OBSTETRICAL

SURVIVAL FOR SEVEN DAYS AFTER RUPTURE OF AORTIC ANEURYSM

Rupture of an aneurysm of the aorta is not a common occurrence, but survival for seven days thereafter must be very rare. Only the post-mortem findings in the following case could have led me to believe that such a happening was possible.

The patient, a man aged 65 years, first consulted me on October 15th, 1931, complaining of pain radiating down the inner aspect of the left thigh from the vicinity of the saphenous opening. This I diagnosed as an anterior crural neuritis, and treated it with sodium salicylate and potassium iodide, therewith affording considerable relief.

On October 22nd I was called to see the patient, who informed me that, as he was strolling round his room, he suddenly "sat down on the floor." He felt no sensation of discomfort, but in view of the fall he felt alarmed, and went to bed. Two days later it was evident that he had had an enormous haemorrhage into the tissues of his left abdominal wall. The skin from the spine to the mid-axillary line, and from the crest of the ilium to the scapula, was black with effused blood. The left iliac fossa was occupied by a tense mass, which stretched up under the costal margin. The only symptom referable to the abdomen was a troublesome hiccup, which persisted till the end. He survived till October 28th (seven days), when he died suddenly after some slight movement in bed.

Post mortem I found in the abdominal cavity a large quantity of serous fluid and a lesser, though considerable,

quantity of free blood. Just above the bifurcation of the aorta was a small aneurysm, containing fibrin deposit to a depth of three-quarters of an inch. Through a small rent in its postero-lateral wall the finger could be passed over the psoas muscle into an enormous mass of blood clot, occupying the whole of the iliac fossa and extending upwards to the diaphragm, displacing the heart to a position practically in the mid-line. This mass was extraperitoneal, and my conclusion was that death only occurred when, under the strain of some exertion, the peritoneum gave way and blood escaped freely into the abdominal cavity.

South Ockendon, Essex. N. MCFARLANE, M.B.

TERATOMATOUS CYST OF THE OVARY DISCHARGING VIA THE UMBILICUS

A multipara, aged 41, was admitted to St. Columba's Hospital, Hazaribagh, India, on October 14th, 1931, complaining of abdominal discomfort and discharge from the umbilicus. The patient said that she had had a lump for a month, and a discharge from the navel for a week ; otherwise she was well.

On examination a yellow semi-fluid discharge was seen to be coming from the umbilicus. Midway between the pubis and the umbilicus a swelling of cystic consistency was palpable. It was the size of two fists. The tumour appeared to be attached to the deeper layers of the abdominal wall. The general condition of the patient was fairly good, and examination revealed no other abnormality. The temperature was 98.2° F., and the pulse 86.

About an hour after examination of the abdomen a large amount of discharge, resembling thickly curdled egg-and-milk, was passed via the umbilicus. On the day after admission the patient began to run a temperature fluctuating from 98.4° to 101.6°, and the pulse rate increased to 110–120. She had little pain. Within the course of the next week the discharge lost its curdled appearance, and became fetid and haemorrhagic.

OPERATION

On October 28th operation was performed. A median subumbilical incision was made, and was then carried upwards so as to encircle the umbilicus. The peritoneum was exposed, and a probe was then passed along the umbilical fistula. The probe appeared to go down to the pelvis. On incision of the peritoneum a yellowish-white walled cyst was exposed, the upper part of which was adherent to the peritoneum of the abdominal wall. The probe was felt to be passing down towards the pelvis in a plane posterior to the cyst. The omentum, which was very adherent to the cyst, was freed after some difficulty, and it then became apparent that the cyst was of pelvic origin, for the Fallopian tube was to be seen stretched across part of the tumour.

The cyst was rotated and partially expressed through the abdominal wound. It was then found that there was a second cyst, lying posterior to and below the first one. The probe passed posterior to the first one down to the second. Both cysts had burrowed between the layers of the right broad ligament, and though lying adjacent to each other did not intercommunicate. The broad ligament was divided, and the two cysts rotated upwards. The track leading from the umbilicus to the lower cyst was then traced from below upwards. It was about three and a half inches in length. It was found to be a fibrous canal within a sheath of omentum ; the lower two inches lay posterior to the first cyst ; the upper one and a half inches were firmly adherent to the peritoneum of the anterior abdominal wall. This portion of the peritoneum had to be removed with the canal and the umbilicus. The uterus was small, and the left ovary and tube were normal. Apart from the omental adhesions in the region of the cysts, there were no other signs of previous peritonitis.

On examination of the cysts the anterior one was found to contain a bundle of black hair, cartilage, and thick sebaceous yellow material. The posterior one contained a mass of white hair, bone, cartilage, and a quantity of haemorrhagic foul-smelling fluid.

St. Columba's Hospital, Hazaribagh, India. RUTH BOCOCK.

A CASE OF COW-POX OR VACCINIA

On October 1st, 1931, a farmer's wife visited me complaining of some " water-blisters " on her fingers, with swelling of her hands. She said that six days before she noticed little red " spots " on her fingers, which, within the next day or two, became " pimples." Three days before I saw her she had noted the pimples changing to water-blisters, which gradually increased from pin-point size until they were about the size of a threepenny-piece. At this time she attended the surgery. The patient also said that she had been picking " brambles " a week before the blisters appeared, and had scratched all her fingers, especially those of the right hand. This had not prevented her attending to the milking of the cows, one of which had some blisters and crusts on its teats. The latter she treated by removing the crusts with olive oil and gently milking. After this attention to the cow she was always careful to cleanse her hands thoroughly for fear of anything infectious.

On examination, the patient was flushed ; temperature 100° F. ; tongue was dry and furred. She complained of feeling shivery and cold, with sweating at night. There was headache, loss of appetite, nausea, and constipation ; altogether she looked and felt " out of sorts," and had been so for the past four days. Both hands and forearms were oedematous and reddened up to the elbows. On the fingers of each hand (most marked on those of the right hand) were groups of vesicles, varying in size from a pin-point up to about the size of a threepenny-piece. Some of these, the older vesicles, had burst, and were exuding serum. The vesicles were surrounded with dark-red areolae, with erythema beyond this. The blisters were most marked on the forefingers of each hand. Papules, also varying in size, were present on the other fingers, on the posterior aspect of the upper arms, and on the calves of the legs. This eruption was very itchy. There was a faint generalized erythema over the body. Of the larger intact vesicles, some were filled with a greyish, jelly-like material, while older ones were beginning to dry and get black in the centre. Adenitis was present in the glands at the bend of the elbow and in both axillae.

The patient was advised to go to bed, to keep on a light diet, and to pay attention to the bowels. Spirit dressings were applied to the vesicles on the fingers. She was given a soothing lotion to apply to the erythematous-papular part of the eruption—that is, on the hands, forearms, arms, and legs, etc. The temperature remained above normal till three days later, oscillating between 99° and 100.5°. By that time, October 5th, the erythematous-papular part of the eruption had faded, with absorption of the oedema in the left hand and forearm (the lesser affected), while the oedema in the right hand and forearm had greatly lessened. There were no new lesions to be seen. The vesicles were now drying up, and crusting had appeared on the older ones—that is, those on the right forefinger. The ante-cubital and axillary adenitis had abated. On October 7th the temperature was normal, and all febrile symptoms had disappeared. The patient was allowed up, and when seen on October 9th all the vesicles had crusted and darkened. There was no oedema in the right hand or forearm. Within the next few days the crusts began to be shed, and at a final visit on October 14th there were no crusts to be seen, and all the lesions had healed.

COMMENTARY

The above, no doubt, was a true case of cow-pox. The woman had prepared her fingers for inoculation by the scratching caused by " bramble " gathering. The treatment of the sores on the teats of the cow expressed lymph on to the fingers, resulting in infection with extremely successful multiple vaccination. The general febrile symptoms now followed as a sequel. The sores on the teats of the affected cow consisted of numerous vesicles, some of which were oozing serum, while others had crusted. In conclusion, I should state that the woman had never been vaccinated.

DAVID M. CATHIE, M.B., Ch.B.
Assistant to M.O.H. for Arran.

The following well-known foreign medical men have recently died: Professor EDUARD KAUFMANN, emeritus professor of pathology at Göttingen, author of a textbook on morbid anatomy, aged 71; Geh. Med.-Rat FERDINAND KLAUSSNER, extraordinary professor of special surgery at Munich, and author of a work on bandaging for students and practitioners, aged 74; Dr. WALTHER SCHMITT, an eminent gynaecologist of Essen, aged 42; Dr. GUSTAVE LE BON of Paris, aged 91, author of works on crowd psychology, evolution of matter, philosophy of history, and many other books; Dr. RENÉ TESSON, professor of clinical surgery at the Angers school of medicine; Dr. GEORGES FERRY, head of the surgical clinic at the Strasbourg Faculty of Medicine; Dr. G. MAHOUDEAU of Paris, professor at the École d'Anthropologie, aged 80; Dr. J. RAYMOND MOLINIÉ, a Marseilles laryngologist, aged 61; and Professor ELISEO CANTON, founder of the obstetrical and gynaecological clinic at Buenos Ayres in 1900, aged 70.

Universities and Colleges

UNIVERSITY OF LONDON

University College

A course of six public lectures on chemotherapy will be given by Mr. H. R. Ing, M.A., D.Phil., on Tuesdays at 5 p.m., beginning January 19th. The lectures are open without fee or ticket to students of the University and others interested in the subject. They will be delivered in the Physiology Theatre (entrance Gower Street).

London School of Hygiene and Tropical Medicine

The following honorary appointments to the staff of the London School of Hygiene and Tropical Medicine are announced: Dr. James Fenton, medical officer of health for the borough of Kensington, to be an additional lecturer on public health administration and practice. Mr. L. W. G. Malcolm, M.Sc., conservator of the Wellcome Historical Medical Museum, to be a lecturer on racial hygiene.

St. Bartholomew's Hospital Medical College

A course of three lectures, illustrated by lantern slides, on the feeding and nutritional disease of the infant, will be given by Dr. Leonard Findlay at St. Bartholomew's Hospital Medical College, E.C., on February 8th, 9th, and 12th, at 5.30 p.m. Admission to the lectures, which are addressed to the students of the University and to others interested in the subject, is free, without ticket.

Bedford College

Professor S. J. Cowell will give a course of four lectures on modern aspects of nutrition, in the physiological department of Bedford College, Regent's Park, N.W., on Wednesdays, February 3rd, 10th, 17th, and 24th, at 5.15 p.m. Admission to the lectures is free, without ticket.

UNIVERSITY OF LIVERPOOL

The following candidates have been approved at the examination indicated:

D.P.H.—A. Ashworth, Elizabeth M. Harding, R. L. McMorris, J. S. Mather, W. J. Pierce, J. H. Pottinger (with distinction), A. J. Walsh.

ROYAL COLLEGE OF SURGEONS OF ENGLAND

Lectures

The first course of lectures for 1932 at the Royal College of Surgeons includes six lectures by Sir Arthur Keith, on January 18th, 20th, 22nd, 25th, 27th, and 29th, on malformations of the human body considered from a new point of view. Professor J. P. Hosford will lecture on some factors in the causation of hydronephrosis, on February 1st; Professor Reginald T. Payne, on February 3rd, on excretion urography; Professor A. Remington Hobbs, on February 5th, on puerperal sepsis; Professor J. A. Ryle, on February 8th, on the natural history of duodenal ulcer; Professor H. A. Harris, on February 10th and 12th, on the comparative anatomical aspect of pre-natal, infantile, and adult disease in man and animals, with special reference to bone growth; Professor W. E. Le Gros Clark, on the structure and connexions of the optic thalamus, on February 17th and 19th; and Professor A. J. E. Cave, on February 22nd, on the morphological and functional anatomy of the human cervical spine. The lectures will be given at the College, at 5 p.m. The Hunterian Oration, by Mr. Wilfred Trotter, will be delivered on Monday, February 15th, at 4 p.m.

The Services

The King has approved the appointment of Mr. Walter Rowley Bristow as orthopaedic consultant at King Edward VII's Convalescent Home for Officers at Osborne, Isle of Wight.

DEATHS IN THE SERVICES

Lieut.-Colonel Arthur Bowdich Cottell, F.R.C.S.Ed., R.A.M.C. (ret.), who died on January 1st, aged 76 years, was educated at Blundell's School, Tiverton, and at St. George's Hospital, London. Having passed the examination for membership of the English College of Surgeons in 1879, he entered the Royal Army Medical Corps, and after a short term of service at home was sent to Hong-Kong. There he was in medical charge during 1882–83 of the hospital ship *Meanee*, which was moored in the harbour. After his return he was stationed at Chatham, then Gibraltar, and Colchester, until, on the outbreak of the South African war, he was appointed to command the 11th Bearer Company, and sailed with it and the 10th Hussars in the s.s. *Ismore*. The ship went ashore, and became a total wreck near the Cape of Good Hope, but no lives were lost. Major Cottell succeeded in landing his medical stores, and was proud of the fact that he was thus able to feed all the shipwrecked troops until relief arrived. He took part in French's famous ride and relief of Kimberley, and was present at the actions of Driefontein and Paardeberg. Like so many others, he fell a victim to typhoid fever, and, after being dangerously ill, was sent home in June, 1900. After a year's sick leave, he was invalided out of the Service, with the rank of lieutenant-colonel. On the outbreak of war in August, 1914, he offered his services, and was appointed to medical command of Mr. Loeffler's steam yacht *Albion*, which transported wounded between Boulogne and Southampton, as "Hospital Yacht No. 9," from October, 1914, to the end of January, 1915, when the authorities discontinued the service. After a short rest he started on a number of lecturing tours on venereal disease. These lectures were addressed to troops at home, and were much appreciated, but, his health giving way, he was forced once more to retire, and was finally invalided. He held the South African war medal with three bars, and the three medals for the great war. Cottell was ever proud of his corps, and it was a great grief to him to have to leave it in 1900 on account of a dilated heart. In the then state of medical knowledge the prognosis in his case was very grave, but he recovered enough to play golf, with considerable effect, to take several voyages to the East, and to Australia and South America, and, finally, to withstand the strain of many stormy passages in a comparatively small vessel between Southampton and Boulogne, till the strain of the lecture tours proved to be the last straw. He was an active member of the R.A.M.C. Benevolent Association and local committees, on which he served until his final illness prevented his attendance.

Lieut.-Colonel George John Gibson, R.A.M.C. (ret.), died on October 28th, 1931, aged 87. He was born on December 27th, 1843, was educated at Queen's College, Cork, and graduated M.D. and M.Ch. in the Queen's University of Ireland in 1866. Entering the Army as assistant surgeon on October 2nd, 1866, he attained the rank of lieutenant-colonel after twenty years' service, and retired on October 21st, 1891. In the old regimental days he served in the 2nd Foot, now the Queen's Own West Surrey Regiment, once known as Kirke's Lambs, and must have been one of the last survivors of the medical officers who served as regimental officers. He served in the Afghan war of 1878–80, was present at the action of the Peiwar Kotah, was mentioned in dispatches in the *London Gazette* of November 7th, 1879, and received the medal with a clasp.

Lieut.-Colonel John Thomas Carey, R.A.M.C. (ret.), died at Saumarez House, Guernsey, on December 31st, 1931, aged 80. He was the last surviving son of Thomas Carey of Frogmore, Guernsey, and of Alicante, Spain, and was born at Alicante on October 17th, 1851. He was educated at Guy's and at Aberdeen, where he graduated M.B. and C.M. in 1875, after taking the M.R.C.S. in 1874 and the L.S.A. in 1875. Entering the Army as surgeon on February 4th, 1877, he became lieutenant-colonel after twenty years' service, and retired on May 25th, 1904. After retirement he was employed on the retired list at Manchester in 1904–8. He served in the Afghan war of 1878–80, when he took part in the assault and capture of the Peiwar Kotah, was mentioned in dispatches, and received the medal with a clasp; and in the Egyptian war of 1882, gaining the medal and the Khedive's bronze star.

Medical News

The first meeting of the Royal Society of Tropical Medicine and Hygiene in its new hall will be held at Manson House, 26, Portland Place, W., on Thursday next, January 21st. Dr. C. M. Wenyon will read a paper at 8.15 p.m. on "Leishmaniasis and the problem of its transmission." A demonstration to illustrate the subject of the paper will be given at 7.45 p.m.

At the annual meeting of the Royal Microscopical Society, to be held at B.M.A. House, Tavistock Square, W.C., on Wednesday, January 20th, at 5.30 p.m., Professor R. Ruggles Gates, F.R.S., will deliver his presidential address on "Nuclear structure."

At the meeting of the Medico-Legal Society to be held at 11, Chandos Street, W.1, on Thursday, January 28th, at 8.30 p.m., Dr. Lionel Weatherly will read a paper on "The liberty of the subject from the medico-legal aspect"; a discussion will follow.

A meeting of the University of London Medical Graduates Society will be held on Thursday, January 21st, at 4 p.m., at the London School of Hygiene and Tropical Medicine. Demonstrations and films will be shown, and tea will be served. All medical graduates of the University of London, whether members of the society or not, are invited. Admission will be by ticket only, for which application should be made, before January 18th, to the honorary secretaries, University of London Medical Graduates Society, 11, Chandos Street, Cavendish Square, W.1.

The next monthly clinical meeting for medical practitioners at the Hospital for Epilepsy and Paralysis, Maida Vale, W.9, will be held on Thursday, January 28th, at 3 o'clock. Dr. E. Blake Pritchard will demonstrate clinical varieties of muscular weakness. Tea will be provided, and it will be a convenience if those intending to be present will notify the secretary.

The Fellowship of Medicine and Post-Graduate Medical Association announces that Dr. W. Langdon Brown will deliver two further lectures on endocrinology on January 18th and 22nd. These will be given at 8.30 p.m. at the Medical Society of London, 11, Chandos Street, Cavendish Square; fee 12s. 6d. each lecture, payable at the lecture room. On January 20th, at 4 p.m., at the same place, the series of lectures on treatment will be continued by Mr. Victor Bonney, speaking on cancer of the uterus. This lecture is free to members of the Fellowship of Medicine; to non-members the fee is £1 1s. for the series, or 5s. a lecture, payable at the lecture room. The syllabus for the forthcoming evening course for the M.R.C.P. examination will be ready shortly; this course will continue from February 22nd to March 18th, and will be open only to members of the Fellowship, on payment of the requisite fee. Other courses open to members are: gynaecology at the Chelsea Hospital for Women, February 1st to 13th; ante-natal treatment, at the Royal Free Hospital, February 5th to 26th; diseases of the chest, Brompton Hospital, February 8th to 13th; medicine, surgery, and the specialties, at the Prince of Wales's Hospital, February 15th to 27th. A course in dermatology, open to non-members, will be given at St. John's Hospital, January 25th to February 20th. Free clinical demonstrations in medicine and surgery will begin on January 18th. Syllabuses may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1.

A new Sunday post-graduate course will open at Charing Cross Hospital Medical School on January 17th, at 10.45 a.m., when Dr. W. J. Adie will deal with the early symptoms of common nervous diseases, and at 11.45 Mr. L. R. Broster will discuss head injuries. The course will be continued on succeeding Sundays until March 20th.

A post-graduate course in oto-rhino-laryngology is being opened at Milan University under the direction of Professor U. Calamida. Further information can be obtained from the secretary of the Medical Faculty, Corso Roma 10, Milan.

The *National Medical Journal of China* has now been amalgamated with the *China Medical Journal*, and the new combined monthly publication will be known henceforward as the *Chinese Medical Journal*. The *China Medical Journal* was started in 1887 by medical missionaries, while the *National Medical Journal*, founded in 1915, had no special connexion with missionary work. The National Medical Association of China has now acquired headquarters in Shanghai, which include a large hall, a library, secretarial offices, and committee rooms. The new journal is issued from this building, and it is now the only medical periodical in the English language published in China.

The issue of *Zentralblatt für Chirurgie* for January 2nd is dedicated to Professor Heinrich Braun, emeritus professor of surgery at Leipzig, on the occasion of his seventieth birthday.

The January issue of *Revue de Laryngologie*, now entering on its fifty-third year, contains an introductory note by its founder, Professor E. J. Moure, with his portrait.

At a meeting of the Académie de Médecine on December 22nd Dr. F. Mesnil delivered an address on Sir David Bruce, who was a foreign corresponding member. The issue of the *Münchener medizinische Wochenschrift* for January 1st also contains a eulogy of him by Dr. G. Olpp of Tübingen, editor of the recently published biographical dictionary of tropical physicians.

Amongst the latest contributions to King Edward's Hospital Fund for London is the sum of £1,000, being the annual subscription of His Majesty the King, Patron of the Fund, and £105 from the Queen.

The rumour current in the lay press that the German Chancellor intended to close several universities, particularly Giessen, Greifswald, and Rostock, has been officially denied.

Professor Bruynoghe of Louvain has been awarded the quinquennial medical science prize of 50,000 francs for his published work during the period 1926–1930.

Letters, Notes, and Answers

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

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QUERIES AND ANSWERS

Prolonged Drug Treatment of Migraine

"66" has suffered from migraine all his life. The attacks are now less definite and clear-cut. Neuralgia—always right-sided, like the migraine—has taken its place. An attack of neuralgia will last a whole day, and this perhaps twice a week Among remedies, phenacetin appears to be as good as any. "66" would like to know if a dose of this—say, 10 grains twice a week—is likely to be harmful in any way, say to vessels or kidneys. What bad effects follow the prolonged use of luminal—to the old or to the young?