

ABSTRACTS OF CURRENT LITERATURE

WELLS, H.S.: (1931). An observation which suggests an explanation of the anemia in hookworm disease. *Science* 73(1879): 16-17.

Dog hookworms (*A. caninum*) observed under the binocular were found to discharge blood droplets per anus. The average frequency at which these were passed for two periods of observation were fifteen and twenty-two seconds. Periods of feeding inactivity were indicated by clear alimentary tracts. Based upon the number of red cells found it was estimated that a single drop represented 25 cu. mm. of blood. Assuming an average ejection of one drop per minute a single worm would discharge 360 cu. mm. per day. This calculation does not take into consideration digested corpuscles nor the blood lost through hemorrhage. The writer also suggests that the ingestion of large amounts of blood might be correlated with the respiratory function. While the quantity of blood lost under natural conditions cannot be definitely ascertained it is felt that this activity may play a more important role in hookworm anemia than is at present considered to be the case.—*W. A. Hoffman.*

NAGAYO, M.; TAMIYA, T.; MITAURA, T. and SATO, K.: (1930). On the virus of Tsutsugamushi disease and its demonstration by a new method. *Jap. Jour. Exp. Med.* 8 (4): 309-318.

Intraocular inoculation of rabbits with four different strains invariably gave rise to a lesion, especially in the endothelial cells of Descemet's membrane in which the same microorganism could be demonstrated. The organism is absent in controls. Though similar lesions occur with inoculation of typhus virus the causative organisms show no immunological relationships. Similar results attend inoculation of tsutsugamushi virus into monkeys and guinea pigs. The microorganism is identical with that found in human cases. Inoculation of infectious material into immune animals produces no symptoms nor can the microorganism be recovered. All strains of tsutsugamushi virus used, yielded identical experimental results. The histology of the experimental ocular lesions agrees with the lesion found in tsutsugamushi patients. The name *Rickettsia orientalis* is proposed for this microorganism.—*W. A. Hoffman.*

SHAUGHNESSY H. J.; HARMON P. H. and GORDON F. B.: (1930.) The neutralization of poliomyelitis virus by human serum. *Jour. of Prev. Med.* 4: 436.

The writers report the results obtained by testing the neutralization of poliomyelitis virus of different types of human serum. Evidence is presented to show that the serum from normal adults possesses a high neutralizing power while serum from rural children and normal infants have practically no power to neutralize the poliomyelitis virus. Serum from persons convalescing from the disease showed less neutralizing power than serum from normal adults or city children. Family contacts seem to have the same power to neutralize the virus as the serum from healthy adults. The writers conclude that normal serum may prove as effective as convalescent serum in the treatment of poliomyelitis.—*E. Garrido Morales.*

FROBISHER, M.: (1930.) Results of complement fixation tests with yellow fever antigens. *Jour. Pre. Med.*, 5: 65.

A report is made on the examination of 159 human specimens of serum and 175 specimens of serum from monkeys for complement fixation for yellow fever. Eighty-seven per cent correct reactions were obtained from these tests. Syphilis is admitted as sometimes causing falsely positive reactions. Complement-fixing bodies reach a maximum in the blood of monkeys thirty or forty days following infection. They remain in blood for a period from several months to over one year.

The writers also confirm previous observations of the fact that monkeys actively immunized previously in which the titer of complement-fixing bodies has declined to a low point because of age, will respond to second injections of virus with a production of complement-fixing bodies in the absence of fever.—*E. Garrido Morales.*

HUIZENGA, L. S.: (1931). Typhoid fever epidemic in a leper hospital. *Am. Jour. of P. H.* 21: 50.

A highly fatal epidemic of a disease resembling typhoid fever clinically is reported among two hundred lepers of Taikan Leper Asylum on Taikan island, South China. Although no exact figures were available at least sixty cases and fifty-two deaths were recorded. There were no physicians or graduate nurses in the institution. Although no laboratory tests or post-mortem examinations were made the disease was regarded as probably typhoid from clinical observa-

tions. Contamination of the water supply of the asylum by typhoid bacilli from a patient in the institution is believed to have caused the epidemic. Not a single case of the disease was reported from a pirates village located within a mile of the leper colony. This village however had an entirely different water supply and the inhabitants had no direct contact with the lepers.—*E. Garrido Morales.*

CLAYTON, E. S. and MILNE V. E.: An Outbreak of Food Poisoning in Staffordshire. *Brit Med. Jour.* 2: 684.

This paper describes some of the characteristics of a hog-cholera bacillus which was responsible for an outbreak of food poisoning in Staffordshire. The outstanding features were the presence of two subtypes and the high serological specificity of the cultures when the organisms were at first isolated.—*A. L. Carrión.*

SILVA, F. and ARAUJO, E.: Caso de Chromoblastomycose. *Brazil-Medico* 54: 539.

The authors report a case of chromoblastomycosis, the first one registered in the States of Bahia, Brazil. The patient had verrucous lesions situated in the right leg and foot. Pathological sections show the parasites in and outside of the giant cells. The fungus differs in no way from that described by other Brazilian authors. The shape, size and dark-brown color of the organisms led the authors to classify this fungus as *Acrotheca pedrosoi*.—*A. L. Carrión.*

MONTGOMERY, E.: Larva Migrans (Creeping Eruption). *Arch. Derm. & Syph.* 22: 813.

A case of larva migrans is reported, in which the larva of *Gastrophilus* was demonstrated in serial sections at the juncture of the epidermis and the cutis. Detailed histopathologic description is given, including distinction between the effects of the presence of the organism itself, of toxin liberated by the larva and of scratching. The author states that the depth of burrow or tunnel in the epidermis or at the juncture of the epidermis and the cutis, is of no diagnostic significance in the differentiation of the various causative organisms. He adds that a diagnosis of the particular organism causing the eruption in a given case can only be decided positively by the actual demonstration of the parasite.—*A. L. Carrión.*

STOKES, J.: The Effect on the Skin of Emotional and Nervous States: II. Masochism and Other Sex Complexes in the Background of Neurogenous Dermatitis. *Arch. Derm. & Syph.* 22: 803.

In this work the author presents three examples representing stages in complexity and in clarity of demonstration of a sexual psychosis as an element in the maintenance if not the actual origin of itching. In one of the cases, a masochistic-sadistic complex appeared to be superposed on a generalized dermatitis of apparently diathetic and focal infectious background. In a second and more completely studied case, a substitution of scratch pleasure for sexual orgasm, possibly under a combination of hereditary predisposition with a mother-fixation inhibiting normal relief in marriage, was observed to constitute what Sack has described as a true onanistic equivalent—"cutaneous masturbation". No other explanation of the cutaneous picture, except a possible minor foot allergy, could be identified despite the most searching and repeated investigation.—A. L. *Carrion*.

CHARGING, L.; SUIZBERGER, M. B. and CROWLY, D. F.: Hypersensitiveness of the Skin to Arsphenamine as Determined by the Contact Test: Its Relationship to Arsphenamine Dermatitis. *Arch. Derm. & Syph.* 22: 237.

This work was undertaken particularly to ascertain whether the disposition for the development of arsphenamine dermatitis can be determined in advance by means of a skin contact test. Five hundred and three patients were employed; 210 of these were syphilitic and 293 nonsyphilitic. While the majority of the syphilitic patients were in the first two years of the infection, there were also some late cases. As nearly as could be ascertained, the syphilitic patients had had no prior treatment with any of the arphenamine preparations. They were selected with this point in mind. The nonsyphilitic patients were used as controls. All were ward patients; consequently, and exact observation of all reactions were possible during an extended period of time. The following conclusions were reached:

1. Of persons not previously treated with arsphenamine, approximately from seventeen to twenty-one per cent reacted to the contact test with his drug.

2. There were no marked differences in sensitiveness between syphilitic and nonsyphilitic patients; the syphilitic group was slightly less sensitive.

3. In none of the patients who had positive reactions to the con-

tact test did dermatitis develop on subsequent intravenous injections of arsphenamine. In two patients who had not had positive reactions to the contact test a dermatitis developed.

4. The contact test as used in this study does not indicate whether arsphenamine dermatitis is likely to develop in a patient.—

A. L. Carrión.

WILLIAMS, J. and CORRAN, J. W.: The Preservation of the Antiscorbutic Vitamin in Lemon Juice. *Bioch. Jour.* 24: 37.

The substances which exert the strongest preservative effect against gross fermentation possess the greatest destructive action on Vitamin C. The juice contained no added preservative and retained its antiscorbutic potency to a great extent.—*L. G. Hernández.*

CHANDRASENA, J. P. C.: The Chemistry of the Products of *Cocos Nucifera*. Part I. *Bioch. Jour.* 24: 1493.

The percentage of the water in the kernel diminishes with age. The oil content at the latest stage is either less than, or equal to, that at the preceding stage. The quantity of "residue", mainly cellulose, appears to vary only slightly during all the stages of development; in two of the sets, Panadura and Dehiwala, it is practically constant. The quantity of pentosans calculated on the dry material is nearly the same in all cases and is low, whereas in the haustorium it is comparatively high. Another point of interest is that the residue or "cake" is lignin-free, while the lignin content determined by the hydrolysis of the carbohydrates by means of seventy-two per cent sulphuric acid is very high. It is probable that pentosan formation precedes the conversion of cellulose into lignin.

As regards oil, the constants do not seem to vary greatly, except for the iodine and acid values which are high in the oil from the youngest bunch. It is also noteworthy that the oil from the haustorium has an even higher iodine value.—*L. G. Hernández.*

WANG, C. C.; HAWKS, J. E.; HUDDLESTUN, B.; WOOD, A. A. and SMITH, E. A.: The Influence of High and Low Protein Diet on the Basal Metabolism and the Chemistry of Blood and Urine in Normal Women. *Jour. Nutrition* 3: 79.

A study of the influence of the protein level on basal metabolism and blood and urine chemistry was conducted on six normal adult women varying in age from seventeen to thirty-six years. The subjects received for five weeks a high-protein diet containing 2 gm. of

protein, and sufficient carbohydrate and fat to make forty calories, per kilo. of body weight. After an interval of three weeks, during which time the protein content of the diet was decreased until a level of 0.6 gm. was reached at a constant caloric value of forty, the subjects remained on this diet for four weeks. About a month later the same subjects were placed on a normal diet for two weeks during which time they were allowed to choose their own food as well as the amount.

No marked difference was found in the basal metabolic rate of the subject during the three periods. A slight increase was observed during the normal diet which might be due to an improved physical condition following a summer vacation or to the difference in the temperature of the season.

An increase was found in the total non-protein nitrogen, urea nitrogen and creatine of the blood during the high-protein period. No change was observed in uric acid, creatinine and calcium. There was a slight increase in the sugar and a marked increase in the blood lactic acid during the low protein period. No difference was found in blood pressure. The total urinary nitrogen, urea nitrogen, ammonia nitrogen, uric acid and creatine varied directly with the protein intake. Creatinine remained constant throughout the investigation. Total titrable acidity in the urine varied with the ammonia and hence with the protein intake. There was both a daily and an individual variation in organic acids. Lactic acid remained constant throughout the different periods.—*L. G. Hernández.*

OCAMPO, M.; CORDERO, N. and CONCEPCION, I.: The Basal Metabolism of the Filipinos. *Jour. Nutrition* 3: 237.

The metabolism of eighty-eight men and sixteen women was determined by the Benedict Roth portable metabolism apparatus and found to be -7.8 and -9.3 per cent respectively lower than the Aub-DuBois standards.

Observations of basal metabolism on two Filipinos while in the temperate climate show no appreciable difference from those made in the Philippines.—*L. G. Hernández.*

SCHELLING, V.: Observations on the Serum Calcium, Proteins, and Inorganic Phosphorus in Experimental Vitamin B. Deficiency and Inanition. *Jour. Biol. Chem.* 89: 575.

Data are presented for the calcium, proteins and inorganic phosphorus in the blood of dogs deprived of vitamin B. (whole complex)

and of fasted dogs. With one exception where the calcium dropped from 13.6 mg. to 11.5 mg. no remarkable decrease in the calcium during the vitamin B-free period was observed. There is no noteworthy change in the proteins and the inorganic phosphorus.

In fasting dogs a decrease in the calcium was observed in the advanced state of paralysis when the loss of body weight exceeded twenty per cent; the inorganic phosphorus was found to be increased; in one case the proteins were slightly decreased.—*L. G. Hernández.*

MCCOSH, S. S.; MACY, I. G. and HUNSCHER, H. A.: Human Milk Studies. VI. Vitamin Potency as Influenced by Supplementing the Maternal Diet with Yeast. *Jour. Biol. Chem.* 90: 1.

The breast milk from three women were each tested separately on rats, for their vitamin B content. The potencies were determined before and after supplementing the usual maternal diets with 10 gm. of yeast daily. A comparison showed the vitamin B content of the three milks to be inversely proportional to the quantity of milk secreted daily. The results for these subjects indicate that some substance was carried over into the milk from the maternal diet containing daily supplements of 10 gm. of yeast which stimulated more economical utilization of the food consumed by the experimental animals. This substance did not stimulate the appetite, consequently food consumption was not augmented.—*L. G. Hernández.*

MERRITT, H. H. and BAUER, W.: The Equilibrium Between Cerebrospinal Fluid and Blood Plasma. III. The Distribution of Calcium and Phosphorus Between Cerebrospinal Fluid and Blood Serum. *Jour. Biol. Chem.* 90: 215.

The normal serum content was found to vary between 9.35 and 10.6 mg. per 100 cc. with an average of 10.0 mg. per 100 cc. The cerebrospinal fluid calcium ranged from 4.5 to 5.23 mg. per 100 cc. with an average of 5 mg. The ratio of the cerebrospinal fluid calcium to the serum calcium varies from 45 to 53 per cent, with an average of 50 per cent. The serum and cerebrospinal fluid calcium content was found to vary directly with the serum protein in such a way that there was no significant change in the ratio of cerebrospinal fluid calcium to serum calcium which changes in the serum protein. The serum and cerebrospinal fluid calcium content was normal in various non-suppurative diseases of the central nervous system. In meningitis there was a slight diminution of serum calcium content

with an increase in the cerebrospinal fluid calcium content. This increase in the cerebrospinal fluid calcium content can probably be accounted for by increased permeability of the meninges and the choroid plexus and the resulting increase protein in the cerebrospinal fluid. There was a slight decrease in the serum and the cerebrospinal fluid calcium content in pulmonary tuberculosis. Water drinking during the antiduretic action of vasopressin caused a decrease in the serum and cerebrospinal fluid calcium. There was a definite decrease in serum calcium content at the end of pregnancy. The amniotic fluid calcium content was found to vary between 5.4 and 8.8 mg. per 100 cc. with an average of 6.59 mg. per 100 cc. The calcium content of the diet had a slight influence on the level of the serum calcium of cats. In cats the cerebrospinal fluid calcium content averaged fifty-four per cent of the serum calcium, and the aqueous humor calcium content averaged sixty per cent of the serum calcium.

In non-suppurative diseases of the central nervous system, the cerebrospinal fluid phosphorus content was found to vary between thirty-one and forty-five per cent of the serum phosphorus with an average of thirty-eight per cent. In suppurative diseases of the nervous system, the ratio of the cerebrospinal fluid phosphorus to serum phosphorus varied between thirty-five and 123 per cent with an average of forty per cent.—*L. G. Hernández.*

MERRITT, H. H. and BAUER, W.: The Equilibrium Between Cerebrospinal Fluid and Blood Plasma. IV. The Calcium Content of Serum, Cerebrospinal Fluid, and Aqueous Humor at Different Levels of Parathyroid Activity. *Jour. Biol. Chem.* 90: 233.

The constancy of the serum calcium level needs no comment, while that of the cerebrospinal fluid calcium level is more remarkable. The serum calcium varies with serum proteins, low serum protein being regularly associated with low serum calcium. The variations in serum calcium which accompany changes in the parathyroid activity are, however, independent of the serum protein level. It is interesting therefore to compare the effect upon the cerebrospinal fluid calcium level of these two apparently different types of variation in the serum calcium. The outstanding result in both cases is that the cerebrospinal fluid calcium remains remarkably constant in spite of well marked changes in the serum calcium level. The striking lowering of the serum calcium occurring in parathyroid tetany and the sustained elevation of the serum calcium following parathormone administration were without appreciable effect upon

the cerebrospinal fluid calcium level. Variations in serum calcium associated with different levels of serum protein were reflected to a slight degree in the cerebrospinal fluid. Variations were observed in the cerebrospinal fluid calcium in patients who took water by mouth during the antidiuretic action of vasopressin. In these cases dilution of both the blood serum and the cerebrospinal fluid were noted.

If cerebrospinal fluid is considered as a dialysate in osmotic and hydrostatic equilibrium with the blood plasma, the data of the authors would indicate that variations in serum calcium occurring during parathyroid tetany or following the administration of parathyroid gland extract are chiefly or wholly limited to the non-diffusible calcium, and would also suggest that those variations in serum protein involve both the diffusible and the non-diffusible calcium.—

L. G. Hernández.