

any case the aim of treatment is not to give the largest possible dose, but that sub-reactional dose which is followed by the longest period of improvement.

Experiments are now being carried out to determine the best and most stable colloid for the purpose. The above results also suggest the possibility of obtaining a high degree of immunity from the use of adsorbed prophylactic vaccine without the risk of unpleasant reactions.—I am, etc.,

London, W.1, July 23rd.

H. WARREN CROWE.

Vitamin A Deficiency

SIR,—In an interesting article published in the *Journal* of July 21st (p. 113), bearing the title "A Cutaneous Manifestation of Vitamin A Deficiency," Dr. G. P. Goodwin says that until about a year ago the occurrence of vitamin A deficiency in man had only been diagnosed with certainty when eye changes had been found, and he appears to be supported in this supposition by Dr. Helen M. M. Mackay, who writes a note to his paper.

In 1927 I described a deficiency disease which I denominated the A and B avitaminosis disease of Sierra Leone, and the paper was published in both the *Sierra Leone Annual Medical Report* and the *West African Medical Journal*. In 1930 a fuller account was published in Leitch's *Dietetics in Warm Climates*, and also in pamphlet form, which was announced in this journal. The later work contains the statements that the earliest and most reliable sign of human A-avitaminosis is a characteristic alteration—glazing—of the surface of the tongue. The angles of the mouth take on a white appearance, as is seen in thrush. The scrotum or vulva may become "eczematous," and the texture of the skin of the limbs and trunk is frequently altered by a keratosis which causes it to be dry and rough. All these symptoms are the result of vitamin A deficiency, and heal rapidly on the exhibition of a vitamin A concentrate. Whilst discussing the diagnosis of this avitaminosis the typical cornification of the skin was considered an important early diagnostic point. It may be of interest to recall the significant observation that this condition was most easily studied in the pregnant woman. In fact, the whole complicated syndrome of this avitaminosis disease, which ends in disorders of the nervous system if not given dietetic treatment, was elucidated at the first ante-natal clinics in Sierra Leone in 1927. I have defined the A and B avitaminosis disease as "a disease distinct from pellagra and beri-beri, characterized by lesions of the mucous membranes and skin, especially evident at the mucocutaneous junctions, associated with or followed by disorders of the nervous system, and curable by the addition of cod-liver oil and yeast to the diet."

Dr. Goodwin's patient, a child aged 10 years, suffered from glazed tongue, moist eczema at the left angle of the mouth, keratinization of the skin, and inability to stand up for any length of time, and was cured by the administration of cod-liver oil and a liberal diet. It will be seen that there is a definite similarity between the A and B avitaminosis disease and Dr. Goodwin's case. It is interesting to note in this connexion that in 1930 Dr. H. S. Stannus, in the *Transactions* of the Royal Society of Tropical Medicine and Hygiene, expressed the opinion that the disease I described was the "pellagra fruste" of French writers.

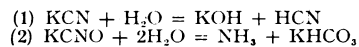
The object of this letter is to draw attention to a syndrome definitely associated with A-avitaminosis, which, although being increasingly recognized in the Tropics, is apparently little known in England. In conclusion I should mention failure or dimness of vision as one of the most baffling symptoms in this disorder—one

most frequently found in school children and pregnant women, but fortunately easily curable if diagnosed in time.—I am, etc.,

Wembley, July 24th. E. J. WRIGHT, M.R.C.S., D.T.M.

Cyanide Poisoning: Rasputin's Death

SIR,—Regarding the recent correspondence on Rasputin and potassium cyanide, I should like to point out that this is a most unstable substance. It is usually a mixture of cyanide and cyanate—also carbonate. When exposed to air it deliquesces, smells of hydrocyanic acid and ammonia, the former being produced from the cyanide and the latter from the cyanate by the action of water:



It is therefore most probable Rasputin was given a mixture of potassium hydroxide and carbonate, neither of which is likely to cause immediate death, and not potassium cyanide at all.—I am, etc.,

Catford, S.E., July 28th.

F. P. WALTON, B.Sc.

Tuberculin

SIR,—Those who evolve the policy that determines the fate of the hundreds of thousands of victims of tuberculosis in the poorer classes should be ready to adopt any method of treatment that has been proved by logical method to be of real value. We must not bow to authorities whose reputations are at stake. Dr. Bardswell and Dr. J. D. Macfie must fight for their stereotyped ideas upon sanatorium treatment, even though this system can never greatly help the poor.

It is certainly true that for the moment artificial pneumothorax *et hoc genus omne* have given the sanatorium system a fresh lease of life. But even granting the value of surgical expedients in resting the areas heavily attacked by tubercle bacilli, so far as the industrial population is concerned sanatorium treatment and surgical expedients are both costly and limited in their scope. True statistics will prove that sanatorium treatment can never greatly help more than 10 per cent. of the sufferers in the industrial classes, while surgical measures cannot help even this proportion of sufferers. What becomes of the remaining 75 to 80 per cent. of victims? That is the phase of the problem which has always interested me. Neither Dr. Bardswell nor Dr. Macfie offers any solution to this aspect of the problem. My solution has never been studied seriously. Dr. Macfie tells us he has used it "extensively" "by carrying about four or five different tuberculins to the dispensaries and sanatoria under his charge." What he did with these tuberculins we do not know. Has he produced any evidence on this ambulatory method? Certainly if Dr. Macfie followed Dr. Bardswell's system of using tuberculin he was doomed to fail.

Long ago I laid down the conditions upon which an investigation into the value of any method of treating tuberculosis by scientific or other methods should be based. After-examinations in five years are indispensable. Recently, in my book *Tuberculin, its Vindication by Technique*, I proved that in the specific treatment of tuberculous diseases of the eye, which can be controlled directly by naked-eye examinations, assisted by instruments, large doses were necessary—often *both* exotoxins and endotoxins—to ensure arrest of the disease for any length of time. Dr. Bardswell was afraid to use large doses, and he failed. I feel justified in concluding that Dr. J. D. Macfie also failed for similar reasons. I am bold enough to say that the evidence in my last book justifies me in asking for a commission of inquiry, com-