

ABSTRACTS OF CURRENT LITERATURE

SWELLENGREBEL, N. H.: On the influence of the wind in the spread of *Anopheles maculipennis*. Amer. Jour. Hyg. (1929) 10: (2) 419-432.

Medemblik, Holland, surrounded by sea on three sides seemed a favorable location for anopheline anti-larval measures. These were carried out throughout a 3 km. radius. They failed to result in an anopheline density less than one third that of adjacent areas. Experiments with stained female mosquitoes released from points within the untreated area showed that when the wind came from the land (from more or less the same direction as the release points) a much greater proportion of stained mosquitoes would be recaptured than when the wind was variable or came from the sea. In certain natural shelters where the anopheline population fluctuated constantly, more mosquitoes could be found there after a "land wind" than subsequent to a "sea wind". Wind then is a greater factor in the dispersal of mosquitoes than had heretofore been supposed to be the case.—W. A. Hoffman.

GOLDIE, HORATIO: Zur Pathologie und Therapie der Chronischen Bilharziosis. (The pathology and therapy of chronic schistosomiasis). Arch Schiffs- u. Tropen-Hyg (1929) 33: (4) 198-210.

The author treated many young men with typical acute schistosomiasis, previously diagnosed as gonorrhoea. Classic symptoms, including those of cystitis were observed, and a history of contact with infected waters was obtained. Urine examinations usually disclosed *Schistosoma haematobium* ova, always albumen and cellular exudates. Tartar emetic treatment cured all cases.

In Tiberias where no mollusc hosts occur, chronic bilharziosis was encountered among a number of individuals, chiefly women, all of whom had emigrated from an endemic area in the Tigris Valley two to ten years previously. The activities of the males in that section seldom brought them into contact with infected water. Though infections were of long duration, symptoms as a rule were obscure, anemia, weakness, menstrual disturbances, abdominal pains, and pulmonary affection being associated with the disease. Two cases of pneumonia were attributed to schistosome invasion. In the urine, ova could be demonstrated only infrequently, the same being true

of ova with pus cells, while cellular elements were usually rare or absent.

Members of the second group could not tolerate tartar emetic. Intramuscular injections of Antimosan proved a satisfactory means of treatment.—*W. A. Hoffman.*

HUFF, CLAY G.: Ovulation requirements of *Culex pipiens*. Biol. Bul. (1929) 56: (5) 347-50.

Quite contrary to the prevalent belief that biting mosquitoes need blood for ovulation, Huff has shown that adults of this species fed on raisins and haemoglobin, haemoglobin solution, egg yolk, ox blood serum, ox gall, blood peptone, potato juice, carrot juice, apple juice, and cell broth all produced viable ova. Adults from larvae raised in haemoglobin solution, when fed on milk or soaked raisins, produced eggs which gave rise to vigorous larvae. Larvae grown in the usual laboratory manner, that is, upon bacteria and yeast, never produced adults, which when kept upon a diet of milk and raisins were capable of laying eggs. One female oviposited normal eggs from which healthy larvae hatched, without having ingested any food.—*W. A. Hoffman.*

RAYNAL, JEAN: Aberrant localizations of schistosomes in man. (Paris correspondent's account of a lecture). Jour. Am. Med. Asso. (1929) 91: (15) 1157-8.

While it is generally recognized that *Schistosoma mansoni* causes rectal schistosomiasis, and *S. haematobium* vesical schistosomiasis, exceptions to these trends exist. They are summarized in the following manner:

- A. Carriers of *S. Haematobium* Ova in the Stools:
 - 1. Ova of *S. haematobium* only present in the stools.
 - 2. Ova of both species present in the stools.
 - 3. Ova of *S. haematobium* in the stool and urine.
- B. Carriers of *S. Mansoni* Ova in the Urine:
 - 1. Ova of *S. mansoni* only in the urine.
 - 2. Ova of both species in urine.
 - 3. Ova of *S. mansoni* in both sites.
- C. Ova of *S. Mansoni* in the Urine and Ova of *S. Haematobium* in the Stools.

In addition there are on record two cases where the two parasites occur simultaneously in both regions.

(The abstractor has occasionally been informed of cases in which

schistosome ova were recovered from the urine. Since only *S. mansoni* is known to occur endemically in the Western Hemisphere, a condition such as that represented by B1 or B3 doubtless obtained).—*W. A. Hoffman.*

MACGREGOR, M. E. and LEE C. U.: Preliminary note on the artificial feeding of mosquitoes. *Trans. Roy. Soc. Trop. Med. and Hyg.* (1929) 23: (2) 203-4.

The writers were at first unsuccessful in inducing mosquitoes to ingest citrated malarial blood, finally they did so with three species, through the addition of honey. Both sexes fed. However when a mosquito feeds normally, the blood flows directly into the stomach, whereas the mixture passes into the oesophageal diverticula. The addition of honey apparently exerts no deleterious effect upon the blood cells. It may now be possible to attack unsolved problems relating to the cycle of malarial parasites in the mosquito.—*W. A. Hoffman.*

THE BERGEIM TEST FOR INTESTINAL PUTREFACTION

HOELZEL, FREDERICK: *Jour. Biol. Chem.* 83: (2) 331.

The reduction of ferric oxide in digestive tract depends not only on the degree of intestinal putrefaction but also upon the food given. Certain foods independently reduce the ferric oxide. The test is not specific and high reduction figures are obtainable independent of any putrefaction.—*D. H. Cook.*

BIOCHEMICAL FINDINGS IN A RARE CASE OF ACUTE YELLOW ATROPHY OF THE LIVER

RABINOWITCH, I. M.: *Jour. Biol. Chem.* 83: (2) 333.

The very dilute urine and the anatomical changes found in the kidney, fit in with practically complete suppression of urinary function. In spite of this there was no urea in the blood. This accords with other workers who have removed the livers of animals, and kidneys as well. The resulting anuria did not lead to accumulation of urea in the blood. The findings in this rare case of acute yellow atrophy, therefore, support the view that urea is formed exclusively in the liver.—*D. H. Cook.*

THE EFFECT OF AVITAMINOSIS ON HEMATOPOIETIC FUNCTION

SURE, BARNETT; KIRK, M. C.; WALKER, DOROTHY J.; Jour. Biol. Chem. 82: (2) 375.

I. Vitamin A. Deficiency.

After vitamin A deficiency has progressed to the ophthalmic stage inanition complicates the blood picture, so that the high figures of hemoglobin and erythrocytes may be an expression of anhydremia, indicated by the concentration of total blood solids of the pathological animals of the same age and weight. In the preophthalmic stage there is a suggestion of an anemia characterized by reduction in either hemoglobin or erythrocytes. The results, however, are not conclusive and this phase of the problem is being studied further.

II. Vitamin B. Deficiency.

A deficiency of the vitamin B. complex produces the following pathological symptoms:

1. Reduction in the concentration of serum proteins when accompanied by heavy losses in weight.
2. Disturbance in hematopoietic function as evidenced by fluctuation in concentration of erythrocytes and hemoglobin. During the early stages of the avitaminosis there is a small reduction in the concentration of hemoglobin and red blood corpuscles, and during the final stages of the disease there is a marked rise in both of these constituents. This rise is associated with marked anhydremia produced by pronounced inanition.
3. When loss of body weight is circumvented and prolonged maintenance produced by feeding suboptimum amounts of vitamin B and G in the form of yeast concentrates, loss of water from the blood serum, or anhydemia, becomes apparent.
4. There is a slight edema of the tissues in polyneuritis to the extent of about 6.5 percent.
5. The avitaminosis has no specific effect on the total leucocyte count.
6. Uncomplicated vitamin B deficiency also produces disturbance in hematopoietic function associated with anhydremia, the latter pathological condition being only apparent during stages of prolonged maintenance.
7. Mothers whose young are developing uncomplicated vitamin B deficiency because of suboptimum amounts of vitamin B for normal lactation, show no change in the concentration of hemoglobin, slight reduction in the concentration of erythrocytes, but a notable reduction in the concentration of serum proteins.

III. Vitamin E. Deficiency.

1. Vitamin E has no influence on hematopoietic function of

females suffering from such avitaminosis during the period of resorption of the fetus.

2. Neither ferric citrate, nor the ash of lettuce leaves were found effectual in the prevention of female sterility produced by Vitamin E. deficiency.—*D. H. Cook.*

GORDON, J.; STANSFIELD, F. R.; Lecithin and Streptococcal Hemolysin. *Biol. Jour. of Exp. Path.* 10: (3) 191.

Authors study action of lipid substances on cultures of hemolytic streptococci.

Lecithin added to cultures of hemolytic streptococci neutralize the hemolytic activity—treatment of similar cultures with ligroin does not remove or destroy hemolysin. The hemolytic activity of these cultures can not be restored by treatment with a lecithin solvent (ligroin) after it has once been destroyed by the addition of lecithin.—*P. Morales Otero.*

SCHUTEZE, H. and HASSANEIN, M. A.: The oxygen requirement of *B. Pestis* and *Pausterella* Strains. *Biol. Jour. of Exp. Path.*, 10: (3) 204.

The authors have had difficulty in initiating the growth of plague and pausterella cells lying widely scattered on agar plates. They interpret this factor as due to the oxygen sensitiveness of those organisms.

This difficulty can be overcome by the addition to the culture medium of such substances as blood, sodium sulphite or sterilized broth culture of a variety of Bacteria or by placing the plates under anaerobic conditions.

The authors suggest that the substances just mentioned act as reducing agents and that the substances contained in broth cultures of this particular bacteria are enzymic in nature as they are rapidly destroyed under anaerobic conditions between 70°C and 80°C.—*P. Morales Otero.*

FLEMING, A.: On the anti-bacterial action of cultures of a *Penicillium* with special reference to their use in the isolation of *B. Influenzae*. *Biol. Jour. of Exp. Path.*, 10: (3) 226.

A certain type of *penicillium* produce in culture a powerful antibacterial substance. The antibacterial power of the culture reaches its maximum in about seven days at 20°C. and after ten days diminishes until it has almost disappeared in four weeks.

The best medium found for the production of the antibacterial substance has been ordinary nutrient broth.

The active agent is readily filterable and the name "penicillin" has been given to filtrates of broth cultures of the mould.

Penicillin loses most of its power after ten to fourteen days at room temperature but can be preserved longer by neutralization.

The active agent is not destroyed by boiling for a few minutes but in alkaline solution boiling for one hour markedly reduces the power. Autoclaving for twenty minutes at 115°C. practically destroys it. It is soluble in alcohol but insoluble in ether or chloroform.

The author states its action is very marked on the pyogenic cocci and the diphtheria group of bacilli. Many bacteria are quite insensitive, e. g. the coli-typhoid group, the influenza-bacillus group, and the enterococcus.

Penicillin is non-toxic to animals in enormous doses and is non-irritant. It does not interfere with leucocytic function to a greater degree than does ordinary broth.

It is suggested that it may be an efficient antiseptic for application to, or injection into, areas infected with penicillin-sensitive microbes.

The use of penicillin on culture plates renders obvious many bacterial inhibitions which are not very evident in ordinary cultures.

Its value as an aid to the isolation of *B. influenza* is demonstrated.—*P. Morales Otero.*

NANAGAS, JUAN C.: Study on cranial capacity of Filipinos. *Phil. Jour. of Sc.* 38: (1) 117.

The author studies 458 crania of filipinos. The geographical distribution of these cases coincides in frequency with the degree of actual denseness of population in different regions of the Archipelago.

The maximum cranial capacity found for the male group was 1,655 c.c and the minimum 1,083. For the female group the maximum is 1,480 c.c. and the minimum 987.

Comparison is made of the cranial capacity obtained from the study with those of other races. It was found that in the Filipino it is relatively smaller, falling more or less in direct proportion to the difference in stature and general physique of the various races and nationalities.—*P. Morales Otero.*

PERKINS, R. G.: HEEREN, R. H.: MEGRAIL E. and GROSSMAN A. B. Seasonal Variation of Diphtheria Antitoxin content of the Blood of adults and adolescents. *Am. Jour. of Hyg.* 10: (1) 13.

School boys from eleven to fourteen years of age living in crowded districts are studied and compared to adults whose occupation brings them to similar exposure. The boys have a definite picture showing low diphtheria antitoxin values in late winter and spring. No evidence was found that the normal autumn rise in diphtheria incidence be related to the antitoxin content of the blood of these individuals. The drop in incidence of late summer, coincides with a general rise in antitoxin content in the series, but in view of the negative correlation at the time of increasing incidence the authors doubt whether the recorded observations are significant. They confirm Fitzgerald's work, finding adults with practically no antitoxin in the blood. The opinion that a fundamental factor in seasonal variation in diphtheria is the modification of the resistance of the individuals, at the actual portal of entry is stated.—*P. Morales Otero.*

MCCOY, R. O.: The suitability of various Bacteria as Food for Hookworm larvae. *Am. Jour. of Hyg.* 10: (1) 140.

Eggs of *Ankylostoma Caninum* free from feces and sterilized, hatched normally in agar cultures of various bacteria and the larvae grew to the infective stage. The larvae grew in twenty-two of the twenty-five cultures of bacteria tested. There were three species of bacteria and one of yeast in which the larvae failed to grow.

Larvae grew in saline suspensions of bacteria but failed to grow in their filtrates. They did not grow on suspensions of dead bacteria. In autoclaved fecal cultures very few larvae survived after ten days. while large numbers of larvae reached the infective stage in autoclaved cultures which were subsequently inoculated with Bacteria. Evidence is demonstrated to indicate that living bacteria constitute the essential food utilized by hookworm larvae in developing to the infective stage.—*P. Morales Otero.*

HAVENS, LEON C., and RIDWAY, C.: The pathogenicity of Morgan's bacillus (1929) *The Jour. of Pre. Med.* 3: 159.

The authors isolated Morgan's bacillus from the blood of five out of thirteen cases of a disease manifested clinically by sudden onset, usually with a chill, accompanied by nausea and vomiting, diarrhea

in some instances, headache, myalgia, and fever. The temperature which lasted invariably two weeks terminated promptly by crisis. Agglutinins for Morgan's bacillus were found in the blood of patients in fairly high dilution. Other organisms such as typhoid and the paratyphoid group did not agglutinate.—*E. Garrido Morales.*

GARRIDO MORALES, E.: Typhoid Fever in a Rural Village of Porto Rico due to a Surface Well (1929) *Am. Jour. of P. H.*, 19: 997.

The writer reports an outbreak of typhoid fever which developed in a rural village of Porto Rico following the San Felipe hurricane. Forty two cases developed among six hundred people living in the village or an attack rate of seventy per one thousand inhabitants. There were four deaths. Contaminated well water was the chief factor of causation and spread of the disease. The well was contaminated by a typhoid fever patient whose excreta was disposed of without desinfectant in a latrine located about six yards from the well.—*E. Garrido Morales.*

HERBERT L. LOMBARD: Septic Sore Throat in 1928 in Mass.: Epidemiology (1929) *Jour. of Pre. Med.* 3: 81.

An epidemic of septic sore throat in which between 925 and 975 cases and forty eight known deaths occurred is reported in a town with four thousand people in the state of Massachusetts. The epidemic was caused by hemolytic streptococci transmitted in raw milk. The incubation period averaged two days, and over ninety per cent of the cases developed in a period of two weeks. The milk was contaminated by the udder of one of the cows in the dairy farm of one of the milk distributors in the town.—*E. Garrido Morales.*

DACK G. M., JORDAN E. O., and W. L.: Food Poisoning produced in monkeys by feeding living *Salmonella* cultures. (1929) *The Jour. of Pre. Med.* 3: 153.

The authors report definite and characteristic symptoms of food poisoning in Rhesus monkeys fed with living cells of two strains of the *Salmonella* group. Monkeys fed with an equal portion of the same suspension killed by heating, showed no symptoms. Feeding with living cells of *B. proteus* and *B. coli* failed to produce noticeable symptoms.—*E. Garrido Morales.*

- WOOLF, BARNET: Some Enzymes in *B. coli communis* which act on Fumaric Acid. *Biochem. Jour.* 23: (3) 472.

The presence is demonstrated in *B. coli communis* of considerable quantities of fumance, the enzyme governing the equilibrium between fumaric acid and L-malic acid. In the absence of inhibitors, such as two per cent propyl alcohol, the action of the enzyme is masked by an irreversible process resulting in the anaerobic destruction of malic acid. In the presence of propyl alcohol the same equilibrium is attained as that given by animal fumarases.—*Luis G. Hernández.*

- AYKROYD, H. R. and ROSCOE, M. H.: The Distribution of Vitamin B₂ in Certain Foods. *Biochem. Jour.*, 23: (3) 483.

The method described by Chick and Roscoe (1928) has been used for estimating the Vitamin B₂ value of foodstuffs. The special features of this method are (a) elaborate purification of the caseinogen in the basal diet, and (b) the use of Peter's antineuritic concentrate as sources of Vitamin B₂.

The vitamin value of a substance was estimated by the minimum amount required to support normal increase in bodyweight (11-14 gms. per week) in young newly weaned rats receiving, apart from the test substance, a diet complete in all respects except in Vitamin B₂. For one week previous to the test, rats were maintained on a diet entirely free of both the B vitamins.

Control rats from each litter used, were fed on the basal diet, complete except for Vitamin B₂. All remained stationary in weight and the majority developed skin symptoms.

Some curative experiments on such rats suffering from dermatitis were carried out with materials containing Vitamin B₂. In these, amelioration of symptoms and resumption of growth were parallel.

The Vitamin B₂ value of wheat and maize is poor, that of maize being on the whole the lower in the samples examined. In wheat the germ and bran are better sources than the endosperm, and about equal to each other. In maize the germ is not so rich a source, but whole maize is better than maize endosperm.

Dried peas have a low Vitamin B₂ content.

Dried ox liver, yeast, and fresh whole milk are excellent sources of Vitamin B₂. Dried meat and egg yolk are less good but richer than cereals.

The relation of Vitamin B₂ to Goldberger's "P-P." factor and to the factor preventing black-tongue in dogs is discussed. It is

noted that so far the distribution of all three has been found to be identical.

Some problems in the epidemiology of pellagra are discussed on the assumption that Vitamin B₂ is identical with Goldberger's pellagra-preventive factor.—*Luis G. Hernández.*

CHICK, H. and ROSCOE, M. H.: A method for the Assay of Antineuritic Vitamin B₂, in which the growth of young rats is used as a criterion. *Biochem. Jour.*, 23: (3) 498.

Methods are described for assay of the antineuritic vitamin B₂, using growth of young rats as a criterion and basal diets in which the more heat-stable vitamin B₂ is supplied by fresh egg-white or by yeast autoclaved at 120° for five hours.

Fresh egg-white, while rich in vitamin B₂, is devoid of vitamin B₁. With autoclaved yeast there is a risk that traces of vitamin B₁ which have escaped destruction in the autoclave may be present. Nevertheless autoclaved yeast is to be preferred to egg-white for the reasons given below.

Diets otherwise complete, which contain egg-white and Peter's antineuritic concentrate as sources vitamin B₂ and B₁ respectively, are frequently found unable to maintain normal growth of rats beyond a few weeks after weaning. After this period growth is subnormal. It is suggested that a third hypothetical dietary factor may be present in the vitamin B complex, which factor is wheat-stable, present in autoclaved yeast and lacking in egg-white.

If the unit of vitamin B₁ be defined as the amount which will restore normal growth (weekly increase in weight of about 10–14 g.) in young rats whose growth has failed on a basal diet deficient only in this vitamin, assay of food stuff for content of vitamin B₁ would consist in the determination of the minimum dose necessary to restore this degree of growth.—*Luis G. Hernández.*

CHICK, H.: The effect on Vitamin B₂ of Treatment of Nitrous Acid. *Biochem. Jour.*, 23: (3) 514.

Levene's observation that the activity of vitamin B₂ is destroyed by the action of nitrous acid is not confirmed. A vitamin B₂ preparation from yeast was found to possess equal power after and before treatment to induce growth in young rats on a diet deprived of this vitamin.—*Luis G. Hernández.*

WILSON, R. M.: Industrial Therapy and Leprosy. *China Med. Jour.*, 43: (1) 12.

Plain chaulmoogra oil with one per cent camphor added, has given the best results and the least pain. The ethyl esters are not used on account of being too painful.

The patients are not left to be idle and are set to work in the fields, on structure of new buildings and, all kinds of jobs in the colony. Ninety per cent of all the jobs about the colony are done by them. This improves their health considerably and saves money for the colony.—*Luis G. Hernández.*

HARREL, C. L.: Blood-Serum Calcium in the Negro. A Laboratory Study. *Amer. Rev. Tuberculosis*, 19: (3) 350. *Bull. Hyg.*, 4: (7) 591.

The blood serum calcium was estimated in two groups of negroes. The first group, forty-four persons found free from physical signs or symptoms of tuberculosis, have an average of 10.93 mg. of calcium per 100 cc. of blood, a figure slightly higher than the accepted normal for white subjects which is 10.50 mg. In the second group, consisting of negroes either suspected of, or known to be suffering from tuberculosis, and including forty-one cases, the average blood serum calcium was 9.8 mg. Of the twenty-three "positive" cases, the average was still lower, 9.2 mg.

The author concludes that hypocalcemia is an effect of tuberculosis, not a causative factor. The high normal for negroes, Harrel attributes to hearty appetite and the consuming of food rich in calcium. When the appetite is lost or not improved as a result of disease, the calcium falls, owing partly at least, to a reduced intake.—*Luis G. Hernández.*

LEIGHTON, G. and CLARK, M. L.: Milk Consumption and the Growth of School Children. Secondary Report on Tests to the Scottish Board of Health. *Brit. Med. Jour.*, (1929) 1: (3549) 23; also *Lancet*, (1929) 216: (5497) 40; and *Bul. Hyg.*, 4: (6) 465.

The great value of milk when given as a supplementary ration to the ordinary diet of school children from working-class homes is demonstrated by the authors who, over a period of seven months examined the height and weight increases of 1,157 children. Investigations were carried out at seven centers, the children from each center being divided into four groups. The first group received whole milk, the second separated milk, the third a biscuit ration of

the calorie value of the separated milk while the fourth group acted as controls receiving nothing. Three age groups were involved, children of thirteen to fourteen years receiving one pint of milk per day, those of nine to ten receiving the same amount, while those of six and seven received three quarters of a pint per day.

Taking all the ages combined and dividing the children into the milk-fed and the non-milk fed groups, an average height increase of 23.5 per cent and an average weight increase of 45.37 per cent in favor of the milk-fed groups over the non-milk-fed groups was observed. Only slight differences between the groups fed on biscuits and the control were observed. The value of the separated milk was almost as great as that of the whole milk, the latter, however, giving somewhat better results in the group of six-year-old children.

It is considered that these results, which fully confirm those of other observers, in Scotland and abroad, must have a wide public health significance especially with the health of school children.—*Luis G. Hernández.*

DAVIES, I. J. and CAMPBELL ANDERSON, W.: *Brucella abortus* Infection in Man. *Brit. Med. Jour.*, (1929) 2: (3574) 12.

Another case can be added to the short list of infections so far reported as produced by *Brucella abortus* in man. Although the authors failed to obtain positive blood cultures, the history of the patient, the symptoms and course of the disease, and positive agglutination tests in dilutions of 1 in 1,000 would seem to warrant a positive diagnosis. The case was one of prolonged pyrexia of apparently unknown origin which lasted at least nine weeks. No other local source for the infection could be traced.—*A. L. Carrión.*

CRONIN LOWE, E.: Foci and Nature of Infection in 100 Cases of Rheumatic Conditions. *Brit. Med. Jour.*, (1929) 2: (3575) 43.

One hundred cases of varying degrees and types of rheumatic disorders were examined for evidence of focal and bacterial infection. In twenty-eight cases only one infective focus was determined, while in seventy-two cases more than one focus were apparently responsible for the infection. Foci at the post-nasal region and accessory sinuses were revealed to be of greatest importance among all. Then followed, in order, intestinal, tonsillar and dental foci. The streptococcus group was found to be markedly predominant, but practically

any other commonly present organisms would be important in an individual case. It is apparently possible to determine by the author's method (the pathogen selective culture method) which, or how many of various suspicious foci in any patient are infectious and which are not, and thereby radical or conservative treatment may be clearly indicated in any one case. The actual organisms present against which the patient has lost resistance and for which an adequate immunity should be developed is indicated, and makes possible the employment of rational and exact vaccine therapy.—*A. L. Carrión.*

KOLMER, J. A.: Toxin Production by Spirochaeta Pallida. Arch. Dermat. & Syph., 20: (2) 189.

In this article Kolmer reports an attempt to determine the production or poisonous substances by the Spirochaeta Pallida. He inoculated rabbits and guinea pigs with filtrates of cultures of this organism and with extracts from acutely infected tissue. Reference is made to some previous work done to determine the production of endotoxin by the same organism. He summarizes his results as follows:

1. Filterable or soluble exogenous toxins could not be demonstrated in cultures of spirochetes alleged to be Spirochaeta pallida but non-virulent for rabbits.
2. Exogenous toxins could not be demonstrated in filtrates of the tissues of acute testicular syphilis of rabbits.
3. Feebly toxic substances (endotoxins?) were obtained from cultures of spirochetes subjected to autolysis or to desiccation, grinding and extraction.—*A. L. Carrión.*

BOARDMAN, W. P.: Scleroderma, with Special Reference to Its Etiology and Treatment. Arch. Dermat. & Syph., 19: (6) 901.

The author presents an excellent review of the literature on the etiology and treatment of scleroderma. The influence of trauma, nervous and vascular disturbances, endocrine dysfunction, toxic conditions and infectious diseases are all considered. The results of the survey are summarized as follows:

Considering all these reports, one must admit that a large number of the cases follow infections or toxic conditions, and especially syphilis; that one or more of the endocrine glands are involved, especially the thyroid, in a noticeable proportion; that a disturbance

of the nervous system, sometimes the central, but more often the vegetative, is frequently present, either alone or as a result of toxemia or an infection, or results in a dysfunction of the thyroid or other endocrine glands. Sometimes the glandular disturbance is thus apparently due in turn to syphilis or other infections.—A. L. Carrión.

HELD, I. W. and GOLDBLOOM, A. A.: Pernicious Anemia. *Internal Clinics*, 39th series I; 179-218.

The term pernicious anemia is no longer justifiable. v. Schilling hyperchrome megaloblastic anemia. The authors prefer Addison-Biermer anemia.

Pathology: Megaloblasts appear in the intercapillary spaces of the liver; hence there is a return to embryonic conditions. Atrophy of the mucous membrane from mouth to cecum are usually found. Suacute combined sclerosis of the lateral columns or lesions in the posterior columns of the column are often encountered.

Etiology: Bacterial toxins do not cause the disease, but Herter considers, B. Welchii to play the leading role. Krumbhaar believes that intestinal noxa, which, because of the achylia are absorbed by the portal system, stimulate the spleen to excessive hemolysis and damage the functions of the bone-marrow. E. J. Wood believes A.—B. anemia due to Monilia psilosis the cause of sprue. Einhorn, Ewald and Boas have not found A.—B. anemia associated with acylia gastrica with sufficient frequency to deduce a causative relation. Avitaminosis does not seem to be the cause, as liver extract is vitamin-less. There is a group of deficiency diseases in which the vitamin intake is normal but their utilization is defective. In the case of A.—B. anemia. This latter may be due to some defective functioning of the liver and liver extract may bring about a proper utilization of the vitamins. Means and Richardson believe A.—B. anemia is a deficiency disease. While liver extract contains no known vitamins it may contain an unknown one. v. Schilling found an increased incidence of A.—B. anemia in Germany after the war and concludes that this was due to improper and insufficient quantities of food. Massao caused erythrocytosis in a dog injecting the stromata of 2 cc. of blood per kilogram of weight. He considers the stromata of red cells the cause of the red cell replacement. Eppinger believes A.—B. anemia due to excessive destruction of red cells in the spleen and therefore recommends splenectomy. The conclusion of the authors is, that constitutional inferiority in the intracapillaries of the liver and sometimes in the bone marrow

is the basis for any exciting factor. Symptomatology: Prodromal achylia gastrica and neurologic phenomena are not frequent. The debut of the disease is generally by a blood crisis. Pains in the abdomen and esophageal spasm are probably of cord origin as in tabes. Without achylia gastrica the diagnosis of A.—B. anemia is hardly justifiable. In combined sclerosis, striking the shins gently with a tuning fork brings spastic gait, increased knee reflexes, ankle clonus and positive Babinski, Gordon and Oppenheimer. When lesions are confined to the posterior columns the gait and loss of knee-reflexes are as in tabes dorsalis. Hematologically the color index may be low; the icteric index is increased. Generally there is a decrease in the reticulocytes and blood platelets. There are cases of pernicious anemia which give a rough picture of secondary anemia throughout. The liver is usually enlarged. The greater the hemolysis the greater the quantity of urobilin and urobilogen in the urine.

Diagnosis: Cornell points out "that although the toxin caused by *Monilia psilosis* produces such hemolysis as to induce an increase of bilirubin in the urine, as increased icterus index in the serum, and a positive Van der Bergh reaction in the blood and changes in the bone marrow", the two diseases can be distinguished clinically.

Treatment: The consumption of certain dried fruits (apricots and peaches) considerably increases the output of hemoglobin. The dose of liver extract is six to eight vials a day. In a severe blood crisis, first transfuse blood. A low fat intake is advised by Minot. The result of liver extract is a reticulosis; generally five per cent, at times even to twenty per cent, and a temporary eosinophilia. Achylia and the neurologic syndromes are not affected. Vitamine foods are important. Magnetic iron under the name "Siderac" is potent, its action being similar to arsenic. Begin with 3 mgm. per kilogram of weight and gradually increase to 5 mgm. Iron and arsenic are only useful when combined with liver extract. Give twenty to thirty drops of hydrochloric acid with meals. For diarrhea which also may be caused by liver extract, give one teaspoonful of calcium carbonate with three of charcoal daily.—*B. K. Ashford.*

MALARET, P. S. The control of Malaria in the Preston Division, 17th Annual Report, Medical Department, United Fruit Company, (1928) pp. 83-104.

A well watered cane-growing area in the Northeast of Cuba contains 106,987 acres. Excess water of an abundant water system furnishes a breeding ground for *Anopheles albimanus*, the vector of

malaria. The steady population is 12,000. In 1925, 55.9 per cent were carriers and at least fifty per cent of the admissions to treatment for all diseases was due to malaria; many cases, being nomad labor, became fuel for the flames of an epidemic. Quinine was given to all with fever, thirty grains a day until fever disappeared and ten grains a day thereafter for two months. All cases were searched out by malarial inspectors who made a house-to-house campaign and took thick blood films of all with fever. Cases reported positive were treated by the agricultural overseers for two months. Each year 300,000 quinine tablets were administered. Quinine by injection was little used. In six months 10,000 tablets of plasmochin were used. As it acts preferently in the sexual forms, by combination with quinine, fatal for the asexual forms, a sterilization of carriers can be expected.

Mosquito breeding was attacked by Paris green and sawdust, 1:100, 1:150 and even 1:200 in the hands of two mosquito squads who covered the ground in ten days. Curtailment of mosquito-breeding areas is slow but sure and railroad borrow pits have been eliminated, lagoons drained, small creeks and ditches cleaned and seepage water led away.

Results: There were 1,038 cases of malaria given hospitalization in 1926; 671 in 1927; 246 in 1928. Of the whole population of 12,000 there were 1,463 cases of malaria, or 12 per cent in 1928. The infection rate fell from 55.9 per cent to 8.78 per cent. (Dr. Malaret was one of the group of the late Institute of Tropical Medicine and Hygiene which in 1913 made a medical survey in Utuado of 10,140 cases in 60 days. It is a pleasure for one of that original group to abstract his valuable contribution and testify to his ability.—*Bailey K. Ashford.*

BARBER, H. W., Physician in charge of the Skin Department, Guy's Hospital, London: Relationship of Dermatology to other branches of Medicine. *Lancet*, 217: (5530), 363-369.

The skin largely governs the reaction of the body to external influences through the vegetative system and the endocrines. Originally hairless man was a product of the tropics but this climate offers no stimulus to the endocrine-autonomic system upon whose activity the maximal development of psychical and physical energy depends. Heat regulation is a function of the thyroid-adrenal-sympathetic system and its normal stimulus is the action of cold on the skin. A changeable climate, like England, may not be the most agreeable one but comfort does not make for progress.

Pityrosporon, the acne bacillus and Staphylococcus albus are the common saprophytes of the skin. They cause no trouble while the normal sebum is combined with cholesterol, a bacterial deterrent but may multiply and become pathogenic when there is an altered and excessive secretion of the sebaceous glands, the seborrheic state. There are types of the seborrheic state, (1) the flushed, robust, plethoric type and (2) the pallid, thick-skinned, pigmented, hypotonic kind with hypochlorhydria, low blood pressure, highly acid urine, and excessive intestinal fermentation of carbohydrates. Diet is of paramount importance. The normal function of the sebaceous glands is adipogenesis, or the manufacture of a special fat from the fatty acids of the blood and inimical to bacteria. When there is an excess of fat and fat-producing food they secrete a fat not unlike that ingested which encourages bacteria life. The gonads, the growth of hair and the secretion of sebum are related; hence disturbance of the sex glands is reflected in the skin. Intestinal toxemia is a predisposing cause.—*B. K. Ashford.*

M. PETZETAKIS: La pathogénie de la splénomégalie Egyptienne. Revue de Méd. et d'Hygiène Tropicales.

Idiopathic splenomegaly is rather frequent in Egypt and not being able to assure himself of the cause, he calls it Egyptian splenomegaly. He has inoculated pigeons with the spleen pulp and has produced at times death with fever, emaciation and other symptoms. In human subjects it generally begins with a short fever and thereafter only at times shows a feeble rise of temperature. The spleen may fill the abdomen but is always quite large. Weakness is marked. There is generally a moderate anemia but at times it may go below two thousand erythrocytes per cubic millimeter. He describes what looks like a pernicious type of anemia in some cases. There is marked leucopenia. There is ascites only in persons over thirty five years of age. Death is the rule in six to eighteen years. It is usually limited to a miserably poor population. Pinoy and Nanta, confirmed by Weil, Askanasy, Garin *et al.*, have demonstrated the mycotic nature of certain splenomegalies in Algeria. The writer has also found a fungus in one out of eight of these spleens, but not pathogenic for animals. On the other hand in six of eight cases he has found a peculiar corpuscular body.

(The abstractor can verify the extreme frequency of an idiopathic splenomegaly in Egypt. During the International Congress of Tropical Medicine in Cairo in 1928, he spent some time in the Municipal Hospital of Alexandria and saw some thirty cases and

was told that several splenectomies were daily performed. Now, this identical picture is at times seen in Porto Rico. In Utuado in 1913 I found in staining the spleen pulp of a fatal case, what seemed to be fusiform protozoa arranged in sheaves.)—*B. K. Ashford.*

ALBRIGHT, F. and ELLSWORTH, R.: Calcium and phosphorus studies on a case of idiopathic hypoparathyroidism. *Jour. Clin. Investigation*, 7: (2) 183-201.

The four cardinal phenomena after the injection of parathyroid extract are: (1) a rise in serum calcium, (2) a rise in urinary calcium, (3) a reduction of serum phosphorus, (4) a rise in urinary phosphorus. Diagnosis of idiopathic hypoparathyroidism rests on a low calcium, high serum phosphorus, lenticular opacities, normal density of bone by X-ray, and aggravation of tetany by exertion. Injection of parathyroid extract brought about in two hours a tenfold increase in urinary phosphorus and within six hours the peak of a serum calcium rise with a corresponding maximum fall in serum phosphorus. On a stable diet for forty days, divided into ten periods of four days each, the first six periods with a high, the last four with a low phosphorus intake, it was found that while the urinary phosphorus increased with the intake, the serum phosphorus failed to fall, as did the urinary phosphorus with a low intake in the last four periods. The marked nocturnal polyuria during the first six periods is unexplained but suggests a disturbed water-balance. The serum calcium and serum phosphorus curves suggest that one ion rises because the other falls. The following theorem is advanced: The increased phosphorus excretion caused depletion of the body fluids in this metal. The falling serum phosphorus is evidence. This brings about a mobilization of calcium phosphate from the bones and the serum calcium rises. There will not be any considerable increase in calcium excretion with serum values below 8.5 mgm. per cent.—*B. K. Ashford.*

CURTIS, A. C., WILE, W. J., and ECKSTEIN, H. C.: The involution of cutaneous xanthomata caused by diets low in calories. *Jour. Clin. Investigation*, 7: (2) 240-261.

Cutaneous xanthomata have been considered cholesterol tumors since 1869. The authors find that they contain less cholesterol than the surrounding skin and that their presence does not necessarily depend upon lipemia or hypercholesterolemia. Diets low in calories

FRIEDLANDER, A. and WIEDENER, C.: The Reticulocyte count in normal and in abnormal conditions. *Archiv. of Intern. Med.*, 54: (2) 209-223.

The method proposed is considered to be one of extreme accuracy and superior to the one currently practiced, of mixing the drop of blood on the slide with the dried deposit of a 0.3 to 0.5 per cent solution in alcohol of brilliant cresyl blue and, after spreading the vitally stained drop, staining by Wright's method. Their method consists in mixing 2 cc. of a 1 per cent solution of brilliant cresyl blue with 8 cc. of their diluent (0.6 g. of sod. chlorid. and 0.2 g. potas. oxalate in 100 cc. of dilution of 1:40 "The blood is then ready for counting. The ordinary counting chamber is used and the squares are counted as they are in the ordinary white cell count." By their method the reticulocyte count in normal blood is shown to be one seventh that of Cunningham's (the current slide stain) for the winter months and one half that for the spring months, and the greater accuracy of the former is proclaimed notwithstanding the fact that their chief objection to the Cunningham method is that "the stain does not come in contact with all cells of the blood droplet and the reticulocytes are not evenly distributed over the slide."

(The counting of all reticulocytes in the squares of a counting chamber overcrowded from such a low dilution as 1:40 may easily obscure unobtrusive reticulocytes and account for part of their low values but only laborious check on their praiseworthy effort to correct manifest shortcomings of the present Cunningham method will bring out the facts. There is little doubt that the present "normal" figures for reticulocytes in blood are too high but the abstractor had already come to that conclusion through the Cunningham method discarded by them. The apparent increase in reticulocytes during the spring months is interesting and their explanation thereof ingenious.)—*B. K. Ashford.*

OLITSKY, P. K. and LONG, P. H.: Relation of Vaccinal Immunity to the Persistence of the Virus in Rabbits. *Jour. Exp. Med.*, 50: (3) 233.

Neurovaccine virus was obtained by cataphoresis from the tissues of rabbits long recovered from the effects of cutaneous vaccination, and form suspensions of tissues which were apparently inactive by tests of animal inoculation. Tests on inoculated animals tend to show that immunity may be linked with the presence of active virus in the tissues.—*E. Koppisch.*

OLITSKY, P. K. RHOADS, C. P. and LONG, P. H.: The Effect of Cataphoresis on Poliomyelitis Virus. *Jour. Exp. Med.*, 50: (3) 273.

Poliomyelitis virus collects at the anode of an electric field; it must, therefore, be intimately connected with an electronegative charge. By cataphoresis, active poliomyelitis virus can be separated from an inactive mixture of the virus with its specific immune serum. By the same means, virus can be recovered from the central nervous system of animals past the active stage of infection with poliomyelitis.—*E. Koppisch.*

HUNT, H. F. BARROW E. THOMPSON, L. and WALDRON, G. W.: A Bacteriologic Study of Five Hundred Sixty-seven Post-mortem Examinations. *Jour. Lab. and Clin. Med.*, 14: (10) 907.

From the work of four investigators working separately on a bacteriologic study of the blood and organs of 567 corpses it is concluded that such examinations are reliable when performed as late as twelve hours after death. In all cases but one in which the blood was positive for bacteria, definite foci infections were discovered. The blood appears to be a better indicator of bacteremia than either the liver or spleen. Cultures were negative in all cases but one of non-bacterial diseases. *E. Koppisch.*

MACMAHON, H. E.: Electric Shock. *Amer. Jour. Path.*, 5: (4) 333.

Experimental animals killed by one fatal electric shock reveal as the only positive and constant gross finding, marked congestion of the lungs, liver, spleen, kidneys and heart. Microscopically, capillary injection and occasional petechial hemorrhages are the only constant findings. Animals killed after receiving a series of sublethal shocks showed almost constantly, gross and microscopic changes in the spinal cord, peripheral nerves and base of the brain. Grossly there are areas of swelling and softening in the cord. Microscopically, axis cylinders and myelin sheaths are mainly affected, with swelling, softening, disintegration and vacualization. Later, endothelial leucocytes and polymorphonuclear leucocytes may invade the affected areas. Nerve cells themselves are often involved in the degenerative changes.—*E. Koppisch.*

SAPPHIR, O.: Involvement of Medium-sized Arteries Associated with Syphilitic Aortitis. *Amer. Jour. Path.*, 5: (4) 397.

Involvement of the innominate, carotid superior and inferior mesenteric, common ilial, femonal and subclavian arteries the syp-

ilitic process was found not uncommonly among cases of syphilitic aortitis studied. Microscopically, the changes consisted in endarteritis of the vasa vasorum, pervascular infiltration of lymphocytes in the adventitia, and interruption of the elastic fibres in the media.—*E. Koppisch.*

RUSSELL, D. S.: Intravital Staining of Microglia with Trypan Blue. *Amer. Jour. Path.*, 5: (5) 439.

After aseptic puncture of the brain in rabbits following a preliminary injection of trypan blue, granules of the dye could be demonstrated in all transitoria forms between typical microglia and compound granular cells. (Sitterzellen) The author concludes that this is further evidence towards establishing the microglia as part of the reticulo-endothelial system.—*E. Koppisch.*

MACMAHON, H. E. and ZWEMER, R. L.: Pathologic Histology of Adrenalectomized Cats. *Amer. Jour. Path.*, 5: (5) 491.

Certain gross and microscopic findings appear to be constantly associated with adrenal insufficiency in adrenalectomized cats with an average survival period of ten days. Grossly, fatty kidneys, enlarged lymph nodes, dehydration and moderate congestion of spleen and liver are seen. Microscopically the changes consist in fatty changes in the kidney tubules, hyperplasia of lymphoid tissues, moderate colloid distention of the thyroid and hyperplasia of the intestinal cells of the testis.—*E. Koppisch.*

STEWART, F. W. and RHOADS, C. P.: Lesions in Nasal mucous Membranes of Monkeys with Acute Poliomyelitis. *Proc. Soc. Exp. Biol. and Med.*, 26: (8) 664.

The nasal mucuous membranes of monkeys dying of acute poliomyelitis were studied. All animals had been inoculated intracerebrally. No changes were discovered in nerve plexuses and ganglion cells within the nasal glands. Chronic inflammatory lesions of the submucous tissues not uncommon. In seventeen of thirty-one monkeys, isolated necroses of epithelial cells in the mucosa were found. An intracellular lesion strongly suggestive of inclusion bodies is described.—*E. Koppisch.*