always above 20, and generally about 30 or more. In a small percentage of cases a nitrogen number below 20 was found, but the patients were either in a remission or in what may be called a stationary state. In such cases a second puncture after an interval of time would probably settle the diagnosis (compare Table I, bis, loc. cit.). Details are given in the paper cited, where will also be found the figures relating to a patient who was examined when in remission, and subsequently, when the disease had resumed its course, the nitrogen number varied accordingly.

One other exception must be pointed out. The wasted brain of the senile dement is well known *post mortem*. Corresponding with this, it is found that patients who have been insane for a long period, especially if of advanced years, have high nitrogen numbers. Such cases would, however, never be confused with cases of general paralysis. Regarded as an aid to diagnosis in general paralysis, the nitrogen number is very much more reliable than any means hitherto proposed, but in the present state of the investigation of the subject it must be taken in conjunction with the clinical observations.

The above reference to Stanford's method is made with a view to promoting its use as a routine procedure in diagnosis, in cases of organic and functional disease, as seen in neurological and psychiatric practice.

REFERENCE.
1 *Lehrbuch der Nervenkrankheiten*.

THE EFFECTS OF A SCORBUTIC DIET ON THE ADRENAL GLANDS.*

BY

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THE effects of a scorbutic diet on the adrenal glands have been studied in guinea-pigs fed on a dietary of crushed oats and autoclaved milk. The naked-eye changes consist in enlargement of the adrenals with increase in their weight and in congestion.

The weight of the adrenals of guinea-pigs dying in consequence of the scorbutic diet is approximately double that of health. Whereas the gross weight of both organs in healthy guinea-pigs ranged between 0.390 and 0.520, with an average weight of 0.467 gram, in guinea-pigs fed on the scorbutic dietary the weight of both glands ranged between 0.850 and 1.150 grams, with an average weight of 0.955 gram. The increase in weight due to the scorbutic diet is even more marked when the weight of the glands is calculated per kilo of *original* and of *final* body-weight.

The histo-pathological changes are haemorrhagic infiltration and disintegration of the cellular elements of the cortex and medulla. These changes occur in animals which may exhibit no clinical evidences of scurvy during life. They are to be regarded as pre-scorbutic in character. The areas of haemorrhagic infiltration are circumscribed, and are situated around the periphery of the adrenal cortex.

The adrenalin content of the suprarenals of guinea-pigs fed on a scorbutic dietary was estimated in five animals by the method of Folin, Cannon, and Dennis. One gland was used for this estimation and the other for histological study. In some cases the right and in others the left gland was used for the estimation. There is no evidence that the organ on one side is more affected than that on the other. On the presumption that each was affected to a like degree the total adrenalin content of both adrenals was calculated from the results obtained with one gland.

It was found that in spite of the fact that the weight of the organs is more than twice as great, the total quantity of adrenalin in the two glands in guinea-pigs fed on a scorbutic diet is less than half that present in healthy guinea-pigs. Similarly the total adrenalin per kilo of *original* body-weight (that is, the weight of the animal before the experiment commenced) is little more than half that of health. When calculated against the *final* body-weight of the guinea-pig the total adrenalin per kilo of body-weight is found to be less markedly reduced—that is to say, the total adrenalin production does not diminish in proportion to the diminution of body-weight. The total adrenalin per gram of gland is less than one-fourth of that found in health. In one guinea-pig in which a coliform organism was cultivated from the heart's blood at autopsy,

the adrenalin content was considerably less than in the other four animals in which no infection was detected by aerobic methods of culture.

A pronounced reduction in the amount of adrenalin in the suprarenal glands is thus found to result in guinea-pigs from a scorbutic dietary of crushed oats and autoclaved milk.

It is of interest to direct attention to the fact that the total adrenalin per gram of gland in healthy pigeons is approximately ten times greater (0.0023 gram) than in healthy guinea-pigs (0.00023 gram). This greater proportion may bear some relation to the fact that uric acid is excreted as such in aves. A further point of interest in connexion with these results in guinea-pigs is the contrast they afford to the great increase in the adrenalin content of the adrenal glands which occurs in pigeons wholly deprived of accessory food factors of all classes. I have found that the adrenalin content of these organs in aves is largely dependent on the class of accessory food factor which is absent from the dietary. When, for example, fresh butter, which contains accessory food factors of the "A" class, is added to a dietary of autoclaved rice, the adrenal glands of pigeons so fed do not, as a rule, contain an amount of adrenalin out of proportion to that found in health; exceptions occur in approximately 10 per cent. of all pigeons so fed. Nevertheless, the evidence so far available, both in birds and mammals, points to the dependence of the functional perfection of the adrenal glands on the adequate provision in the food of accessory food factors of all classes. It appears that lack of factors of the "A" class with excessive production of adrenalin is associated with the occurrence of oedema in aves, and that in guinea-pigs lack of factors of the "C" class, with diminished production of adrenalin, is associated with haemorrhage into the body tissues.

SUDDEN DETACHMENT OF AORTIC INTIMA (SO-CALLED DISSECTING ANEURYSM).

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THE clinical events in the following case may be attributed to the stripping of the aortic intima. From the history of a very sudden onset, without any previous warnings, it may be assumed that the intima began to strip suddenly, that it gave rise to severe shock, and to pain which was referred rather vaguely. The condition of the left leg was probably due to a portion of the loose intima happening to occlude, completely or partially, one of the main arteries to the limb and so shutting off too much blood supply for full muscular metabolism to be carried on; later, collateral channels would be opened up.

As the shock from this stripping nearly killed the patient before his admission, it may be surmised that his sudden death after admission was due to the onset of a second stripping, although two such events could not be traced *post mortem*.

Clinical History.

The patient was a large, well built, muscular man of 65, a plasterer, a steady and respected workman and apparently of temperate habits. He had had no recognized illness since childhood, and was believed by himself and his neighbours to be in hearty good health up to the moment of his sudden seizure.

At 10.30 a.m., after no particular exertion or excitement, he fell to the ground without warning. It is uncertain whether he lost consciousness—bystanders described the occurrence as a "fit"—but within a few minutes he was seen to be conscious and a little later complained of pain in the chest and said that he had lost the use of his left leg.

He was admitted to the General Hospital, Birmingham, about three-quarters of an hour after the event. He was fully conscious, but distracted by abnormal sensations. He complained chiefly of pain and loss of use in the left leg, and also of pain under the sternum; but his chief cause of distress appeared to be some oppressive sensation or conviction for which no words came handy. He felt certain he was about to die. He was restless and pallid, the skin surface was rather cool, the respirations were irregular, rather rapid, and frequently deepened voluntarily. Thus far his aspect was like that of a man suffering from a severe haemorrhage and from pain.

* Abstract of a paper appearing in the July number of the *Indian Journal of Medical Research*. Abstracts of previous papers on the Pathogenesis of Deficiency Disease were published in the *BRITISH MEDICAL JOURNAL* on February 15th, 1919, p. 177, and on July 12th last, p. 36.