ABSTRACTS

DE LA CAMARA, P. y MORALEDA, C.: (1931). Observaciones sobre Treinta y un Casos de Paludismo Tratados con Quiniostovarsol. (Observations on Thirty-one cases of malaria treated with Quiniostovarsol.) Medicina de los Países Cálidos, 4: 81.

The authors have treated thirty-one cases of malaria with quinine-stovarsol. They deduce from the observation of these cases that the quinine-stovarsol has an action upon the *Pl. vivax* and upon the schizonts of the *Pl. falciparum* similar to that of quinine and of plasmochin; the action upon the gametocytes of the *Pl. falciparum* is slower, leading to their disappearance in ten to thirty days.

Studying the curve of the gamelocytes of *Pl. falciparum* by cmm. of blood during the treatment, the authors have found that the course marked by Raynal is not constant (4 times in 13 cases).

The quinine-stovarsol has produced a phenomenon of intolerance to quinine in one case; in two cases the surpassing of the tolerated dose produced peculiar symptoms of intolerance (vomits, and chiefly a thermic elevation).

In all cases the quinine-stovarsol has given excellent results upon the splenomegaly and the general state of the patients, producing an increase in weight.—*L. G. Hernández.*

ORLANDI, NOEL: (1931). Sui Tumori delle Meningi. Revista Sur-Americana, 14: 41.

The author has studied thirty-five tumors of the meninges. On the basis of the histopathological characteristics, he subdivides them in several groups. The first includes fifteen tumors of the properly called "meningioma" type, and he considers all derived from the proper meningeal tissue. The second group includes ten tumors originated from blood or lymph vessels, or from elements strictly connected with them, among which there are one hemangioma, five hemangioendotheliomas, two lymphangioendotheliomas, one angioreticuloma with foci of gliosis.

In a third group there are tumors of gliomatous nature of the intracranial-spinal meninges, all derived from heterotopic elements. The author finally gives a report regarding five cases of meningeal neuronomata and two cases of v. Recklinghausen disease with tumors of the "meningioma" type spread all over the meninges.—*L. G. Hernández.*

KRAMER, H. and STEINER, A.: (1931). Notes on the Hagedorn-Jensen Method for the Determination of Blood Sugar. Bioch. Jour. 25: 161.

The authors found that the Hagedorn–Jensen method for the determination of blood-sugar reveals sources of error which render it inadequate for accurate work.

The method does not yield true values, the equivalent of 20 to 30 mg. per 100 cc of sugar being derived from reducing substances other than sugar. At the same time the results are considerably lower than would be expected, owing—as Folin and Malmros have shown before—to a retention of from 4 to 22 mg. per 100 cc of fermentable sugar in the cotton plugs employed for filtration.

The table of Hagedorn and Jensen, given for the computation of sugar, leads to an additional error. In this table a definite correction for the self-reduction of the alkaline ferricyanide reagent is applied, implying the assumption that self-reduction is a constant value for every reagent. A correction value of general validity however, is impossible, as the self-reduction changes with time given in the same reagent.—*L. G. Hernández.*

GOLDBLATT, M. W. and ELLIS, R. W. B.: (1931). The Effect of Insulin on Growth, Nitrogen Excretion and Respiratory Metabolism. Bioch. Jour. 25: 221.

The authors conclude from their experiments that it appears justifiable to consider that, in the normal animal starving or consuming a diet containing nitrogen, there is no change in the excretion of nitrogen as a result of the injection of insulin. The effect of insulin therefore appears to be limited to the metabolism of fat or carbohydrate, or both.

The effect of insulin on peripheral oxidation is not one which, as far as the authors' evidence goes, can exert any profound influence on the general total metabolism, as was seen in the authors' growth experiments with rats. Nor in an increase in oxidative processes a necessary accompaniment of the fall in blood sugar which follows the injection of the hormone.—*L. G. Hernández.*

PINKERTON, HENRY: (1931). Typhus Fever. I. Comparative Studies of European and American Typhus in Laboratory Animals. J. Exp. Med. 54: 181.

Evidence is presented to indicate the essential identity of European epidemic typhus with the American endemic type. The production of a severe acute inflammation of the scrotal sac in laboratory

animals by the American strains does not constitute an important difference, since after intraperitoneal inoculation of the European strains Rickettsia-filled cells can also be found in the scrotal sacs and one European strain did cause a scrotal reaction of variable intensity.—*Richard Thompson.*

PINKERTON, HENRY: (1931). **Typhus Fever. II. Cytological Studies of the Scrotal Sac Exudate in Typhus Infected Guinea-pigs.** J. Exp. Med. **54**: 187.

In guinea-pigs inoculated intraperitoneally, infection with *Rickettsia prowazeki* is limited to the serosal cells in situ and the true capillary and lymphatic endothelial cells in situ. They occur in great numbers in the serosal cells but only very scantily in the endothelial cells. They are never seen in perivascular macrophages, connective tissue cells, fat cells, muscle fibers, or epithelial cells. They are rarely phagocyted by polymorphonuclears.

The absence, in sections, of extracellular organisms supports the position of *Rickettsia prowazeki* as an obligatory intracellular parasite. *Richard Thompson.*

PINKERTON, HENRY: (1931). **Typhus Fever. III. The Behavior of *Rickettsia prowazeki* in Tissue Culture.** J. Exp. Med. **54**: 307.

Extensive multiplication of typhus Rickettsia occurs in tissue cultures of scrotal exudates. Organisms are seen in cells undergoing mitotic division. The presence of organisms in cells which have grown away from the original fragments indicates that the new cells become infected after the culture is set out. The absence of Rickettsiae from macrophage corroborates the conclusion of the previous paper.

The organisms are more pleomorphic in tissue cultures than in vivo.—*Richard Thompson.*

TAYLOR, J. and GOYLE, ANAN N.: (1931). **Eijkman's Test applied to water supplies in the tropics.** Indian J. Med. Res. **18**: 1177.

Examination of soil samples in Rangoon and vicinity showed organisms fermenting glucose at 46° C. widely distributed, in sources not liable to intestinal pollution or even in specially protected sources.

Organisms giving a positive Eijkman's test have a prolonged period of survival in soil under the climatic conditions prevailing. These organisms are reduced in number in water more rapidly than

lactose fermenters. The presence of both types in equally small quantities of water would appear to be an indication of recency of pollution.

Tests of water samples from various sources have shown that Eijkman's test gives an indication of the sanitary quality of the water closely in correspondence with the known risks of pollution and of more definite value than the tests for lactose fermenters at 37° C for the character of the organisms isolated and tested by means of citrate utilization, MR or VP tests.

A. Surface waters and shallow wells: Eijkman's test to be negative in quantities of water less than 50 cc.

B. Tube wells: Eijkman's test to be negative in quantities of water less than 100 cc.—*Richard Thompson.*

OLITSKY, P. K., KNUTTI, R. E. and TYLER, J. R.: (1931). **Transmission and Cultivation Experiments with Human Trachoma and the Experimental Disease in Monkeys. J. Exp. Med. 54: 31.**

Pathogenic strains of *Bacterium Granulosis* were recovered from the trachomatous tissues of six of eleven patients and from monkeys with characteristic granular conjunctivitis produced by infection with human material. The disease has been transmitted from monkey to monkey by inoculation and by mere contact when caged together. Typical granular conjunctivitis was produced in monkeys by cultures of *Bacterium granulosis.* The conjunctival lesions closely resemble those of the follicular stages of trachoma in man.—*Richard Thompson.*

COSTA-MANDRY, O. G.: (1931). **Human Infestation with Fasciola Hepatica. Report of a case occurring in Porto Rico. Bol. Asoc. Méd. de P. R. 23: 186.**

In this article the author presents the study of a case of human infestation with Fasciola hepatica occurring in Porto Rico. A study is made of the literature of human infestation of this rare parasite in man both in Porto Rico and in other countries. The author calls attention to the great frequency of infestation with Distoma hepatica in cattle in Porto Rico, specially so in certain special areas. A history and physical examination of the case presented are given. The case was placed under treatment with enteric coated gentian violet pills but the results of treatment are not given. Later on a second case was met with acidentally in the routine examinations of fecal specimens performed at the Biological Laboratory of the Department of Health of Porto Rico. In

the paper, presented in the form of a very interesting table, are given the positive percentage of infestation with the more common intestinal parasites in Porto Rico, comprising 51,121 fecal examinations performed during a period of ten fiscal years on specimens sent from all over the Island to the Biological Laboratory.—*R. M. Suárez.*

DE SOUZA-ARAUJO, H. C.: (1931). Experimental Leprosy. Trans. of the Roy. Soc. of Trop. Med. & Hyg. 24: 577.

This very interesting research was carried out at the Instituto Oswaldo Cruz, Brazil.

In February, 1928, the author first attempted to transmit human leprosy to laboratory animals adopting *ab initio* the method advocated by Prof. John Reenstierna (1926), i. e., the use of fresh emulsion of lepromata for inoculating animals.

In the experiments with virulent material, 59 mice were inoculated; five were not examined, four were negative, and fifty showed acid-fast bacilli either in organs or fluids. Thirty-one out of these fifty-presented parasitic nodules, seven had tumors, and seven, small abscesses. One showed three cutaneous nodules, of which two manifested alopecia, while another mouse had hydronephrosis.

Twenty-five white rats were inoculated. Only eighteen were examined, and of these, six were negative and twelve (66.6 per cent) showed acid-fast bacilli. Two had nodules and two had minute abscesses. Of thirteen guinea-pigs inoculated only seven were autopsied. Six (85 per cent) showed acid-fast bacilli in the internal organs. Tumors, nodules or minute abscesses were not observed.

Three monkeys (*Macacus rhesus*) which had been previously used for investigations in yellow fever gave negative results to inoculation with 2 ccm. of leprosy material and the question is asked whether the immunization of these monkeys to yellow fever resulted in a state of refraction to leprosy. In the *Pseudocebus* both inoculation and reinoculation were positive, the monkey having become sensitized rather than immunized as a result of previous inoculation. One *M. rhesus* presented a cutaneous nodule on the forehead with slight alopecia. Scrapings from the skin nodules showed acid-fast bacilli, but the internal organs were of normal appearance and contained no bacilli.

Eleven mice were inoculated with material from other infected mice. Six of them gave negative results, two were positive in from forty to fifty-five days. One got a cutaneous nodule with alopecia on the back and two white nodules in the peritoneal cavity. Bacilli

were present in both kinds of nodules and in the liver. One white rat, injected with mouse-organ emulsion, acquired a cutaneous nodule at the site of inoculation, and showed many bacilli. Leprous material rendered avirulent by ethyl alcohol did not "infect" mice, while that treated by 10 per cent formol solution produced subcutaneous nodules far from the point of inoculation once in three injected animals. Those nodules (without alopecia) contained bacilli, as did also the liver and the kidneys. Material boiled for one hour was injected into five mice. They died or were killed twenty to ninety-four days later. All five showed acid-fast bacilli either isolated, in bundles or in globies. Two out of five presented peritoneal granules. Four guinea-pigs were also injected with boiled material. One was not examined, two were negative, and one which died on the seventeenth day showed only one mesenteric nodule containing organisms as seen in a pure culture.—*R. M. Suárez.*

BAKER, JOHN R.: (1931). **The Spermicidal Powers of Chemical Contraceptives.** Jour. of Hyg. 31: 189.

This is the second of a series of papers on an extensive investigation of chemical contraceptives, undertaken at the suggestion of the Birth Control Investigation Committee and financed by same.

The first paper dealt with the effects of commercial pessaries on guinea-pig sperms. An investigation of their effects on human sperms will form the third paper in this series. The present paper is concerned with chemically pure substances, free from any vehicle diluent or foam-producing mixture.

The author gives the technique used and results obtained with about thirty-six different chemicals, then he discusses osmosis and enumerates the characters that, in his opinion, the ideal chemical contraceptive should have.

It cannot be denied, he says, that research in chemical contraception has been haphazard and almost entirely chemical and clinical. The chemical manufacturers seem to have assumed that substances which are known to be good germicides must necessarily be good spermicides. This research has shown this assumption to be erroneous. It suffices to mention the high spermicidal and low germicidal power of sodium oleate.

1. Mercuric chloride and formaldehyde were found to be the most spermicidal substances. The killing concentration of each is 1/256 per cent.

2. Hexylresorcin kills at 1/64 per cent, soaps at 1/32 per cent.

3. Formaldehyde and hexylresorcin, among other substances, seem likely to be useful as contraceptives.

4. The significance of the high spermicidal power of soap is discussed.

5. Quinine bisulphate and chinosol, which are perhaps more commonly used as contraceptives than any other substances, only kill at ½ per cent.

6. Certain very poisonous substances have very slight spermicidal powers. This applies to potassium cyanide, prussic acid and strychnine hydrochloride.

7. Foaming mixtures, consisting of acids and sodium bicarbonate, could probably be used alone as contraceptives.

8. It is the hydrogen-ion and not the anions of acids that kill sperms.

9. The need for cooperation in research in chemical contraception is stressed.—*R. M. Suárez.*

HUNTER, DONALD: (1931). **Critical Review: The Metabolism of Calcium and Phosphorus and the Parathyroids in Health and Disease. Quart. Jour. of Med. 24: 393.**

In such a vast subject as the metabolism of calcium and phosphorus, the author gives an exhaustive review of the literature beginning with the normal metabolism of these salts going through the metabolism in disease including parathyroid tetany, osteitis fibrosa of von Recklinghausen, haematogenuos myelomatosis, thyroid disease, rickets (antenatal, renal and coeliac rickets), steatorrhoeas of adults, osteomalacia, hunger osteopathy, osteogenesis imperfecta, etc., and closing with an interesting summary of the use of calcium salts in therapeutics.

A survey of the results of calcium administration in disease at once shows that, as a therapeutic agent, it has proved disappointing. The constant supply of calcium in the food and the large available store in the bones make it unlikely that the regulating mechanism ever lacks calcium for distribution throughout the body. It is when the function of some part of this mechanism breaks down that the tissues suffer from calcium deficiency. It therefore follows that the use of cod-liver oil, ultra-violet light, irradiated ergosterol, parathyroid or thyroid extract is often of greater value than the direct administration of calcium salts.

Need for a diet adequate in calcium.—It has been calculated that the diet of the Finns contains between 2 and 6 gms. CaO daily

whereas the equivalent figure for the average diet in the United States is only 0.45 gm. Sherman regards this figure with some alarm, since he considers that 1 gm. a day is really required.

A high calcium diet of adequate vitamin content is required by pregnant and lactating women to allow for the drain of calcium into the foetus, and especially through the mother's milk. Owing to the great loss of calcium from the skeleton in exophthalmic goitre, attention should be paid to the mineral content of the diet in this disease.

Tetany.—Since we know that the maximal rise in serum calcium after a dose of 10 gms. is only 14 per cent, in post-operative tetany calcium lactate should be given in doses up to 10 to 30 gms. daily. More severe cases require parathyroid extract in addition to calcium salts. The onset of laryngeal spasm, bronchial spasm, or convulsions demands intravenous therapy.

Cameron recommends the intramuscular injection of 1 grain of calcium chloride in infants with laryngismus. In the tetany of rickets or osteomalacia the use of parathyroid extract is contraindicated, since the increased serum calcium is brought about by the removal of calcium from the bones, which are already deficient in it.

Lead-poisoning.—In the prevention of industrial lead-poisoning a diet of high calcium content plays its part, as it has been shown that calcium assists the storage of lead in a harmless form in the bones.

The toxic episodes—lead colic, lead palsy and meningo-encephalopathy are urgent indications for calcium therapy and the administration of large quantities of milk. After the acute toxic symptoms have passed, elimination of lead may be accelerated by the use of a low calcium diet together with ammonium chloride. This acidosis method of lead elimination is so potent that its use during colic or meningo-encephalopathy might prove fatal.

Colic.—The antispasmodic action of calcium on involuntary muscle helps to explain, also, the rapid relief of colic following the slow intravenous injection of 5 cc. of a 5 per cent solution of calcium chloride.

By the same method Aub has brought about prompt relief from renal and gall-stone colic. An additional advantage of this method is that a differential diagnosis between pain of renal colic and appendicitis can be made, the former being relieved promptly, the latter persisting.

Acute Necroses of the liver.—Experimental evidence obtained in dogs which have been poisoned with carbon tetrachloride and clinical evidence obtained in a small number of women suffering from eclamp-

sia who had prompt symptomatic relief following intravenous injection of 10 cc. of a 10 per cent solution of calcium salts against liver poisons is worthy of further investigation.

In spite of some enthusiastic reports as to the value of calcium therapy in *Erythema pernio, urticaria, asthma and chronic ulceration*, they fail to carry conviction as most of those observations had been made without controls.

Milk fever of cows.—The essential clinical feature of this disease, known also as "parturient paralysis" is tetany. The hypocalcaemia is caused in all probability by the calcium drain by lactation. It may be successfully treated by intravenous and subcutaneous injections of calcium gluconate.—*R. M. Suárez.*

MACKAY, W.: (1931). The Blood Platelet. Its Clinical Significance. Quart. Jour. of Med. **24**: 285.

In this paper the author gives not only very interesting data based on personal observation of 820 platelet counts, but also an extensive literature in a bibliography covering 226 scientific papers on the subject.

The solutions and apparatus used and the technique followed in making the platelet count, in estimating the coagulation time, clot retraction, bleeding time and capillary resistance are given.

It is now universally accepted that the platelet is a constant performed element in normal healthy blood of all mammals. In number they fluctuate independently of the red and white cells and the average normal diameter was found to vary between two and three microns. Prevailing opinion favors the conception of the platelet as a non-nucleated element. The author's observations support the idea that the nucleated appearance assumed by many platelets appeared to be due to the aggregation of the granules within the cytoplasm to form a rather dense mass. Nothing resembling a nuclear membrane was seen and mitosis was never observed.

After discussing the literature on the origin of the platelet, he closes with the following paragraph: "From the foregoing considerations it will be evidenced that the platelet does not arise from the erythrocyte or leucocyte. There is good evidence that it has its origin from the megakaryocyte, while that is so, it can not be claimed that the problem is solved beyond question. The fact that most of the evidence is based on morphological and tinctorial observations is unsatisfactory, and as a result there is uncertainty on the part of some investigators who, while they guardedly support the mega-

karyocytic origin, do not seem to be convinced that it is the sole mechanism of platelet genesis. However, it would seem reasonable to conclude that, in the adult, the platelet, under normal conditions, has its independent origin in the bone-marrow, and further, not unreasonable to assume that in times of stress it may arise from other tissues which are potentially hemopoietic.

As a result of counting platelets in six healthy subjects he found that the number varied not only with the individual but also in the same individual on the same end, on different dates, from 250,000 to 450,000 per cmm.

The platelets were diminished in acute myeloblastic leukemia, splenic anemia, malignant endocarditis, pernicious anemia (relapse), acute tonsillitis, lobar pneumonia (precritical stage) and pyemia. They were normal or only slightly diminished in Henoch-Schölein purpura and static purpura, in scurvy, hemophilia, acholuric jaundice, diabetes mellitus, pelvic sepsis, and hyperthyroidism, while in chronic myeloid leukemia, pernicious anemia (remission), secondary (post-hemorrhagic) anemias, lobar pneumonia (convalescence), acute rheumatism, nephritis, malignant disease, and chronic forms of tuberculosis the platelets were normal or increased in number. In purpura hemorrhagica and polycythemia vera they were found in some cases to be diminished and in others to be increased.

According to the author's views clot retraction or syneresis depends on (*a*) the blood plasma and (*b*) the blood-platelets. Of these the former is the more important, the platelet is of secondary importance and serves to augment the retractile property of the plasma.

As to capillary hemorrhage, he says that in view of the evidence, clinical and experimental, that bleeding time may be prolonged when the platelets are normal or increased in number, or that it may vary within healthy limits in the presence of thrombocytopenia, it seems that the all-important factor in controlling capillary hemorrhage is not the number of blood-platelets but the ability of the capillary vessels to contract. He thinks that the thrombocytopenia so often associated with purpuric hemorrhage is merely a coincident phenomenon, and that therefore purpura hemorrhagica is due to the defect in the capillary walls.

The abnormalities in size, granulation, and staining reaction of the platelets described by others as peculiar to purpura hemorrhagica have been found in the blood in other pathological states.

The effect of X-rays on the platelet count varies with the patient, and disease, and the dosage given.

Phenylhydrazined hydrochloride produces an increase in the num-

ber of platelets which is merely an expression of hemopoietic activity.

Splenectomy is followed by an increase in the platelet count.

Increase in the number of platelets does not induce thrombosis.

The capillary resistance test is of doubtful value.

As to the possible relation between anaphylaxis and blood-platelets, he concludes that neither brisk agglutination nor destruction of platelets with liberation of toxic substances produces anaphylaxis. It is likely that agglutination of platelets is not the cause but merely the effect of the state of anaphylaxis.—*R. M. Suárez.*

FAIRLY, N. HAMILTON: (1931). Serological and Intradermal Tests in Filariasis. Trans. Roy. Soc. of Trop. Med. & Hyg. 24: 635.

As antigen the author used desiccated material of *Dirofilaria immitis* sent to Dr. Carmichael Low by Dr. Le Sueur, of Sarawak, Borneo.

We will only give the summary and conclusions of this very interesting research:

1. A new complement-fixation reaction is described for the diagnosis of filarial disease using an alcohol-soluble extract of *Dirofilaria immitis* as antigen.

2. The intradermal reaction for *Wuchereria bancrofti* recently described by Taliaferro and Hoffman is confirmed, and extended to the diagnosis of *Loa loa* and *Onchocerca volvulus* infestations.

3. Both are essentially group reactions, the scope of which probably includes all the filarioid species of the family Filarudae, and possibly of Fruelleborbmudae, as well.

4. The clinical and theoretical aspects of the combined reactions, afford an entirely new and valuable mode of approach to the clinical study of filariasis, and are discussed in detail.

5. It is suggested that Calabar swelling results from a local anaphylactic reaction involving the cells of the subcutaneous layer as a result of the deposition *in situ* of proteid products by *Loa loa*. The dermic layer does not appear to be involved in this reaction in which urticaria plays no essential part.

6. In those exceptional cases where local urticaria occurs in the vicinity of a Calabar swelling it probably results from involvement of the dermal layer by diffusion of antigen deposited in the subcutaneous tissues by the adult worm.

7. Widespread urticaria and anaphylaxis, on the other hand,

appear to result from a more generalized intracellular reaction to *Loa loa* antigen in the absence of protective circulating antibody. Here the dermal layer is definitely implicated.—*R. M. Suárez.*

MOSCHCOWITZ, E.: (1931). **The Relation of Achlorhydria to Pernicious Anemia. Arch. Int. Med., 48: 171.**

The gastro-intestinal clinic of Mount Sinai Hospital of New York found achlorhydria in 0.21 per cent of 2,348 cases, after excluding cases of pernicious anemia, gastric carcinoma, etc. In the Mayo Clinic, Connor found 14.2 per cent of 5,000 cases, exclusive of pernicious anemia, with achlorhydria. Of 154 blood relatives of persons with pernicious anemia, the gross percentage of those with achlorhydria was 25.9 per cent. Therefore, there seems to be a familial tendency toward pernicious anemia. On the other hand, pernicious anemia is not a congenital disease. It is practically unknown in the first decade and extremely rare in the second.

Bothriocephalus anemia is found in only 1 per cent of cases of infestation in Finland where such infestation is extremely common. When the anemia occurs, however, it is indistinguishable from that of pernicious anemia. Schaumann showed that the constitutional element is as manifest in Bothriocephalus anemia as in cryptogenetic pernicious anemia. In fact, the author seems to feel that helminthic infestations are apt to be associated with the cryptogenetic tendency in the individual toward pernicious anemia and that they are not capable of causing this blood condition. He includes uncinariasis in this general appreciation. Achlorhydria occurs frequently in anemias of secondary type. In 207 cases of achlorhydria, Faber found pernicious anemia in 22 and in 52 a simple chlorotic anemia. The frequency of artificial achlorhydria through gastric surgery cannot be yet estimated for lack of data but such as there is it seems probable. The writer favors the idea that many cases of anemia of pernicious type in pregnancy are merely a chance association of two common ailments.—*B. K. Ashford.*

LORANDO, W.: (1928). **Traitement des teignes du cuir chevelu. Trans. Congres de Médécine Tropicale et d'Hygiene held in Cairo, Egypt, December 1928. 2: 663.**

Of the 18,000 orphans repatriated from Asia Minor in 1922, five thousand were treated for ring-worm of the scalp in Greece. Previous unskillful use of X-ray therapy had produced severe burns and permanent cicatrices. He found that 90 per cent of the cases

of ring-worm were due to *Microsporon*, 7 per cent to *Trichophyton tonsurans*, and 3 per cent to *Achorion Schönleini*. Eventually, by careful use of X-rays with a modification of Kiemback's formula, he was able to liberate these children of their dermatophytes.

ESCHER, D. N.: (1928). Contribution a l'étude du traitement des teignes par l'acetate du thallium. Trans. Congres de Médécine Tropicale et d' Hygiene held in Cairo, Egypt, December 1928. 2: 671.

Although the pharmacology of thallium has been studied since 1861, the alopecic properties of thallium were first realized by Sabouraud in 1897. As he had cases of intoxication by the drug he devised his now famous epilation by X-ray in substitution thereof. In 1900 Buschke and his pupils began a series of scientific observations of the effect of the drug on animals which have been continued up to the present. In 1917, Cicero, of Mexico, in a separate school for children suffering from ring-worm, turned to thallium for a cure as the radiologic plant was crippled in its efficiency on account of the world war. He used the protoxide of thallium on account of its great stability under varying conditions of light, heat and humidity, employing 5 mgms. per kilo of weight for children under four years of age and 7 mgms. for those over four, given always in one dose. Great success was obtained by this treatment in 354 children and the number was swelled by Uruena of Mexico by 200 more cases. The total number of cases treated by thallium to date amount to more than 2,000.

All authors are unanimous in stating that the effect of the drug is not upon the hair follicle but on the sympathetic nervous system. Buschke states that only hairs innervated directly by the sympathetic nervous system are affected. The internal portion and the eyelashes are not affected. There may be intervention of the glands of internal secretion also, as Buschke has observed in his experimental animals atrophy of the thyroid, suprarenals and testes. The majority of authors also limit the use of thallium to children between one and fourteen years of age. Beyond that age, the patient is more apt to present intoxications and the alopecic effect is less consistent. Italian authors have thought that the toxicity which develops with age depends on the atrophy of the thymus at puberty. Kerr and Goodale removed the thymus in one of two dogs of the same age and weight which subsequently received the same dose. This dog had a fatal intoxication while the control dog had no symptoms from thallium.

Treatment by thallium is the method of selection for children under four years and for mental degenerates, such as cretins, choreic-atherotoid subjects and for all those children who will not remain quiet long enough to apply the X-ray treatment. The optimum dose is from 8 to 8.5 mgms. per kilo of weight. In no case has any serious intoxication occurred when a dose between 7 and 9 mgms. has been employed.

The method of the author has been as follows: (1) The child is weighed and the dose carefully weighed accordingly; (2) Acetate of thallium is now dissolved in an aromatic syrup and administered. It is preferable to use graduated tablets from a reliable pharmaceutical house in doses of 0.1, 0.01 and 0.001 mgms. The dose should never be repeated under two months as its action is cumulative. The hair begins to fall on the seventh day and alopecia is complete about the sixteenth to the eighteenth day. It will be necessary to comb or brush out the hair as it will not ordinarily fall by itself. In fact, it would be better to strap the scalp with adhesive plaster in order to bring away, some hours later, any stumps of diseased hairs. The new growth of hair takes place very rapidly, generally on the third or fourth week after exhibition of the drug. In order that these new hairs be not infected, the author disinfects the scalp daily with a one or two per cent solution of iodine and then applies a sulphur ointment, 10 per cent, in the evening.

The signs of intoxication consist in myalgia and neuralgia. There may be even polyneuritis in excessive dosage with pallor, abdominal pain, achylia gastrica, and vomiting with general collapse. Most intoxications are due to impurities in the thallium employed. Contraindications to the use of thallium are nephritis, anemia and cachexia. Admitting the value of X-ray therapy, it is evident that generally it is in countries where expert use of these expensive apparatus cannot be obtained that ring-worm of the scalp of children is most common.

The author treated 40 cases with thallium, with 37 cures and 3 relapses; i. e., 92.5 per cent of success. Nine cases were in infants under five years and all were cured without any signs of intoxications. Thirty-one were in children between five and eleven years. In one case, there were slight articular pains and albuminuria which lasted fifteen days. Two cases showed slight albuminuria below 0.50 g. and yet no casts. In two more, blepharitis supervened but it was promptly cured under treatment. It is always necessary to prepare the thallium solution freshly and not to use any solution over 12 hours old.—*B. K. Ashford.*

KELLY, R. L.: (1931). The treatment of ring-worm of the scalp with thallium acetate. Southern Med. Jour., 24: 790.

He attributes to Buschke's experiments on animals throughout a period of twenty years the fixing of a safe dose for children, i. e., 8 mgms. per kilo of body weight. Dixon of England proved that thallium is an excitant of the sympathetic nervous system. He finds that the action of thallium is upon the cells stationed along the course of the sympathetic nerves and not on the nerves themselves. Thallium acetate is reported to have caused endocrine insufficiency, inflammation of the gastro-intestinal tract, hemorrhages of the liver, acute tubulonephritis, rachitic changes in the bones, high serum calcium, cataract, and congestion of the lungs, brain and meninges.

The author treated 46 patients throughout four years, in institutions. The ages of these patients lay between three and ten years. Because the drug becomes more toxic as puberty approaches, he employs the following dosage: Between three and six years, 9 mgms. per kilo of body weight; from six to ten years, 8 mgms. The only patient over ten was one of twelve years who complained of muscular and joint pains on the fifth day. This was the only patient presenting toxic symptoms but two others had asthma on the evening of the ninth day, whose relation to the drug was problematic. In some the hair began to loosen on the ninth day but in the majority this happened on the fifteenth to the nineteenth day. Epilation was complete on the twenty-second day. There were four failures or 92 per cent cures. Thallium should not be used in patients over eleven years of age.—*B. K. Ashford.*

UNGLEY, C. C.: (1931). Effect of brain in pernicious anemia. Lancet, 221: 63.

The beneficial effect of liver on the nervous system is a specific phenomenon and there is no evidence that refined commercial extracts will produce similar neurological benefit. The lesions in the nervous system are probably the result of a conditional deficiency, just as the anemia is one of the pack of a substance producing red cell regeneration. Histological changes in the cord very similar to those in the subacute combined degeneration of pernicious anemia may occur in pellagra, lathyrism, ergotism, beriberi, and possibly sprue (positively in one section of the cord in sprue, found by Pappenheimer of Columbia University—the abstractor).

Whole bullock or sheep's brains, one-half to one pound, was fed daily raw in a purée with orange juice, ginger ale, or as a broth or

jelly, to four cases of pernicious anemia and three of simple achlorhydric anemia. The average time it was administered was about two weeks; not longer, on account of vomiting and diarrhea provoked. The reticulocyte response evoked amounted to about one-third that following the administration of ox liver. In general, the cord lesions seemed to be favorably affected.—*B. K. Ashford.*

DAVIES, D. T.: (1931). Simple achlorhydric anemia. Lancet, 221: 385.

Simple achlorhydric anemia is defined as "that form of chronic and simple anemia found in middle-aged women, accompanied by achlorhydria". The duration of the anemia is usually of many years, commonly from five to ten. The additional gastro-intestinal symptoms may also be of equal duration or longer. The hemoglobin is much reduced than the red cells. The alimentary symptoms are present almost without exception. Discomfort and fullness after food, a poor appetite, flatulence and anorexia. Discomfort is greatest after meat and least after carbohydrates; hence, the diet becomes one of bread, potatoes, milk, puddings and tea. The most of such patients "have not touched meat for years". Visceroptosis is common. The patient is sallow and yellowish. He is often underweight and "the wrinkles, and folds of inelastic skin contrast with the rotund appearance in pernicious anemia". There is a well-marked atrophic condition of the tongue. The more severe the anemia, "the more angry and red does the bald tongue appear", but a sore tongue is rarely suggested by the patient. This atrophy occurred in 50 of his 55 cases and is more common than in pernicious anemia. The nails are brittle, flat, and tend to split longitudinally; sometimes they are spoon-shaped (koilonychia). The spleen is often palpable but not much enlarged. The anemia is more obvious during and after pregnancy. Menstrual irregularities are also often present.

The blood changes: The hemoglobin is much reduced when the red cells hover around normal. The average color-index of the author's cases was 52 per cent; the average red cell count 3.9 million. Some cases show microcytosis, some normal cell diameters, and a few may present a macrocytosis, an intermediary type approaching pernicious anemia. There is no evidence of increased hemolysis as the serum bilirubin is always low. Hence, there is a hemoglobin deficiency not due either to blood loss or excessive hemolysis or yet to marrow changes.

The gastric secretion: This shows a rapid emptying rate and an increased viscosity. These two conditions together with absence of

hydrochloric (free) acid form a characteristic syndrome. Of his 55 cases, 24 were the subject of gastric analysis, using histamin. Sixteen of these were found not completely incapable of secreting hydrochloric acid but they secreted it only after stimulation, while eight failed to secrete it even with stimulation. Pepsin was demonstrated in 19 of 25 patients but in no case was a normal amount (250 to 500 units) found, the average being only 70 units. Six showed neither pepsin nor acid, a true achylia.

The clinical features of simple achlorhydric anemia suggest a nutritional disorder. The disease is always chronic, it is amenable to iron therapy, it is not materially affected by stomach or liver extract. The most outstanding contributory factor in causation is the lack of ingestion of meat and green vegetables. The diet preceding and accompanying these anemias is mainly composed of concentrated starchy foods. Such a diet is analogous to that of tropical countries. It is justifiable to conclude that the iron intake is poor and is liable to result in iron deficiency. Moreover, the absorption of iron is reduced in absence of hydrochloric acid and in the case of a rapid emptying of the stomach. These anemias often occur after operations on the stomach. The Plummer-Vinson syndrome, which is the above clinical picture plus dysphagia, is considered to be an allied condition. So long as the stomach secretes pepsin and hydrochloric acid, even though irregularly and in insufficient amounts, there is no absence of the substance stimulating red cell production; hence, there is no pernicious anemia. But continued iron starvation causes iron deficiency and a reduction in the production of hemoglobin. Intermediate types between secondary and primary anemia can be placed in evidence.

Treatment: From 60 to 80 grains of ferri et ammon. citrat. daily for from 6 to 12 weeks brings a decided rise in hemoglobin as striking as the increased blood values in pernicious anemia with liver extract. A maintenance dose with 10 grains three times a day in indicated.

(This article should be of poignant interest to those of us who practise medicine in the tropics, for it embodies practically all which the abstractor has been emphasizing for years under the name of the "sydrome of nutritional unbalance of Porto Rico", save that the spleen is not enlarged, the disease is by no means limited to women of middle age, and diarrhea often alternates with constipation.)—*B. K. Ashford.*