ABSTRACTS OF CURRENT LITERATURE

HILL, F. M.: Lymphoid hyperplasia in mice. Jour. Cancer Research, 14 (3):325.

Of 216 albino mice, all from the same stock started in 1920, 134 acquired lymphoid hyperplasia as follows: nine lymphoid leukemia, thirty-four pseudo-leukemia (lymphocytic), five pseudo-leukemia (myeloid) fourteen myeloid leukemia, twenty-four lympho-sarcoma, fifteen lympho-granuloma, nine atypical leukemia and twenty-three of a mixed type. Most showed growths in one or all of three sites, (1) mesenteric near the pancreas, (2) near the heart, (3) at the helium of the kidneys. The growths became malignant as the proportion of primitive cells (identical with free reticular-tissue cells) increased. The spleen and glands, as well as liver and kidney, were often not enlarged, but all were choked by the new cells. In the lymphoid leukemias, there was lymphoid hyperplasia in spleen, liver, pancreas, kidney, etc., with great increase of lymphocytes in the blood. In pseudo-leukemia the same condition existed without increase of the white cell count. In both there were embryonal cells whose frequency determined malignancy. In myeloid leukemias a rapid and fatal course was the rule. Invasion of organs by myeloid cells obliterated their normal architecture. The blood gave enormously high white cell counts.

Among the atypical leukemias, two showed myelocytes and an increase of granular cells in the blood and yet the histological changes in the organs and tissues were lymphocytic. Two others showed a definite myeloid leukemia superimposed on an apparent Hodgkin's disease. One was a chloro-myelo-sarcoma, and all growths were bright green in color. There was splenomegaly, general glandular enlargement and large growths in the usual sites with myeloid and lymphocytic invasion and obliteration of normal structure in liver, glands and spleen. Two began as lympho-sarcoma with eighty per cent of lymphocytes in the blood and ended as a myeloid leukemia, with destructive invasion of liver, spleen and glands by primitive cells and great reticular activity. Two were lymphoblastic and the normal-sized spleen was destroyed by lymphocytes, lymphoblasts and primitive cells. The blood showed an enormous white cell count with fifty per cent of large lymphocytes. The cases with lympho-sarcoma were characteristic: the hyperplasia consisted of lymphocytes, lym-

phoblasts and primitive cells. The growths, when small, showed masses of small lymphocytes arranged concentrically about a central blood vessel. Near the center of larger growths lymphoblasts appeared. Eventually these were in turn overwhelmed by primitive cells. Reticulum was much activated and reticular cells were seen freeing themselves to become identical morphologically with the primitive cell. Endothelial activity in liver and spleen set free cells difficult to distinguish from lymphocytes. In this condition is found the highest degree of invasiveness and destruction. Blood films showed no deviation from the normal. The cases of Hodgkin's disease showed enlarged spleen, glandular involvement, and usually a growth in the mesentery. The blood showed from seven to twenty-five per cent eosinophilia in all but one case but there was no leucocytosis. Focal cell groups in the mesentery, at first lymphocytic, became a mass of large and small lymphocytes, plasma cells and eosinophiles, intermingled with many endothelial and endothelial giant cells, primitive cells, and multinucleated giant cells. These same cells overwhelmed the liver and spleen and there was intense activity of the reticulo-endothelial system. In the organs and tissues of mixed types every possible combination of invading cells was observed. The liver at times showed an invasion of myeloid cells while the spleen in the same animal presented Malpighian bodies filled with primitive cells, and the pulp myeloid; the lymph glands and growths were lymphocytic.

Considering these cases in a block, all which depart from the lymphoid or myeloid type are marked by the presence of an embryonal type, "the primitive cell", with an increase in malignancy and rapidly fatal course. This cell, with its large, vesicular, palely staining nucleus, rich in chromatin, and faintly staining basic cytoplasm, seems to be the progenitor of both lymphoid and myeloid elements. As the disease progresses and the cells become more embryonic, death often interrupts a process which would in all likelihood end in lymphosarcoma.—*B. K. Ashford.*

MARTIN, Ch. J.: Thermal adjustment of man and animals to external conditions, Croonian Lectures. Lancet 219(5585):561; 219(5586):617; 219 (5587):673.

The rate of bodily functions is doubled or trebled for every rise of 10 degrees C. At rest, 1.2 calories are produced a minute and correspondingly 2 cc of water must be evaporated; at work this rises

to 5 or 6 calories and 600 cc of water must be evaporated each hour; at work in the tropical sun twice this amount must be eliminated. The efferent nerves controlling heat loss leave the cord at the level of the seventh cervical vertebra with the cervical nerves which, if cut, convert the animal into almost a poikilothermic creature. Irenschmid et al found the thermotactic center at the base of the third ventricle. It is about one-tenth of a cubic centimeter in volume. Cold water introduced into this center through a canula produced vaso-constriction and shivering; hot water, dilatation of vessels and diminution in oxygen consumption. Were it not for the sensitivity of this center to warmer blood produced by the stimulation of its thermogenic mechanism by afferent nerves from a cold skin, the opposing or themolytic mechanism would not be aroused to counteract an excessive response to the impression of cold carried by these nerves, and the reaction would be a chill. The reaction of marsupials and echidna to temperature environment shows that they depend chiefly on regulation of temperature by varying production. Chemical regulation of variation of oxygen combustion is phylogenetically the more ancient method. Physical regulation is an attribute of the higher animals and is manifest only after birth.

The regulation of the rate at which oxygen is used is a vital function. Muscle, which stores energy that otherwise would run off into heat can be compared to an accumulator, although only about twenty per cent of it can be converted into work. In reality, it uses less oxygen than any other tissue; kidney consumes twenty-five times as much. The mean monthly variation in basal metabolism varies inversely as the temperature. In the hot countries the basal metabolism appears to be from ten to fifteen per cent below what it would be in the temperate zone, with much individual variation. The persistent adjustment to tropical climates is by the adrenals and especially, the thyroid. The calorigenic action of adrenals is a matter of minutes while that of thyroid is a matter of days but is persistent. But reduction of the resting metabolism by ten per cent is insignificant to anything but a vegatative life as exercise reduces this to only two per cent. When the environmental temperature approaches or exceeds that of the body, adjustment is possible through the evaporation of water, as the lung gets rid of but five per cent of the heat. The most effective stimulant to sweat glands is a rise of temperature of the blood supply to the brain by exercise and hot baths. Chilling of the skin inhibits this. From ten to twenty grams of salt, eighty per cent of which is sodium chloride, may be lost in

a day by sweating. Miner's cramp due to the loss of salts in from two to four and a half pints of sweat per hour is best treated by ingesting 0.2 per cent sodium chloride solution. The blood is not concentrated by all of this sweating as there is a comsatory flow of water, and protein from the tissues to the blood stream producing an increased richness in plasma and a relative poverty in corpuscles. Prolonged sweating causes the supply from the tissues to flag, the blood concentrates, and hyperthermia becomes imminent. The author calculates 1.27 gram-calories of energy derived from sunlight in London per square centimeter of body surface exposed. This is equal to the extra amount of heat produced by walking three and a half miles per hour on the level. The amount of work a man can do in the tropics depends upon muscular development and skill, the amount of oxygen he can mobilize in the muscle in a unit of time, and the rate at which he can get rid of the heat formed. This involves a strain upon the heart. "Work in hot surroundings demands a stout heart. The individual has to do not only the external work demanded but also run a refrigerating plant to rid him of the heat inevitably formed."—*B. K. Ashford.*

ALGER, H. A.; DIXON, H. H. and BARR, D. P.: The functional pathology of hyperparathyroidism. Jour. Clin. Investig., 9(1):143.

The coincidence of parathyroid hyperplasia and bone tumors with multiple cysts and giant cell formations is generally indicative of hyperparathyroidism. Three patients were studied, one with multiple myeloma and two with osteitis fibrosa cystica. Calcium and phosphorus were calculated in the food intake and urine and stool output by four-day periods. They all excreted much more calcium than they received in food which was always more than Sherman's standard of 0.45 g. per 70 kilos of body weight. The most striking feature in these cases was the excess of urinary calcium which normally should be around 0.1 to 0.2 g., an amount not much influenced by a high calcium intake. In the author's cases it varied between 0.25 and 2.3 g. or more. Fecal calcium was excessive in two of the cases. No typical abnormality of phosphorus metabolism was found but in one case only minute quantities of phosphorus accompanied an excessive fecal calcium, contrary to the idea that an excess of one element will increase the elimination of the other. The administration of 5 grams of sodium acid phosphate with 15 grams of sodium bicarbonate daily in one case; raised the serum phosphorus and de-

pressed the serum calcium to about normal, creating for the first time a positive calcium balance. In one case, excessive calcium intake produced a serum calcium of 17.8 with stupor, delirium and cardiac failure. Orthophosphate raised the serum phosphate to 8.6 milligrams and depressed the serum calcium to 11.7 in twenty-four hours with disappearance of all symptoms. Irradiated ergosterol produced a definite increase in the absorption of phosphorus by the gastro-intestinal tract. Parathyroidectomy in the first case produced alarming symptoms with tetany, ketosis with normal blood sugar and a fall of serum calcium to 4.11 mgms in sixteen days. Despite huge doses of parathormone and calcium lactate (250 units of the first and 40 grams of the second in a single day) the serum calcium only rose to 5.4 mgms. Tetany was not influenced until 1.7 g. of calcium chloride was given intravenously and the next day there was a dramatic improvement. The urinary relation between creatine and creatinine excretion was effected for the first few days after operation, creatine rising slightly with a sharp depression in creatinine; but equilibrium was soon established. No serum electrolytes, save calcium and phosphorus, were affected in hyperparathyroidism.

Morton compares the abnormality of calcium metabolism in hyperparathyroidism to the abnormal metabolism in diabetes mellitus. In diabetes, a *deficient* production of an internal secretion results in an elevation of blood sugar. In hyperparathyroidism, an *increased production* of an internal secretion causes a rise of serum calcium. In both, general bodily disturbances arise and effect a loss of the involved substance through the kidneys. Increase in serum calcium concentration causes an increase in the tone of smooth muscles and the heart, although parathyroid intoxication produces extreme hypotonia of voluntary muscles and marked weakness, abdominal pain, constipation and vomiting. Metastatic calcification is most often found in lungs, gastric mucosa, and kidneys, all points where acid is excreted. This predisposes to nephrolithiasis and secondary pyelitis and cystitis. There is a distinct specific form of disease for which the term, "osteomalacia" should be reserved. It is distinguished from hyperparathyroidism by a low serum calcium, low urinary calcium, and excessive fecal calcium. The obvious treatment of hyperparathyroidism is the surgical removal of excessive parathyroid tissue. Care should be observed in using orthophosphate as increase of phosphorus may exaggerate the fecal calcium excretion and increase the negative calcium balance. Its use should be reserved for alarming conditions arising from extreme hypercalcemia.—*B. K. Ashford.*

LYNCH, K. M.: **The intestine of pellagra.** Internat. Clinics, 3(40th series):130.

The pathology of the intestine in pellagra warrants the term "pellagrous intestine". Changes are generally limited to the colon but at times extend into the lower ileum. The mucosa is thickened, bronzed or red in color, and flattened. Ulcers are rare and shallow. Histologically, there is hyperemia, degeneration, and surface desquamation, with a peculiar degeneration of the epithelium of the mouth and neck of the glands and cystic dilatation from occlusion of the duct. The degeneration is hyaline and the cells become flattened, reminding one of the keratinization of squamous epithelium. The submucosa is markedly congested and diffusely infiltrated by large mononuclears, lymphocytes, and plasma cells. Fibrosis is the ultimate change and the bowel may become tough like leather. There is a marked local arteriosclerosis. Nerve ganglia are involved with degeneration and invaded by round cells.

(Before concluding that these changes are pathognomonic of pellagra, it would be well to review the histopathology of the sprue intestine, particularly the extensive work of Kelsch and Kiener (Traité des maladies des pays chaudes, 8 vo, Libraire Bailliére, 1889) in which many cases of Cochin China diarrhea were studied pathologically and practically identical findings reported, although not limited to the colon. This histological picture looks more like the expression of a nutritional deficiency or unbalance than the ear-mark of any special disease.)—*B. K. Ashford.*

HOWLETT, H.: **Intravenous therapy for post-operative shock.** Internat. Clinics, 3(40th series):26.

In shock there is diminution of blood volume impairing circulation and oxygenation of tissues, as well as a general constriction of arterioles in order to feed the heart and brain. The tissue cells in the capillary area imbibe more fluid and concentrate the blood. The kinetic pressure in the capillaries is inadequate to maintain the flow and the heart finds itself with less and less blood. This causes further depression of blood pressure and the continuation of a vicious cycle ends in failure of circulation. Dehydration by diarrhea or vomiting predispose to shock. In addition to warmth, analgesics, and repose of mind, restoration of circulation by fluids is essential. Insulin in five minim doses may be given before and after intravenous treatment to increase intracellular oxygenation. Cardiac

stimulants and adrenalin are generally uncalled for. Fluid intravenously is the only sure method of increasing blood volume. Blood is the first choice but sodium chloride and glucose solutions are good substitutes. The average amount given in substitution for blood in thirty cases was 4,500 cc.—*B. K. Ashford.*

MARTIN, L.: The time factor in the action of pancreatic enzymes. Arch. Inter. Med., 45(4):535.

The writer presents data to show that the idea that diastase acts immediately as a catalyzer in contact with starch and that incubation time plays no special part is incorrect. A ten per cent solution of powdered pancreatin extract in distilled water was filtered after standing and diluted to 1:250 or 1:500 with phosphate buffer, pH 7.7. Eight tubes, each containing 1 cc of this diluted solution and 1 cc of a 1 per cent solution of starch in phosphate buffer at pH7.7 were incubated varying periods of time from five to sixty minutes. The amount of dextrose in milligrams rose markedly in proportion to time of exposure to the enzyme, in one experiment from 42 mgms after fifteen minutes to 400 mgms after sixty minutes. The same method was used with duodenal return from a case of hepatosis with severe jaundice due to arsphenamin poisoning in which no bile was being excreted into the intestine. The duodenal return was collected in 15 cc centrifuge tubes until drainage. A small amount of the tube containing the clearest and darkest fluid was diluted to 1:600 with phosphate buffer and the same procedure followed as with the pancreatic extract with the same result. Hence there is a direct proportion between the length of incubation and the amount of dextrose produced. Weak solutions of the enzymes are needed for the demonstration.—*B. K. Ashford.*

KHANI, E.: Le bouton d'Orient a Damas. Rev. Méd. et d'Hyg. Trop., 22(5):229.

The watering place, Damas, has only recently developed autochthonous cases. With a great increase in Phlebotomus due to absence of sanitation in the midst of political upheavals, putrefaction of dead bodies and squalor, as well as the political assimilation of Damas to Aleppo and easy automobile communication between the two, the disease has recently become endemic. Adults between twenty and forty years are attacked by preference; children more rarely. One

form resembles *lupus vulgaris;* the other involves lymphatics and glands. In Damas the face is the site of lesions in only twenty per cent.—*B. K. Ashford.*

PANAYOTATOU, A.: Leishmaniose cutanée ou Bouton d'Orient (Salek) a Alexandrie d'Egypte. Rev. Méd. et d'Hyg. Trop., 22(5):211.

The disease is found spotted about in the Mediterranean basin and in some adjoining or near-by countries. It developes on the exposed parts. She reports nine cases, two on the nipples of breasts of women, all successfully treated by subcutaneous emetine. The vector is a Phlebotomus, not always of the same species. In leishmaniosis common to man and the dog, man is the reservoir of infection. While adults are affected, it is a disease of children. She recommends emetine hypodermically and locally in compresses. One case was followed by kala-azar. (This seems to be extremely rare.) —*B. K. Ashford.*

CHEVALIER, G.: Notes cliniques sur le bouton d'Alep. Rev. Méd. et d'Hyg. Trop., 22(5):221.

The beginning lesion of Aleppo boil resembles a mosquito bite. It becomes an intradermic nodule, surrounded by a reddish, infiltrated zone. Thus it may persist for months. It then reaches the size of a bean and shows under the raised epidermis a thick secretion. The surface is smooth and glistening and when it opens exudes a viscous liquid. The cavity of this abscess is relatively large compared with the opening. At times no secretion forms; only a hyperkeratosis becoming verrucose. When fully developed the Oriental sore is a round or oval ulcer one centimeter in diameter, covered with a thick, adherent crust of a dirty yellowish-gray color. The whole is surrounded by a thick, edematous zone from 0.5 to 1 centimeter broad. There is no pain in the lesion and the general health is not affected. Untreated, the lesion reaches a diameter of from seven to eight centimeters, covered by a thick, adherent crust and viscous discharge. There is no accompanying lymphangitis or involvement of glands. The importance of the disease lies chiefly in the indelible cicatrix which is permanent. The mutilation of the face may be severe with ectropion, or even loss of part of a nostril or ear. The palms of the hand and soles of the feet are not affected, and the mucous membrane is never invaded. Of 1711 oriental sores observed

by Coussa, 1171 were limited to the head, chiefly the face. One was found on the prepuce. A single lesion only was observed in 43.6 per cent; from one to three in 78 per cent. The most frequent age of incidence lies between two and three years. The overcrowded and dirty poor are particularly scourged. The mosquito net and lack of contact with foci of infection protect the European. Aleppo boil is self-limited and commonly lasts a year. There is never a succession of lesions but secondary lesions may occur in the neighborhood early in the evolution. Later, local immunity seems established. General immunity is produced by one lesion after six months and children are vaccinated on the arm from human lesions to avoid facial mutilation. The diagnosis is made by scrubbing the lesion with a swab wet with saline solution and making slide smears with scrapings from the floor and edges of the ulcer. The leishmania are abundant in the early lesions, difficult or impossible to find in the old ones. The local treatment consists of non-specific antiseptics for secondary invaders (methylene blue is preferred) and intravenous tartar emetic. Radiotherapy and carbonic acid snow have given favorable results but the arsenic and bismuth injections and emetine have been abandoned as useless. Surgical ablation is condemned as preventing immunity and causing additional mutilation.—*B. K. Ashford.*

VINCENT, S. and THOMPSON, J. H.: The role of the adrenalin medulla in the maintenance of blood pressure. Endocrinology, 14(2):93.

Conclusions from ligature of the adrenalin veins alone have been previously fallacious as there is a collateral circulation emptying into the renal vein. The authors experimented on cats. Cutting off of the collateral circulation caused no change in blood pressure but when in addition the adrenal veins were clamped, a marked gradual fall occurred. This fall lasted about twenty minutes and then the original pressure was slowly regained. Complete adrenalectomy reproduced the same phenomena. When however, a large portion of the splanchnic area was removed prior to the experiment, the recovery to normal blood pressure was delayed and incomplete. The authors conclude that the splanchnic nerve acts in a compensatory fashion after adrenalectomy and brings about a normal blood pressure. Thus the adrenals should not be considered essential to the maintenance of blood pressure but are only a normally functionating accessory mechanism, the removal of which causes a transient fall of blood pressure. They believe that the persistent low blood pressure

in Addison's disease is really due to the fibrocaseous involvement of the abdominal ganglia; hence, a persistently low blood pressure.—*B. K. Ashford.*

SPRAY, R. S.: Lingua nigra; a case report with cultural studies. South. Med. Jour., 23(9):844.

There are about two hundred reported cases of this condition in the literature. This case of black tongue was treated locally with 1:1,000 aqueous solution of gentian violet and in a few applications the organ returned to normal. There was a relapse in a year. On both occasions the same organisms were found. The anterior quarter of the tongue was as "black as ink". Scrapings revealed eroded papillae which were deeply melanotic and keratinized. Yeasts and mycelium were found, the latter penetrating into the mucosa. Scrapings were sown in Sabouraud's maltose agar and in twenty-four hours two types of colonies were produced one large and one distinctly small; both were white, round and glistening. The large colony strain gave yeasts, round when resting, ellipsoidal when budding, measuring from ten to eleven by six to seven microns. No asci could be developed on gypseum block. Gelatin stabs showed mycelial outgrowths without subsequent liquefaction. Litmus milk remained neutral, or became so after a slight preliminary acidity. The small colony showed organisms resembling those of the large one save that the yeasts averaged 6.5 to 7.5 microns in length. Mycelium was scanty and gelatin stabs showed no mycelial outgrowths. Litmus milk remained neutral, or became so after a slight preliminary acidity. The small colony showed organisms resembling those of the large one save that the yeasts averaged 6.5 to 7.5 microns in length. Mycelium was scanty and gelatin stabs showed no mycelial outgrowths. Litmus milk remained neutral. No ascospores were developed on gypseum block. Carbohydrates, chiefly sugars were dissolved in 0.5 per cent concentration in serum water at pH 7.2 in one set of tests and in 1 per cent concentration in sugar-free casein-digest broth in another. In the first medium, twice repeated, glucose, levulose, maltose and mannose were fermented regularly; galactose, xylose, sucrose, trehalose and mannitol irregularly; arabinose, lyxose, starch and sorbitol doubtfully. In the same medium, the small colony regularly fermented glucose, mannose and trehalose; irregularly, levulose, galactose; doubtfully, arabinose, xylose, lyxose. In the second the large colony, both acid and gas were produced in glucose,

levulose, maltose mannose and trehalose; acid alone in galactose and starch; doubtful acidity in arabinose, xylose, lyxose, sucrose. The small colony produced acid and gas in dexthose, levulose, mannose and trehalose but refused to ferment maltose. The large colony developed a heavy pellicle without enmeshed gas; the small colony showed none. The large colony developed mycelium in all sugar media in fermented but in none it failed to ferment. The small colony rarely showed mycelium whether it fermented or not. There was great variability in the mycelium according to the carbohydrate, reaction and age of culture. Neither of the strains were pathogenic for rabbitts, or guinea pigs by intravenous or subcutaneous inoculation of 1 ml or by scarification of the tongue but the same strains were pathogenic in three days in the same dose for rabbits causing death with miliary abscesses of the liver in the hands of Dr. Steinfield to whom they were sent. His strains were only carried through the third or fourth culture generation while those of the author had passed their sixteenth. Dr. Steinfield subcultured his strains after passage and recovered asci on gypseum blocks. The author assimilates these strains to *Monilia londinensis* and *M. Pinoyi* but evidently does not consider them identical. This excellent and painstaking work shows the fallacy of trying to establish specificity of Monilia on mere sugar fermentations as well as pointing to the bewildering morphology of these protean organisms on varying media. It lacks microscopic study of plate cultures and stained sections of gelatin stabs. *Monilia londinensis* and *M. Pinoyi* are believed by the abstractor to be identical with *M. psilosis* and he has suggested elsewhere that these organisms and a few others be included in the term, *Monilia albicans*, Robin, emend. Ashford, 1930. This Monilia, with all of its many vagaries, is a common denizen of the mouth and intestine. May not the pigment in black tongue be associated with some bacterium in symbiosis?—*B. K. Ashford.*

BOSE, J. P.: Inter-relationship of some of the important endocrine glands with special reference to the part they play in influencing the color and texture of the skin. Indian Jour. Med. Research, 18(1):227.

The varieties of Himalaya rabbit were employed to test their reaction with insulin and adrenalin, (1) the albino with pink eyes, (2) the jet-black with dark eyes. A third variety was added, the brown Belgian hare. The dose of insulin used was three clinical units per kilo of weight. Judging by the reduction in blood sugar

with this dose the albino rabbitts were much more resistant to insulin than the jet-black and brown varieties; in the latter most of them had typical hypoglycemic reaction, 25 per cent severe, while in the former none were affected. Tyrosin is capable of producing pigments. The adrenals convert tyrosin into adrenalin but if they are insufficient in their function, part of this tyrosin may give rise to pigment. A human example is seen in Addison's disease. Now, adrenalin resistance was tested in two groups by injecting, after previous determinations of blood sugar, adrenalin at the rate of 0.15 mgms per kilo of weight. In the albino rabbit the blood sugar was increased 132.7 per cent; in the Belgian hare only 36.6 per cent. Thus rabbits giving a well-marked adrenalin response, give a poor insulin response and vice-versa. Two groups of ductless glands with antagonistic actions control the amount of sugar in the blood; the pancreas and parathyroids tend to check hyperglycemia and the secretion is controlled by the vagus; the thyroid, adrenals and the pituitary mobilize sugar into the blood and are controlled by the sympathetic nervous system. In thirteen albino rabbits, the standardized dose of insulin produced an average reduction of 41.6 per cent of blood sugar, two hours after injection. The standard dose of adrenalin was now given to ten of them and the rise of blood sugar was 132.7 per cent. After thyroidectomy eight of these same rabbits gave a loss in blood sugar of 66 per cent after insulin. These same rabbits, therefore, which were very resistant to insulin before thyroidectomy had severe reactions after the same dose and two died of hypoglycemic convulsions. In the six remaining thyroidectomized rabbits, the blood sugar response was now tested by adrenalin and found to give a rise of but 68.4 per cent as against the 132.7 per cent which they gave before thyroidectomy. Hence the absence or deficiency of thyroid secretion depresses the function of the adrenals and enhances the activity of insulin. Normally thyroid secretion stimulates the adrenals to an outpouring of adrenalin which stimulates the liver through the splanchnic nerve to resease glycogen to the blood. In the Belgian hares the average reduction of blood sugar after insulin was 65 per cent; the rise of blood sugar after insulin was only 36.6 per cent. These experiments were now tried out on nineteen cases each of leucoderma and kala-azar. Adrenalin caused a much higher rise in blood sugar and systolic pressure in the leucoderma cases than in the kala-azar or pigmented group and insulin a much greater reduction of blood sugar in the kala-azar cases than in the albinos and controls. Treatment of the kala-azar

cases by antimony compound showed a much improved condition of the suprarenal glands and a more normal reaction to adrenalin and insulin. *B. K. Ashford.*

MORISON, J. M. W.: Massive Collapse of the Lungs. Brit. Med. Jour. (3632:237.

This paper contains a discussion of a condition that has been described under various names: acute massive collapse of the lungs, post-operative massive atelectasis, post-operative pulmonary atelectasis, obstructive massive atelectasis, acute lobar collapse, apneumatosis, etc. It is found associated with pleural effusions, pneumothorax, bronchial obstructions by growth or foreign bodies, pneumonia, pulmonary tuberculosis, and other inflammatory conditions of the lungs, with certain nerve lesions, and a complication following surgical operations and injuries. In some of these conditions the lung plays a passive part, but in the post-operative and traumatic cases the lung plays an active part and the observations in this paper are limited more or less to this type.

The author's ideas may be summarized as follows:

Collapse of the lung, lobular and diffuse, was well known to the clinicians from the time of Laennec onwards, but William Pasteur was the first to give a clear account of the condition known as massive collapse of the lung. Active lobar collapse must be clearly differentiated from massive collapse of the lung of a passive character.

The function of the musculature of the bronchial tubes may be deranged by various causes acting on the sympathetic and vagal innervation either directly or reflexly. The weight of evidence is in favour of the theory that spasm of the bronchial musculature is the essential feature of active lobar collapse, but the disturbances of the sympathetic innervation must also be taken into account.

In the examination of the chest the more one keeps in mind the possibility of active lobar collapses, the oftener it will be found more especially in children and young adults.—*A. L. Carrión.*

NABARRO, D.: Bacillus Coli Infections. Brit. Med. Jour. (3636):414.

The author makes a thorough study of pyelitis in young children and its relation to bacillus coli. The following conclusions are reached.

Infections with B. coli in children are by no means rare: they

often get well spontaneously; at other times they become chronic or tend to recur. Investigations should be made upon the properties of the organisms present as regards haemolytic power, serology, etc., to discover if these have any bearing on the clinical condition. In the chronic and recurring cases cystoscopy, pyelography and if necessary catheterization of the ureters should be carried out in order to ascertain if there is any abnormality present to account for the clinical condition.

These surgical procedures should not be so long delayed that the child's kidneys are found to be irreparably damaged when the biochemist makes an investigation of the blood urea and the renal function. It will be deduced, therefore, from the foregoing observations that every case of urinary tract infection should be investigated by a team of five—a physician, a surgeon, a bacteriologist, a biochemist and a radiologist, and if the patient should unfortunately die, then also a pathologist to hunt carefully for anatomical abnormalities. If this were always done these cases would be more thoroughly and systematically investigated than in the past, and the results would be better than have hitherto been obtained.—*A. L. Carrión.*

HASTHAUSEN, H.: Treatment of Lupus Erythematosus by Intravenous Injections of Gold Chloride. Arch. Derm. & Syph. 22(1):77.

The favorable results obtained with complex gold compounds in small doses in the treatment for lupus erythematosus have conveyed the idea that one might be dealing with a "metal salt effect" similar to that in the well known experiments by Walbum.

In accordance with this theory, a large number of patients were treated by intravenous injections of gold chloride. The injections were given once a week, and the initial dose, 1 mg., was not increased unless there was no effect after several injections. In that case, the treatment was continued with injections of 5 mg.; and if this dose also failed to produce any effect, the dose was later increased to 10 mg. In this way it apparently was possible to cure or to cause decided improvement in so many patients that the results obtained with gold chloride appear to be fully equal to the results obtained with the complex gold compounds. The effect is more uncertain and capricious than the effect of mercury or bismuth in syphilis and, unlike the latter effect, it is not parallel with the intensity of the treatment. On the whole, the most favorable effect is observed after rather small doses and with intervals of one week between the injections.

Combined treatment with gold chloride and Finsen light has given still better results, which exceed those obtained from entirely local treatment or from exclusively internal therapy. The combination of gold chloride and carbonic acid freezing seems also to have a favorable effect.

Only a few incidental effects have been noticed, and none of these has been alarming. In this respect, gold chloride seems to be more advantageous than the complex gold compounds; and as it appears to be at least equal to these in therapeutic effect, there is good reason why the simple salt should be preferred. Besides, it is much cheaper, and the solution may be prepared in any drugstore. In the concentration employed (0.1 per cent), gold chloride is strongly bactericidal, so that sterilization of the solution is not required.—*A. L. Carrión.*

HARRIS, J. H. and LEWIS, G. M.: Trichophyton Purpureum (Bang) as a Deep Invader of the Skin. Arch. Derm. & Syph. 22(1):1.

The authors present a case showing a sub-cutaneous granuloma covering a part of the right side of the neck. The patient was found to suffer at the same time from scaling between his toes, a condition that had been present for over ten years. Hairs from the granulomatous area, pus withdrawn by syringe under sterile precautions and macerated skin from the feet were inoculated into Sabouraud's medium. Positive cultures showing identical properties were obtained from the three sources. The organism was classified as Trichophyton purpureum (Bang), which is essentially a superficial invader, or an epidermophyton as Castellani prefers to call it (Epidermophyton rubrum Castellani). The case is reported in support of the contention that the organism is a large-spored ectothrix trichophyton, with the ability, in this instance, to produce a granuloma, albeit its commonest habitat is the superficial epidermis.—*A. L. Carrión.*

PECK, S. M.: Epidermophytosis of the Feet and Epidermophytids of the Hands. Arch. Derm. and Syph. 22(1):40.

This paper contains a thorough discussion of epidermophytosis of the feet and its relation to similar eruptions of the hand. The subject is studied from the clinical, histological, cultural, and experimental viewpoints. After a careful consideration of the various possibilities, the author comes to the conclusion that the vesicular and squamous changes on the hands, which accompany so many of

the cases of epidermophytosis of the feet are epidermophytids secondary to the hematogenous transport of living fungi from primary lesions of the feet.—*A. L. Carrión.*

HOPKINS, H. H.: Association of Clinical Neurosyphilis with Various Types of Tertiary Syphilis. Arch. Derm. & Syph. 22(2):232.

In 1,371 cases of clinical neurosyphilis, tertiary lesions occurred elsewhere than in the central nervous system in 187, or 12.9 per cent.

Cardiovascular, bone and joint lesions (if Charcot joints be included) occurred most commonly in tabetic patients. With the exception of this group of lesions, tabetics and paralytic patients and those with early neurosyphilis showed the lowest incidence of complicating tertiary lesions.

Cardiovascular lesions occurred in 98 cases, or 8.1 per cent, being the most frequently observed complication. Colored males were especially susceptible. Bone lesions occurred in 56 cases, or 5 per cent. Lesions of the septum and bony palate and Charcot joint were not observed in the colored female. Cutaneous tertiary lesions occurred in 35 cases, or 2.4 per cent, the predominant lesions being of the nodular ulcerative type. No evidence was found to suggest that these patients spontaneously lose the positive reaction in the spinal fluid. Syphilis of the liver was the most common complicating visceral lesion. Lesions of the mucous membrane were found in 11 cases, or 0.8 per cent.

In this study, negro males were most susceptible to multiple and grave complicating lesions.—*A. L. Carrión.*

RAO. S. SUNDAR: Records of findings of adult *Wuchereria* (Filaria) *bancrofti* in India. Indian Med. Gazette 65(9):481–83 (4 micrographs).

The author discusses the extreme paucity of intact specimens of adult filarial worms in spite of the prevalence of the infestation in various regions. He has obtained from six cases probably more examples than had been previously collected since the discovery of the worm. One of these cases was a lymph-varix, three with abscesses, one with enlarged inguinal glands, the last with a cyst on the elbow. The majority of worms so obtained were alive. From one of the abscesses three worms broke out spontaneously with a considerable quantity of pus. Since then there had been no recurrence of lymphangitis. In another instance that of inguinal gland enlargement microfilariae occurred in abundance in the adult uteri but not in the

peripheral blood. According to the author the constant active movements of the adults when in vitro, if typical of the invader in situ would certainly give rise to considerable irritation.—*W. A. Hoffman.*

BRUMPT, E.: Localization vésicale expérimentale d'oefs de *Schistosoma mansoni* chez une souris. Localization vesicales a *S. mansoni* et rectales a *S. haematobium* chez l'homme. Localization of *S. mansoni* ova in an experimental mouse. Location of eggs of *S. mansoni* in bladder and of *S. haematobium* in rectum of man. Ann. de Parasitologie 8(3–4):298–308.

While the lateral spined ova of *S. mansoni* occur in the intestine, and terminal-spined ones of *S. haematobium* in the bladder, this condition does not obtain in all cases. Brumpt cites one experimental animal, a mouse in the wall of the bladder of which he found ova of *S. mansoni.* By a thorough study of the literature he has shown that ova of *S. mansoni* have been encountered in from 0.29 to 8.42 per cent of the cases of *S. haematobium* infection carefully studied. Most of these are from Africa, mostly Egypt. Twenty-four and twenty-four hundreths per cent of the bladders treated with potash yielded eggs of *S. mansoni. S. haematobium* ova were first found in feces in 1914. It occurs fairly frequently in some section of Africa. One case is recorded from the Western Hemisphere. (Occasionally one is informed that *S. haematobium* occurs in the West Indies because schistosome ova are found in the urine. In all probability the ova are those of *S. mansoni.*—*W. A. Hoffman.*

THEILER, MAX: Studies on the action of yellow fever on mice. Am. Trop. Med. and Parasit. 24(2):249–272.

Theiler has shown that when mice are injected intracerebrally with yellow fever virus from monkeys they frequently die. The infection can be propagated indefinitely from mouse to mouse. Infection in other parts of the nervous system as eye, brain and spinal cord also produces an infection. The virus is strongly neurotropic in mice: it travels along the nervous system. Only mice less than two weeks of age show susceptibility to intraperitoneal infection. Immunity often results from subcutaneous, intradermal, intramuscular and intraperitoneal injection. Immune sera from man and monkey may confer partial or complete immunity. Freezing and glycerine caused gradual deterioration of the virus. Passage through mice apparently tends to make the virus non-virulent for monkeys. The brains of infected mice constantly show an encephalitis.—*W. A. Hoffman.*

CONN, H. J.: The staining of blood and parasitic protozoa. Stain. Tech. 5(4):127–33.

The writer dealing chiefly with Romanowsky stains and modifications traces their evolution from their genesis at the hands of Ehrlich. Their chemical compositions are considered to a certain extent, while uses and methods of application also receive some discussion. The staining of *Treponema pallidum* and vital staining of platelets and reticulated corpuscles are likewise considered. The concluding portion is taken up with Geschickter's method of applying neutral stain to frozen section of neoplasms. In conclusion the article indicates a possible line of investigation for blood stain. An extensive bibliography enables the reader to study in detail all phases of the subject touched upon.—*W. A. Hoffman.*

BELL, M.: Lead poisoning in Children. China Med. Jour. 44(9):885.

The author reports some cases of lead poisoning which have occurred in many countries.

A man of fifty-eight years of age was poisoned by eating the paint from the windowpanes. In Queensland, children were poisoned by being in contact with freshly painted houses especially during the hot or damp weather, while others got poisoned by nibbling paint from painted articles.

Dr. Enmett reported a case which was due to the use of lead acetate on the mother's breasts. It has been discovered that hundreds of sucklings in Japan have been poisoned by the use of powder on the baby or mother's face, neck or breast.—*L. G. Hernández.*

NI, T. G. and BEHBERG, P. B.: On the Mechanism of Sugar Excretion. Biosch. Jour. 24(4):1039.

The authors discussed in this paper the mechanism of glucosuria due to an increased blood-sugar level. The results of a series of experiments dealing with this question are given graphically. They show, that according to the filtration-reabsorption theory, the glycosuria must be the failure of the reabsorption to increase as fast as the filtration of sugar increases with rising blood sugar.

The percentage of sugar in the reabsorbed fluid varies within wide limits. As a factor limiting the reabsorption of sugar, the authors have probably the concentration difference between urine and blood at the site of reabsorption.—*L. G. Hernández.*

MUIR, E.: The Treatment of Leprosy. China Med. Jour. 44(8):749.

The author gives a brief report of the treatments of leprosy that are being used in Calcutta and that have proved the most satisfactory.

The erythrocyte sedimentation test has been found invaluable in leprosy in estimating the degree of patient's general resistance. Leprosy accelerates blood cell sedimentation, except in the earliest stage. In cases where the patients resistance is not improved, small intravenous injections of potassium antimony tartarate, 0.02 gram every two days and oral administration of sodium bicarbonate, a half to one ounce daily in divided half-hourly doses will be of a great value.

Solution (1 to 4 per cent) of sodium hydnocarpate may be injected, intravenously, subcutaneously or intramuscularly.

Hydnocarpus oil and its preparation may be given intravenously at a distance from the lesions, but subcutaneous and intracutaneous injection give better results. Intracutaneous injections are administered by multiple punctures of the epidermis. Intradermal injections may be replaced by subcutaneous infiltration. Intramuscular injections are of great value and may cause less pain, but they do not have the local effect of the other methods.

Hdnocarpus treatment should be increased slowly according to the resistance of the patient, for instance in patients with slow sedimentation and general good health, this treatment should be stressed.

Nerve pain may be relieved by intramuscular injections of adrenaline, or with infiltration subcutaneously along the painful nerve with one half per cent sod. bicarb. with ¼ grain of ephedrine sulphate suspended in it. The pains of joints and bone, which are so common in leprosy can be relieved by intravenous injections of four grains of sodium salicylate in normal saline.—*L. G. Hernández.*

TOMPSETT, S. L.: The Determination of Blood-Sugar. Biosch. Jour. 24(4):1164.

The author discusses briefly the modifications of the earlier methods and many new methods for the determination of blood-sugar.

De Wesselo found that the Lewis-Benedict picric acid method gave thirty to fifty per cent higher results than MacLean's method. Folin and Wus say that their method gives lower results than the Lewis Benedict method. Herbert and Groen found that they obtained much higher results by the Hafedorn and Jensen method when tungstic acid filtrates and not zinc filtrate were used. They also found that

MacLean's method gave higher results with tungstic acid filtrates than with ferric hydroxide filtrates.

Bierry and Moquet and Harned employed a solution of mercuric nitrate in diluted nitric acid but the filtrate they obtained contained high concentrations of sodium nitrate.

The sugar content of tungstic acid filtrates as determined by the Folin and Wu, Folin and Shaffer-Hartmann methods are low—*L. G. Hernández.*

KORENCHEVSKY, V. and DENNISON, M.: The Effect of Cryptorchidism and of Castration on the Chemical Composition of Rats. Bioch. Jour. 24(4):954.

The investigation was made in order to find out whether cruptorchidism and castration produce any change in the chemical composition of the tissues of the rat and also to try a single method of obtaining approximate, but accurate, information about the general chemical composition of the bodies of such small animals as mice, rats or guinea-pigs. The water, solids, nitrogen and fat in the tissues of the rats being investigated, the following conclusions were reached.

The amount of intra-abdominal fat was increased in both cryptorchid and castrated animals, but to a greater degree in the latter The nitrogen content was slightly decreased in both-sided cryptorchid and in castrated rats. This decrease, however, is chiefly due to the increased proportion of fat in bodies of cryptorchid and castrated rats, and therefore is not due to the impoverishment of the bodies of these animals in nitrogenous substances. A slight increase in the content of solid matter was found in both-sided crytorchid and in castrated rats. The increase is due to an increase in the deposition of fat and probably of nitrogenous substances.—*L. G. Hernández.*

CANNAN, R. K. and MUNTWYLER, E.: The Action of Pepsin on Gelatin. Biosch. Jour. 24(4):1012.

Hydrolysis of acid amide linkages is the chief chemical change which accompanies the digestions of protein by the enzymes of the pancreas and intestine. Pepsin is able to accomplish extensive degradation of protein without effecting any significant increase in titratable groups. Protracted digestion of protein is accomplished by regular and orderly increases in acidic and basic groups.

Félix and Harteneck in 1927 and Félix and Muller in 1927 dis-

cussed that the peptic digestion of thymus histone was accompanied by an equivalent increase in acid and basic groups. Waldschmidt-Leitz and Kunstner in 1926 reached the conclusion that the only important chemical changes which accompany peptic digestion are the hydrolysis of peptide linkages. This view has been supported by some other investigators.

Some other observations have been added correlating the chemical changes with certain changes in the physical behavior of the protein.—*L. G. Hernández.*