

# EPITOME OF CURRENT MEDICAL LITERATURE

## Medicine

### 191 Acute Cerebral Rheumatism

E. TOULOUSE, L. MARCHAND, and A. COURTOIS (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, June 12th, 1931, p. 1119) describe the case of a young woman, aged 20, who contracted acute articular rheumatism on January 1st, 1930, and was admitted into the Tenon Hospital on February 5th, where she was treated with 8 grams of sodium salicylate daily. She was transferred to the Henri-Rousselle Hospital eight days later, since she had developed cerebral symptoms on February 9th. There were at that time no articular symptoms, but mental confusion, motor agitation, and continuous cries were noted. The temperature varied between 100° and 102°. There were no lymphocytes or abnormal albumin in the cerebro-spinal fluid. The Wassermann reactions of the blood and cerebro-spinal fluid were negative. Although 2 grams of salicylate were daily injected intravenously there was no improvement; stupor supervened, and the patient died on February 20th. The brain was found to be congested, and there were some adhesions between the frontal lobes and the inner table. The pia mater was healthy, but the cerebrum showed diffuse cellular lesions with atrophy of the cell body so that the nuclei appeared large. The chromophil bodies were fragmented, and the nuclei eccentric and sometimes extruded. In the subcortical white matter there were small groups of six to ten embryonic round cells, but no involvement of the neuroglia was detected. In the central grey nuclei, the optic thalami, the cerebellum, and the peduncles, there were acute cellular lesions, and in the bulb there was a slight lymphocytic reaction of the pia mater. Well-marked cellular lesions were found also in the nuclei of the cranial nerves.

### 192 Circulatory Efficiency in Heart Disease

H. W. BANSI and G. GROSCURTH (*Deut. med. Woch.*, July 24th, 1931, p. 1276) have made 250 observations of the minute-volume circulation unit (using Grollman's acetylene method), the oxygen intake and carbon dioxide output, the effect of oxygenation on the pulse rate, and the blood pressure on 90 persons, under varying conditions. They found that in heart disease the minute-volume of the circulation did not rise during muscular exertion so much as in normal persons; in severe cardiac cases the volume per beat remained the same, the only increase in circulation rate being brought about by tachycardia. The circulation is thus insufficient for the needs of the body at the time, and an "oxygen debt" is incurred. The increased minute-volume condition has to be continued after the work is finished, and, instead of falling sharply as in normal persons, its curve after exercise shows only a slow return to normal. An abnormal curve of this type was found, not only in cardiac failure, but also in apparently fully compensated, symptomless cases of valvular disease and in myocarditis. Cases of cardiac neurosis, exophthalmic goitre, and supposed post-infective cardiac weakness, on the other hand, gave normal results.

### 193 Tremor in Industrial Mercurialism

G. PIERACCINI (*Med. Welt*, June 20th, 1931, p. 878) states that tremor is one of the most important and characteristic signs of mercurial poisoning, although it is not pathognomonic of this industrial disease. It is found in almost all cases, alike in mild or severe attacks, and in acute and chronic cases. In mild and moderate cases small fine tremors are seen in the hands, lips, and outstretched tongue, while in severe cases the tremors are much more pronounced and generalized. The tremor ceases as soon as the patient comes under treatment by rest, good nourishment, and removal of the cause, but

it is apt to return or to be aggravated by consumption of a small quantity of alcohol or tobacco. The tremor ceases in sleep, except in severe cases, in which three or four attacks may occur in the course of an hour, and be sometimes so violent as to drive the patient out of bed. Recovery may be regarded as complete when administration of alcohol does not produce any tremor in the hands.

### 194 Malignant Hypertension in Childhood

Essential hypertension is predominantly a rare disease under the age of 30, but J. CRAIG (*Arch. Dis. in Child.*, June, 1931, p. 157) reports a case of its occurrence in a girl, aged 8, including the post-mortem findings. She had had headaches for many years, and the period of the malignant phase, which lasted for at least one year, was punctuated by attacks of convulsions, cerebral amaurosis, unconsciousness, transient haemiplegia, and paralysis of a cranial nerve. Some renal impairment was present, but only became pronounced at the end of the disease, though blood was passed in the urine from time to time. The blood pressure rose steadily, and was particularly high in at least two of the series of acute exacerbations. The typical picture of hypertensive retinopathy was always present, with macular exudates, neuro-retinitis, sclerosis of the retinal vessels, and haemorrhages; woolly patches were only noticeable at the beginning of the observation. The necropsy revealed the typical arteriolar changes of essential hypertension, and the renal arteriolo-sclerotic atrophies and necroses of the malignant phase of the disease. There was no history in this case of any family tendency to vascular disease at an early age.

### 195 Serum Reaction following Desensitization

J. C. S. BATLEY (*Arch. of Ped.*, May, 1931, p. 338) records the case of a boy, aged 10, who developed diphtheria after a prophylactic injection of 1,500 units. Desensitization was effected first with 0.12 c.cm. antitoxin with no reaction, followed in half an hour by 0.25 c.c.m., and then 0.5, 1, and 2 c.c.m. were given at half-hourly intervals. Two hours after the last injection patches of erythema and urticaria appeared on the skin in several places. Vomiting began, and the boy became progressively worse. He had two loose stools. His face and extremities were cyanosed and his pulse could not be felt. After a subcutaneous injection of 1,300 c.c.m. of saline the rectal temperature rose from 101 to 106°. The following day he had a generalized morbilliform rash and slight swelling of the cervical glands, but on the next day the rash disappeared, and the temperature was only 99°. Uninterrupted recovery ensued without any more antitoxin.

### 196 Syphilitic Cardiac Disease

E. P. CARTER and B. M. BAKER, jun. (*Bull. Johns Hopkins Hosp.*, May, 1931, p. 315), review cardio-vascular syphilis from its historical aspect, and remark that the fuller knowledge of syphilitic aortitis dates back to the most fifty years. They have analysed the admissions to the Johns Hopkins Hospital during twelve years, and find that the incidence of the disease is four times greater among coloured than among white patients. Of all patients proved to be suffering from syphilis rather more than one-fifth had aortic insufficiency or aneurysm. In its evolution cardio-vascular syphilis was regarded as falling essentially into four groups: aortic insufficiency, insufficiency with aneurysm, aneurysm, and syphilitic myocardial disease. A detailed analysis of 100 patients suggested the following points as of most importance in the diagnosis: a relatively abrupt and unexpected onset of circulatory embarrassment; increased retro-manubrial dullness, with alteration in the quality of the second sound; absence of evidence of rheumatic infection; dyspnoea on exertion; paroxysmal dyspnoea, often nocturnal; precordial pain, especially if paroxysmal; and a

positive Wassermann reaction. The special characters of paroxysmal dyspnoea in syphilitic aortitis and the great infrequency of coexisting auricular fibrillation were very noticeable. In their views on treatment the authors conform to the modern view, treating first any failure or anginal condition that is present, and later giving iodides and mercury for at least ten or twelve weeks. The importance of exhibiting small initial doses of the arsenicals is emphasized, and reference is made to the successful results of treatment along these lines reported by Danglade.

#### 197 Herpes Zoster and Encephalitis

ANDRÉ-THOMAS and J. B. BUVAT (*Paris Méd.*, June 27th, 1931, p. 600) who record an illustrative case, state that among the numerous nervous manifestations in patients with herpes zoster hemiplegia is one of the most frequent, especially in cases of ophthalmic zoster. The causal relations between zoster and hemiplegia have not always been firmly established, especially when the hemiplegia does not occur at the same time as the zoster, only appears several weeks after the eruption, and develops in an arterio-sclerotic, atheromatous, or syphilitic subject. The question arises whether the area of softening which gives rise to the hemiplegia differs from those frequently observed in old persons who are not suffering from herpes zoster. The case recorded was that of a woman, aged 58, who had been suffering for several weeks from a complicated psychosis, and suddenly developed fever and thoracic zoster. Coma rapidly ensued, followed by death in eight days. No mention is made of a necropsy, but inoculation of the contents of the herpetic vesicles on to the cornea of a rabbit failed to produce keratitis.

#### 198 Nervous Complications of Acute Leukaemia

M. KIEGER-PARENT (*Thèse de Paris*, 1931, No. 169), who records three illustrative cases in young children, states that three forms of nervous complications may be found in leukaemia—namely, the haemorrhagic, a leukaemic infiltration of the neural axis or cranial nerves, and spinal complications. The haemorrhagic complications are much the more frequent, cerebral haemorrhage occupying the first place among them. Cerebral haemorrhage in most cases occurs in the course of acute leukaemia, and has principally been found in children. It is often the first and only sign of a leukaemia which has hitherto been latent. It may sometimes assume a medico-legal interest, especially in cases of sudden death in children.

## Surgery

#### 199 Thyroidectomy with the Radio-knife

A. S. JACKSON (*Annals of Surgery*, June, 1931, p. 1132) discusses the advantages and disadvantages of the radio-knife, which he has employed in 160 operations. It has been tried as a routine in all goitre operations, but it was found that a more satisfactory skin incision and a better scar result from using the scalpel. The radio-knife is so rapid in action that it is apt to penetrate the platysma and to cause bleeding from the anterior jugular veins. It was found that the radio-knife is a time-saving factor in thyroidectomy, that haemostasis is better, and that with a drier surgical field the operation is facilitated, fewer forceps being required. More thyroid tissue can be removed with less danger to the recurrent laryngeal nerves and the parathyroid glands than with the scalpel; the radio-knife is also more successful than the scalpel or cautery in the treatment of malignancy of the thyroid. It is of particular value in resecting the hyperplastic or exophthalmic type of goitre, since with the radio-knife it is possible to hollow out the gland, preserving a very thin lateral, capsular wall and narrow posterior strip protecting the recurrent laryngeal nerves and the parathyroid gland. There are some disadvantages following the use of the radio-knife, the most important being post-operative haemorrhage, of which there were three cases in the

series. Occasional skin burns have resulted from coagulation too near the surface of the skin, and these cause slight disfigurement of the scar. The radio-knife has proved unsatisfactory in resecting large multiple cystic degenerating adenomas. Other disadvantages are the tendency of the apparatus to fail to function when needed and the fact that the surgeon is dependent on the co-operation of others in the use of the radio-knife. In spite of these drawbacks Jackson concludes that the radio-knife should be used as a routine, since it permits the surgeon to perform a smooth, speedy, and comparatively dry thyroidectomy, thus increasing the patient's chances of recovery.

#### 200 Crossed Renal Dystopia

M. TRINCAS (*Arch. Ital. di Urol.*, May, 1931, p. 447), who records a case in a woman aged 20, applies the term crossed renal dystopia to the kidney which has crossed the vertebral column and is situated above or below or at the same level as its fellow. The two kidneys sometimes remain separate, but more frequently they unite at their poles or inner margins, forming a unilateral renal symphysis. The anomaly is due to a deviation in the embryonic evolution of the kidney, the nature of which is unknown. The dystopic kidney is an essentially anomalous organ with diminished resistance; it often retains its foetal type, and is sometimes atrophied. The pelvis, calyces, and ureter are often the seat of malformations. The various anatomical changes found in the dystopic kidney explain the frequency of hydronephrosis, pyonephrosis, and calculus formation. As the result of compression or traction the dystopic kidney sometimes gives rise to intermittent pain which is usually situated in the corresponding lumbar region, and radiates to the groin and lower limb. Until recently the diagnosis was extremely difficult, but the intravenous injection of uroselectan now enables pyelograms to be obtained similar to those furnished by retrograde uretero-pyelography without the drawbacks associated with catheterization of the ureters. Treatment consists in division of the two kidneys followed by nephropexy of the dystopic organ, or in cases where this is impossible, as in Trincas's patient, the whole renal mass should be attached to the psoas muscle on the posterior and lateral wall of the abdomen. By this method the pain, which is often the only symptom, is abolished.

#### 201 Results of Treatment of Varicose Veins by Injections

S. HANSEN (*Ugeskrift f. Laeger*, June 11th, 1931, p. 646) reviews the experience of the treatment of varicose veins at the surgical polyclinic of the Rigshospital in Copenhagen and in his private practice during the three-year period beginning April, 1927. Of the total of 589 patients, 175 were not treated by injections for various reasons. Among the remaining 414 there were as many as 332 women. The ages of the patients ranged from 17 to 75 years, the average being 37, and the average duration of the varicose veins before treatment was 10 years; they had begun in many cases in childhood. In ninety-six cases one or more ulcers existed, and in eighty-four cases these ulcers were still open when the injections were started. In most cases the injection consisted of a 20 per cent. solution of sodium salicylate. These injections were sometimes preceded by injections of a 50 per cent. solution of grape sugar, which possesses the advantage of practically never provoking pain or necrosis. The fourteen cases of necrosis following the injections of sodium salicylate could largely be traced to faulty technique, for in the first year this complication occurred in 10 per cent. of the cases, in the second year in 2 per cent., and in the third year in 1 per cent. Phlebitis with a rise of temperature and disturbances necessitating rest in bed occurred in six cases. General disturbances with pain and malaise occurred in three cases, mental disturbances in one, tinnitus and vomiting in two, and menstrual troubles in one; there was no case of embolism, but in four cases there was, at the time of injection, a sense of faintness or even signs of collapse. Altogether there were thirty-eight cases associated with more or less troublesome complications during

the treatment. As to the permanency of the results, they were checked from one to three years later in 107 cases. The author classifies these results in various tables, according as the condition was or was not obscured by complications such as ulcers. He concludes that it is well to induce patients to report periodically after treatment, and to warn them that it may have to be repeated after an interval of months or years.

## 202 Schüller's Disease

J. FREEMAN-DAHL and R. FORSBERG (*Norsk Mag. f. Lægevid.*, May, 1931, p. 523) record a case of Schüller's disease or xanthomatosis with cranial defects, which was first described by A. Schüller of Vienna in 1915 and subsequently in 1919 by H. A. Christian of Boston, under the name of "defects in membranous bones, exophthalmos and diabetes insipidus," and hence sometimes known as "Christian's syndrome." Of fourteen cases collected by Rowland, six were in girls and eight in boys, aged from 3 to 16 years. The most constant feature is the characteristic defects in the bones of the skull, but sometimes defects are found in other bones, most frequently those of the pelvis, vertebrae, and ribs, and also in the long bones. Diabetes insipidus and exophthalmos are the next most constant symptoms. The exophthalmos, which may be unilateral or bilateral, has been regarded as a mechanical result of defects in the orbit. The course is chronic but progressive. Of Rowland's fourteen patients seven died of their disease. The present case was that of a girl, aged 14, who had injured her left temporal region at the age of 5. Five years later she developed polydipsia and polyuria; she also showed exophthalmos and retardation of growth. X-ray examination of the cranium revealed a typical map-like skull. The diagnosis of Schüller's disease was confirmed by the negative Wassermann reaction in the blood and cerebro-spinal fluid, the absence of Bence-Jones bodies in the urine, and, last but not least, the high blood cholesterol which indicated a disturbance of lipid metabolism. A trial was being made of x-ray therapy.

## 203 Isolated Forward Dislocation of the Fibula

W. SCHWARZHAUPT (*Zentralbl. f. Chir.*, June 20th, 1931, p. 1579), who records an illustrative case, states that dislocation at the tibio-fibular joint unaccompanied by fracture is a very rare event. Hirschberg in 1888 collected nine forward and two backward dislocations, and Rinehart, in 1902, seven forward and five backward ones, while seventeen cases of isolated dislocation of the tibio-fibular joint were recorded by Teichmann in 1926. In most of the cases in which the head of the fibula is dislocated, the upper third of the bone shows an oblique fracture. Schwarzhaupt's patient was a lad, aged 19, who a year previously had developed a haemorrhagic effusion into the left knee-joint while playing football. The accident on this occasion was due to a fall while he was trying to free his left leg from the mud into which it had sunk. There was a well-marked protrusion of the head of the left fibula, which was very tender. The knee-joint was freely movable, and a skiagram showed an isolated forward dislocation of the head of the fibula without fracture. The dislocation was reduced under general anaesthesia. A plaster bandage was applied for a fortnight, and after another fortnight's mechanical treatment the patient was able to resume his work.

## 204 Treatment of Increased Intracranial Pressure

F. KENNEDY and S. B. WORTIS (*Journ. Amer. Med. Assoc.*, April, 1931, p. 1284) state that for the treatment of increased intracranial pressure to be effective it must be based on an intelligent appreciation and proper application of exact physiological knowledge. In 1927 they conducted extensive experiments in order to record pressure changes inside the skull. Their findings were that pressure is increased during sleep, and by the assumption of the horizontal position, coughing, stool straining, struggling, and ether anaesthesia; it is also raised by injections of morphine, glyceryl trinitrate, and hypotonic solutions. The pressure is reduced by raising the head above the level of the heart,

by injecting caffeine sodium benzoate and hypertonic solutions, by the removal of cerebro-spinal fluid by the lumbar route, and by periodically sustained deep breathing. Clinically, the causes of increased intracranial pressure in the order of frequency of occurrence are: skull fracture, brain tumour, meningitis, cerebral haemorrhage and thrombosis, subarachnoid haemorrhage, hydrocephalus due to inflammation around the ventricular foramina, hypertension associated with headache, and acute cerebral oedema. The authors outline their method of procedure in all cases of increased intracranial pressure. A full clinical examination is associated with estimation of the blood pressure, a blood count and biochemical investigation, urine analysis, gastric lavage and analysis, and complete examination of the cerebro-spinal fluid for diagnostic purposes. The treatment given is lumbar puncture; the intravenous injection of 100 c.cm. of a hypertonic 50 per cent. solution of dextrose three times daily; the hypodermic injection of  $7\frac{1}{2}$  grains of caffeine sodium benzoate every four hours; the introduction at four-hourly intervals into the rectum of 120 c.cm. of a 25 per cent. solution of dextrose; and the elevation of the head of the bed by 15 to 45 degrees. If these measures prove inadequate a skull trephine is performed for ventricular puncture in the posterior fossa. In comatose patients with marked papilloedema who do not react to such procedures within two to three hours, a right subtemporal decompression is undertaken. In suitable cases anti-meningococcal serum is effective.

## Therapeutics

### 205 The Effect of Saponin in Spinach

The dietetic and medicinal properties of spinach have been long known; experiments have shown that when two or three teaspoonfuls of it are given to an infant a rapid increase in weight often follows. In 1914 the presence of saponin in spinach leaves was discovered; spinach has, consequently, a definite haemolytic action in blood gelatin, and it has been suggested that this constituent of spinach might be deleterious. L. KOFLER (*Wien. klin. Woch.*, June 26th, 1931, p. 852) has found that other vegetables such as beetroot and potatoes contain a larger quantity of saponin than is present in spinach. The haemolytic action depends on the pH concentration in the vegetable juices, and this compound is decomposed by the hydrochloric acid of the gastric juice. Kofler concludes that the presence in spinach of chlorophyll, mineral salts (especially those of iron), secretin, and vitamins explains the food value of this vegetable. Saponin stimulates the digestion and promotes peristalsis and absorption.

### 206 Treatment of Dementia Paralytica by Diathermy

C. A. NEYMANN and M. T. KOENIG (*Journ. Amer. Med. Assoc.*, May 30th, 1931, p. 1858) report a comparative study of the therapeutic results in dementia paralytica following the employment of diathermy, and the induction of malaria and rat-bite fever (sodoku). They find that the remission and improvement rates were definitely more favourable when diathermy was used. The death rate was 18 per cent. for malaria, 10 per cent. for sodoku, and 0 for diathermy. The remissions in the case of sodoku persisted only for one or two months; in malaria for three years. They occurred in 8 per cent. of cases in the first form of treatment, and in 22 per cent. in the second. Diathermy resulted in 24 per cent. remissions, many patients showing signs of improvement shortly after the treatment had been instituted; the authors believe that still more satisfactory results will be obtained by more intensive and prolonged applications. Diathermy, moreover, can be tried in cases where the induction of hyperpyrexia by inoculation is contraindicated, and can be employed by any physician who has mastered the simple technique. In many cases ambulant patients can be thus dealt with, for complications are infrequent; the height of the consequent pyrexia can be regulated with absolute

precision, in sharp contrast with the less controllable sequels of inoculation therapy. The authors add that it is more difficult to arrest the course of rat-bite fever than is always realized; one single injection of nearsphenamine is often inadequate, and five or six injections may be required. They have used diathermy without untoward effects in patients suffering from arterio-sclerosis, diabetes, and advanced organic cardiac disease.

#### 207 Serotherapy in Scarlet Fever

A. STEWART (*Minnesota Med.*, June, 1931, p. 537) restricts the use of scarlet fever antitoxin to septic or toxic cases; all the patients in his series recovered who were so treated before the fourth day of the disease. In 7.5 per cent. adenitis and otitis media developed, and 23 per cent. of the patients had serum sickness, a few reactions being moderately severe, though most were mild. Stewart commends scarlet fever antitoxin as a specific and prompt cure for this infection, if given early, and particularly valuable in septic and toxic cases. He advises against its prophylactic employment, however, because some patients do not become immunized, and others lose such induced immunity very quickly. Moreover, in many instances the reactions are very severe, and Stewart has had one fatal case. He finds the Schultz-Charlton blanching test helpful in distinguishing scarlet fever from erythemas and drug rashes, but of little use in the diagnosis of mild cases where the rash is only slight.

208 A. LICHTENSTEIN (*Acta Paediatrica*, June 30th, 1931, p. 549) records his observations on 512 cases of moderate and severe scarlet fever treated with scarlet fever streptococcus antitoxin at the Stockholm Epidemic Hospital between 1926 and 1929, during which period the total number of cases of scarlet fever under treatment at the hospital was 2,104. The dose was 10 c.cm., and in exceptional cases 20 c.cm., injected intravenously. In uncomplicated cases the serum obviously had a rapid and favourable effect. If given within the first three days of the disease it appeared to reduce the frequency of subsequent complications as compared with cases which did not receive the serum until the fourth to seventh days of disease, or did not have any serum treatment at all. None of the cases proved fatal in which serum had been given before the appearance of any complications. Apart from slight collapse in a few cases, and one instance of serum disease, this treatment had no bad effects.

#### 209 Liver Therapy in Anaemia

R. T. BEEBE and G. E. LEWIS (*Amer. Journ. Med. Sci.*, June, 1931, p. 796) find that the maintenance dose of liver, or a potent substitute, in cases of pernicious anaemia varies with different patients. They were able to classify 108 patients into four groups: (1) 64 in whom the red cell count remained at the normal level, with relatively small amounts of effective substance; (2) 31 who needed large amounts; (3) 5 in whom the count remained 20 per cent. below normal with large doses of liver and iron; (4) 8 patients whose red cells and haemoglobin remained below normal with large amounts of liver, but maintained normal level when iron was given. They confirm previous observations regarding the inhibitory effect on liver treatment caused by infection, and suggest the special effect of arterio-sclerosis in conditioning the response to liver therapy, a larger maintenance dose being needed when arterio-sclerosis is present; it was noted that neuromuscular symptoms decreased less in these cases. The authors conclude that the maintenance dose is "not some liver, but enough liver for the given case."

210 F. AMANTEA (*Il Policlinico, Sez. Prat.*, June 22nd, 1931, p. 873), by giving doses of liver extract subcutaneously to dogs rendered anaemic by bleeding, and to human subjects suffering from various types of secondary anaemia, has obtained satisfactory evidence that these anaemias may be successfully treated by hepatotherapy. Out of 11 human subjects one only failed to show improvement; 2 c.mm. of extract were given daily over periods of three to four weeks. The author considers that the lack of success reported by other observers may be

accounted for by the administration of too small doses, by the presence of infection or other complication, or by not commencing the treatment soon enough. He is opposed to the use of fresh liver in any form, believing it is usually distasteful to the patient, disturbing to the appetite, and in consequence not taken regularly.

#### 211 Alepol in Leprosy

B. D. DIKSHIT and T. M. ROW (*Indian Med. Gaz.*, June, 1931, p. 317) describe the action in leprosy of a sodium salt of the fatty acids of hydnocarpus oil termed alepol. Of fairly low toxicity, it is rapidly absorbed when given hypodermically or intramuscularly. Intramuscular injections of 3 per cent. strength are well tolerated and cause no marked irritation. Alepol irritates mucous membranes and, owing to this action on the gastric mucous membrane, it causes vomiting when administered orally. It possesses marked haemolytic properties; when given intravenously it causes a fall in blood pressure due to its action on the heart. It has no special action on other systems of the body. The effects of the drug in eight cases are briefly summarized; apparently improvement occurs only in cases with lesions falling into the group A1.

## Neurology and Psychology

#### 212 The Vibration Sense in Post-encephalitic Parkinsonism

C. WORSTER-DROUGHT and T. R. HILL (*Journ. Neurol. and Psychopathol.*, April, 1931, p. 318) record twenty-five cases of generalized post-encephalitic Parkinsonism, all of which were found to exhibit definite impairment of the vibration sense, and deep-pressure pain. The test employed was measurement of the vibrations by a tuning-fork, the base of which was placed firmly upon a bony surface or prominence. Clinically there is an extremely close correlation between this sense and the ability to recognize passive movements; when one is lost or impaired, the other is affected proportionately. The curves obtained by plotting the time readings for various bony projections, in both normal and Parkinsonian patients, were found to be parallel, but in Parkinsonism the curve obtained differs in showing a diminution in the period of perception of the stimulus amounting to five to twelve seconds. The more severe the syndrome, the greater was the reduction in the period of perception, this period being at its shortest in cases with marked bradyphrenia. Cases of Parkinsonism in which one side of the body was more involved than the other yielded lower readings on the more affected side. The authors discuss the explanation of the slight diminution of vibration sense, and of appreciation of the deep-pressure pain, and suggest the presence of some degree of depression of the essential thalamic function consequent on the encephalitic infection.

#### 213 Integration of Sensory Processes

R. S. CREED (*Brain*, April, 1931, p. 29) reviews critically the various opinions held about the physiological integration of sensory processes within the grey matter of the nervous system. He agrees that the afferent pathway from a receptor organ to the higher levels of the brain can no longer be visualized as a telegraph line, being more similar to a complicated telephone exchange. Impulses travelling along peripheral nerve fibres influence, and are influenced by, stimuli from end-organs of similar and of diverse function, being at different times inhibited or reinforced. Special attention is devoted to the case of the eye, and the way in which physical integration of the processes originated in the retina is brought about. The classification employed by the author is based on the character of the interaction which is manifested, the types being: (1) temporal summation; (2) spatial summation; (3) simultaneous contrast phenomena; and (4) inhibition in the retino-cerebral apparatus. Creed discusses the physiological interaction between the two retino-cerebral apparatus, and asserts that binocular fusion and rivalry of contours, of brightness, or of colour are mainly psychical

phenomena involving interplay between sensations and percepts. There is no more than a slight degree of convergence of the conducting paths from corresponding areas of the two retinae to form a final common path to the sensorium. Examples are taken also from the sensations of pain, cold, and heat originating in other organs, and Creed adds that in the past far too little attention has been paid to such integrated mechanisms by most workers on the physiology of sense organs.

#### 214 Ascending Medullary Syphilis

L. BOURRAT (*Journ. de Méd. de Lyon*, June 20th, 1931, p. 381) states that, besides the common form of medullary syphilis giving rise to spastic paraplegia, there exist, though rarely, flaccid paraplegias which are due neither to radiculitis nor to tabes, since motor troubles with muscular atrophy alone attract attention, and sensory disturbances are absent. Such a case is recorded; commencing as a flaccid paraplegia, with weakness in the lower limbs, it developed into a quadriplegia without any pyramidal symptom. Though the patient denied alcoholism and specific infection, the Wassermann reaction of both the blood and cerebro-spinal fluid was strongly positive. The complete absence of sensory symptoms excluded radiculitis or polynneuritis, and, in conjunction with the results of laboratory tests, pointed to a medullary syphilis of poliomyelitic type. The patient responded rapidly to treatment with mercury cyanide and novarsenobenzol before the muscular atrophy became pronounced. The elective site of the disease is the anterior horns, and, as demonstrated anatomically, in the anterior radicular arteries. Bourrat, agreeing with Lortat-Jacob and Delille, and Giroit, that medullary syphilis never occurs in regularly treated subjects, but mostly in those completely ignorant of their infection, believes that a similar ignorance is found in many cases of radiculitis yielding to arsenobenzol therapy. In such cases an intensive specific treatment, instituted early in the disease, always gives complete and rapid functional cure.

## Obstetrics and Gynaecology

#### 215 The Action of Adrenaline on Abnormal Uterine Contractions

P. RUCKER (*Gynéc. et Obstét.*, May, 1931, p. 412) states that adrenaline will cause an intense contraction ring in the pregnant uterus to disappear for a sufficiently long period to permit the performance of version or extraction by forceps. Prolongation of labour is frequently due to an unrecognized contraction ring round the neck of the foetus. A case is quoted in which a contraction ring in this position had proved resistant to deep anaesthesia. A hypodermic injection of 0.5 c.cm. of a 1 in 1,000 solution of adrenaline caused the disappearance of the ring in a few minutes; it was then easily possible to extract the child by version. As the effect of adrenaline is of short duration it sometimes becomes necessary to repeat the dose. Since this preparation causes cessation of uterine contractions its use in threatened abortion is logical. Rucker quotes a case in which by repeated injections parturition was postponed for three weeks after the first pains; normal delivery of a live child resulted.

#### 216 Pregnancy Toxaemia with Persistent Hypertension

R. MITCHELL (*Canadian Med. Assoc. Journ.*, July, 1931, p. 71) reports a case of recurrent toxaemia in a multipara, which was associated with persistent hypertension. The patient, aged 46, came under observation owing to three pregnancies having been complicated by toxaemia, and her systolic blood pressure remaining steadily over 200. Details are given of pregnancies in 1924, 1927, and 1929, respectively, these being the last three of nineteen pregnancies, sixteen living children having been born; the patient was apparently in good health until 1924. Mitchell remarks that the patient is still able to carry on her full duties as the mother of a large family, and it is difficult

to diagnose the existence of a chronic nephritis, since the urinary signs are negative, although she undoubtedly has hypertension, which gives rise to such symptoms as severe headache. He concludes that the strain of repeated pregnancy has been too great for the liver and kidneys, bringing about serious crises in her last three pregnancies; during them albuminuria was present, and casts were found. Although renal efficiency tests have failed to reveal any kidney defects, there is little reason to doubt that another pregnancy would be attended with a recurrence of the toxaemia. Menstruation continues regularly, and such a possibility has therefore to be seriously considered. The author adds that it is probable that after several years the hypertension will lead to arteriosclerosis of the kidneys.

#### 217 Protozoal Vaginitis

J. P. GREENHILL (*Journ. Amer. Med. Assoc.*, May 30th, 1931, p. 1862) finds that vaginitis due to *Trichomonas vaginalis* is fairly common in both pregnant and non-pregnant women. A profuse vaginal discharge is associated with burning or itching sensations in the vulva. The vaginal mucosa is usually orange-red and roughened, and the discharge is greenish-yellow, foamy, purulent, and foul smelling. The *Trichomonas* organisms are easily detectable in hanging drop preparations because they are actively motile. For treatment Greenhill recommends thorough cleaning of the vulva and vagina with tincture of green soap, washing this out with mercuric chloride or tap water, applying hexyl-resorcinol freely, and inserting into the vagina tampons soaked in glycerin. This treatment is repeated every two hours until two consecutive examinations of hanging drop preparations are found to be free from the organisms. Patients should be re-examined immediately before and just after the subsequent menstrual periods, since recurrence of the infection then is not uncommon. The author adds that the source of these parasites is still uncertain. Some authorities hold that they pass from the rectum into the vagina, but others believe that the intestinal form of *Trichomonas* is a different species. The infection does not appear to be contagious.

218 H. G. FURNELL (*Med. Journ. of Australia*, May 16th, 1931, p. 604) discusses two cases of infection by the *Trichomonas vaginalis*, which were at first suspected to be gonorrhoeal; the motility of the infecting organism cleared up the diagnosis. He employed the usual treatment of scrubbing the vagina with a swab, using green soap and a little water. After drying, the mucous surfaces were painted with 2 per cent. mercurochrome, and a glycerin tampon was subsequently introduced. He is inclined to think that diathermy may prove effective in this condition.

#### 219 Uterine Bleeding from Essential Thrombopenia

According to B. ZONDEK (*Zentralbl. f. Gynäk.*, May 30th, 1931, p. 1791) essential thrombopenia is a not very uncommon cause of severe uterine haemorrhage; this may be the most prominent, or even the only, clinical symptom. The diagnosis is made by examination of the blood, which shows a prolonged bleeding time, usually a normal coagulation time, and a striking reduction in the thrombocyte count. The best treatment consists in blood transfusion, followed by x-radiation, in stimulant doses, of the bone marrow; irradiation of the spleen is more likely to do harm than good, and improvement following splenectomy may be vitiated by relapses. The case is described of a patient who at puberty had to remain in bed for three months on account of menorrhagia, accompanied by bleeding from the nose and gums. At the age of 23 to 25 these symptoms recurred in such a degree as to endanger life; the platelet count was reduced by 94 per cent., and the haemoglobin to 15 per cent. Splenectomy was performed as a last resource, and the patient, after complete re-establishment of the blood picture, enjoyed good health for four years, until copious metrostaxis accompanied by generalized subcutaneous bleedings again jeopardized her life. Recovery now followed the transfusion of 200 c.cm. of blood and irradiation of the long bones of one leg.

## Pathology

### 220 Effect of Carbon Dioxide on Respiration

J. BARCROFT and R. MARGARIA (*Journ. Physiol.*, June 26th, 1931, p. 175) have experimentally investigated the effect of CO<sub>2</sub> inhalation upon human respiration. They find that the rates of both inspiration and expiration are quickened, and that the time taken by each phase is shortened. The rate of inhalation of air at the middle of inspiration varies almost exactly with the total ventilation. These variations were found by the authors to be the same for a person, whether the hyperpnoea was produced by CO<sub>2</sub> inhalation or by exercise. The maximum total ventilation produced by exercise was nearly twice as great as that produced by the highest concentration of CO<sub>2</sub> which could be breathed for a quarter of an hour. The authors conclude, therefore, that CO<sub>2</sub> inhalation and exercise act in a similar way, but the maximal effect of the first falls short of that of exercise. The breathing of 7.5 per cent. of CO<sub>2</sub> for twenty minutes produces a shock from which the system does not wholly recover for some hours. It seems clear that carbon dioxide can only be one contributory factor in the production of dyspnoea by exercise.

### 221 Bacteriolysis of Koch's Bacillus in the Tissues

After summarizing their previous work on the bacteriolysis of Koch's bacillus, C. RICHEL, jun., DUBLINEAU, and R. COUDER (*Journ. de Physiol. et de Pathol. Générale*, June, 1931, p. 277) record the results of further experiments, which indicate that bacteriolysis is caused by healthy tissues; similar work on tuberculous subjects has not yet been undertaken. This bacteriolysis in the tissues is believed to be due to a chemical principle (not a bacteriophage), which is thermolabile and filterable; it belongs to certain proteins of animal origin, and was found to be particularly abundant in the hepatic, muscular, and globular proteins. While the important process in the cure of tuberculosis—namely, the elimination of the bacilli by the bile, urine, or intestine—is not ignored, the authors consider this chemical defence, either by the phagocytic ferments or more especially by the parenchymatous cells, to be a predominant factor.

### 222 Sedimentation of Red Cells

B. ENOCKSSON (*Acta Med. Scand.*, May 26th, 1931, p. 360) has shown that the electrolytes are determining factors in the sedimentation rates of red cells. Red corpuscles in one and the same suspension can be separated into at least two groups with different rates of sedimentation, suggesting that structural qualities of the corpuscles may also be of significance in determining the sedimentation rate. The author has also shown that this differentiation in the sedimentation rate may be caused by quite minute variations in salt concentration such as are not unlikely to occur *in vivo* under pathological conditions. It is suggested that the cause of these phenomena may consist in variations in agglutination produced by different salt concentrations, in conjunction with structural differences in the red cells which may be present even in the same blood.

### 223 The Suprarenals in Experimental Rheumatism

G. ALEXANDRESCO and MARIE LAUTIER (*Acta Rheumatologica*, May, 1931, p. 19) made a study of the lesions in the suprarenals of monkeys experimentally infected with the diplo-streptococcus of rheumatism, with the following results. The lesion bore a direct relation to the intensity, duration, and method of administration, and the form of the micro-organism. In attenuated parenteral infection of short duration the suprarenals showed a histo-physiological reaction in the form of overactivity which was most marked in the cortex; this reaction was in no way characteristic of rheumatic infection. In repeated and prolonged infection by the intestinal tract with the diplococcal form an extensive degeneration with defective function of the cortical parenchyma was found at the end of six weeks, together with an almost complete necrosis of the medulla, and an intense

lympho-connective tissue reaction. In an attenuated and prolonged infection by the intestinal tract the suprarenal parenchyma at the end of three months was much reduced quantitatively and qualitatively, both in the cortex and in the medulla, and there was an intense connective tissue reaction. Generally speaking, in experimental rheumatism in monkeys the suprarenals are constantly affected, but, contrary to what the authors found in the case of the thyroid gland, the histological reactions were in no way characteristic.

### 224 Morbid Histology of Pink Disease

Very few necropsies in pink disease have included a microscopical examination of the nervous system, and, therefore, W. G. WYLLIE and R. O. STERN (*Arch. Dis. in Childhood*, June, 1931, p. 137) record the results of the histological examination of this system in seven cases. In all of these the spinal cords showed the diffuse infiltration with small cells first described by Paterson and Greenfield, and considered by those investigators to be glial rather than haematogenous. The present authors agree with this conclusion, but they could not demonstrate the existence of cellular processes by either neuroglial or microglial staining methods. Chromatolysis of the central type was found in the anterior horn cells of the spinal cord in five cases; it was more apparent in the lumbo-sacral region, particularly extensive in the most chronic case, and clearly due to an "axonal reaction." In only two instances was there any abnormality above the level of the medulla. The authors conclude that the essential lesions in pink disease appear to be situated in the skin and in the nervous system, though it is probable that the skin lesion is not pathognomonic. In all the cases the clinical symptoms were much in excess of the pathological findings, although cellular infiltration was always present, and degeneration of the peripheral nerves was found in four cases. Discussing the pathogenesis of this condition, the authors remark that vitamin deficiency can be excluded, and that no history of a preceding infection or the presence of an inflammatory cervical adenitis was obtained. Liver therapy proved effective in the general condition of some of the patients under observation, the irritability and pain quickly subsiding, and there being no recurrence.

### 225 Yellow Fever in White Mice

J. E. DINGER (*Zentralbl. f. Bakt.*, June 24th, 1931, p. 194) has confirmed and extended the work of Theiler on the susceptibility of the white mouse to yellow fever. The intracerebral inoculation of mice with 0.05 c.cm. of infective blood from a *rhesus* monkey gives rise, after an incubation period of five or six days, to an illness characterized by ruffling of the coat, loss of the usual activity, photophobia, paresis of the hind legs, tonic and clonic contractions of the whole body, and finally coma and death in six to nine days. At the necropsy there is found an acute encephalitis, often accompanied by dilatation of the skin vessels, swelling of the lymph glands, haemorrhages into the stomach, erosion of the gastric mucosa, fatty degeneration of the liver, and enlargement of the suprarenals. Microscopically the brain shows dilatation of the capillaries, proliferation of the vascular endothelium, and cellular infiltration, but no specific eosinophilic inclusion bodies, similar to those described by Torres, are to be found in the ganglion cells. By the intracerebral passage of the brain suspension the disease can be carried on indefinitely through mice, and even after eighteen passages the virus is still capable of giving rise to typical yellow fever in monkeys. In the mouse the virus has a strong neurotropic affinity, being limited in distribution to the central nervous system and the suprarenals. Infection is possible by the subcutaneous, intramuscular, and intraperitoneal routes, but the proportion of positive results is lower than after intracerebral inoculation, which is almost uniformly successful. Filtration experiments with brain suspension in 10 per cent. rabbit serum showed that the virus readily passed through Seitz filters; saline solution was found unsuitable for making suspensions, since it killed the virus very rapidly. The filtrates can be neutralized by immune monkey serum.