professional duties in the homes of cancer sufferers during convalescence; assisting rehabilitation after operations for cancer.

Cancer Research

It is the firm policy of the American Cancer Society to allocate not less than 28% of the collected funds to cancer research. The Society, however, does not own laboratories or conduct research, but serves as an administrator for the money assigned for the purpose.

Applications for grants, fellowships and scholarships are considered and evaluated by the Committee on Growth of the National Research Council of America, upon whose recommendation the necessary funds are made available—usually on an annual basis. Since the exact nature of cancer is unknown, basic research is fostered in many scientific fields, including biology, biochemistry, biophysics, chemotherapy, and in clinical investigations. In some cases the Divisions of the Society also render financial support to local research projects.

Epidemiological studies are conducted to determine the exact conditions under which some cancers are to be found and to discover new factors which may control the disease. The Society also collects accurate statistical data on cancer and renders consultative service in the analysis of such data to research workers in hospitals and elsewhere.

Allocation of Funds

In the annual allotment of the funds collected by the Society, priority is given to educational and research purposes. Only a small proportion is set aside for direct service or financial aid to individual cancer patients.

TRACE-ELEMENT DEFICIENCIES IN PLANTS AND THEIR RELATION TO KWASHIORKOR

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The type of protein deficiency in infants called kwashiorkor has been described by Brock and Autret as 'the most serious and widespread nutritional disorder known to medical and nutritional science'. Various aspects of this condition are being widely studied today from the medical point of view. There is a close relationship between malnutrition and the available sources of food, and the dependence of staple vegetable foods on the constitution of the soil in which they are grown is of particular importance. Brock and other workers in this field have recognized that mineral deficiencies of the soil and of the crops growing on it may have an important bearing upon the health of the people living in such an area. This is especially true in Africa.

Schütte's survey of trace-element deficiencies of plants in Africa clearly showed the very extensive distribution of these deficiencies. In much of Africa the indigenous population lives primarily upon a vegetable diet, which is not supplemented by much animal protein as the diet in most developed countries.

McLester and Darby's contention, that human beings do not suffer from trace-element deficiencies because they have a constant source of the necessary trace-elements in the animal part of their diet, does not apply to large areas in Africa. Thus plant deficiencies of a serious nature may be of direct importance in the study of human diseases.

Trace-element deficiencies in plants may influence the well-being of man in several ways. Firstly, they can cause a serious decrease in crop yields and promote conditions likely to lead to undernutrition and famine. But they can also alter the chemical nature of the crops. This is not generally appreciated. The nature of plant proteins may be altered and the relative amounts of essential amino acids markedly depressed. The amino-acid content of plant proteins may vary and low concentrations of certain amino acids may limit the efficiency of the utilization of the proteins present in the diet. Auffret and Tanguy, and Bigwood, have stressed the importance of deficiencies of essential amino acids in kwashiorkor, while Popper et al. have shown that deficiencies of sulphur amino acids such as cysteine and methionine can produce liver lesions in rats.

The other important aspect of trace-element deficiencies in African diets is that they may seriously reduce the activity of enzyme systems in the body, especially in the liver. In kwashiorkor, as well as in the livers of rats suffering from apo Division: PH.D. they can also alter the chemical deficiencies in the liver and affect the activity of certain enzyme systems. Williams and Elvehjem have shown that methionine concentration can be a limiting factor in the xanthine oxidase activity and also that this enzyme may decrease markedly with a decrease in the non-enzyme liver proteins in rats. Further, Westerfeld and Richert have shown that molybdenum appears to be part of this enzyme, and that its concentration will govern the amount of xanthine oxidase present in the liver of rats.

Iron, copper, cobalt and zinc are all essential constituents of important enzyme systems, which obviously cannot function adequately if only submininal concentrations of these minerals are present. Magnesium is also necessary for proper development, especially in women. As these elements are all frequently and widely deficient in plants, it is very possible that adequate quantities are frequently deficient in the diet of Africans. In infants this is probably accentuated by the fact that the nutritional states of many lactating women is poor.

This alteration in the enzyme systems may be due to deficiencies of amino acids. Williams and Elvehjem have shown that methionine concentration can be a limiting factor in the xanthine oxidase activity and also that this enzyme may decrease markedly with a decrease in the non-enzyme liver proteins in rats. Further, Westerfeld and Richert have shown that molybdenum appears to be part of this enzyme, and that its concentration will govern the amount of xanthine oxidase present in the liver of rats.

Iron, copper, cobalt and zinc are all essential constituents of important enzyme systems, which obviously cannot function adequately if only submininal concentrations of these minerals are present. Magnesium is also necessary for proper development, especially in women. As these elements are all frequently and widely deficient in plants, it is very possible that adequate quantities are frequently deficient in the diet of Africans. In infants this is probably accentuated by the fact that the nutritional states of many lactating women is poor.

It is thus very probable that trace-element deficiencies in plants is one of the important subsidiary factors contributing to the widespread occurrence of kwashiorkor in Africa and that the effect of trace-element supplements in the treatment of this condition may be important.

REFERENCES

ASSOCIATION NEWS : VERENIGINGSNUUS

CLINICAL CASES DISCUSSED AT MEETING OF THE GRIQUALAND WEST BRANCH

At a meeting of the Griqualand West Branch of the Medical Association of South Africa held at the Kimberley Hospital on 26 May 1955, Dr. E. E. Stephens was in the Chair and 20 members attended. Several items of business were discussed.

Dr. H. F. Loewenthal discussed two cases of ureteral transplants in Native females with vesico-vaginal fistula; the first operated on by retroperitoneal approach, the second with a mucosa-mucosa anastomosis by the peritoneal approach. The intention is to re-transplant the ureters in a year's time back into the bladder.

Dr. T. W. Mills demonstrated a man whose foot was mangled in an agricultural machine with multiple fractures. A Symes amputation was done.

The advisability of this method of amputation was discussed from the floor.

Dr. D. E. Stephens discussed a case of neurofibromatosis in a female of 75 with extensive osteitis of tibia, fibula and ankle joint shown by X-ray.

The meeting was closed with a vote of thanks to the Chair.

IN MEMORIAM

HELLMUTH HEINRICH EDUARD SCHULZ, M.A., M.R.C.S. (ENG.), L.R.C.P. (LOND.)

The death took place in Montagu Hospital on 5 May 1955 of Dr. H. H. E. Schulz, aged 59 years, of Ashton, C.P.

Heinrich Eduard Schulz was born in 1896 at Pniel, near Barkly West, and educated at the Grey University College, Bloemfontein. After lecturing for a while in botany and physics at the Potchefstroom University College, he proceeded to study medicine overseas at Leipzig, Amsterdam and finally at St. Thomas' Hospital, London. There he qualified with the conjoint diplomas of the Royal Colleges, and then returned to South Africa. Commencing at Whites, O.F.S., he later practised in the Western Province at Robertson, Porterville and Paarl and finally settled at Ashton.

Dr. Schulz was a keen anthropologist and botanist; he spent many years collecting Dutch remedies and classifying them on a scientific basis. Recently he collaborated with 3 American scientists in studying various species of indigenous South African medica, and an American laboratory has taken over his collection of herbs. The bulk of his anthropological library has been left to the University of the Witwatersrand, and his botanical and art books to the University of the Orange Free State. In 1937 he received the Hamilton Maynard Memorial Medal from the Medical Association of South Africa.

Dr. P. W. J. Keet writes: Dr. Schulz was well known to me over a long period, during which I came into frequent contact with him. He was a man of a peaceful and even temperament, one not easily disquieted or perturbed. He was highly cultured and keenly interested in scientific studies, particularly in physiology, anthropology, ethnology and botany. His extensive library attested to his interest in art, literature and music.

He was persona grata with his colleagues, and respected and revered by all who knew him well, not only for his knowledge of medicine and paediatrics, but also for his idealism in his profession. He had the full confidence of his patients, who valued his serene manner, his tactful and sympathetic approach, and his diagnostic ability. Patients came from far afield to consult him.

His death, after a short illness, during which his colleagues at Montagu and Ashton gave him their constant attention, was keenly felt by his patients and friends.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPARATE EN TOESTELLE

'Pentoxylon' is a new Riker product which provides a novel approach to the problem of angina pectoris. The manufacturers state: Each Pentoxylon tablet contains 10 mg. of pentaerythritol tetrinitrate (PETN) with 1 mg. of Rauwiloid. The rationale underlying this combination is to break the vicious cycle of psychophysicologic events, beginning with the tachycardia attendant on pain and apprehension, which in itself is sufficient to augment dangerously the work demand on the myocardiun and so increase the severity and frequency of attacks.

The Rauwiloid component allays apprehension and induces a desirable bradycardia; the PETN exerts its usual long-acting coronary vasodilation effect, thus beneficially increasing exercise tolerance and coronary flow. Published reports state that true objective improvement, as shown electrocardiographically, can be demonstrated in more than 50% of cases; all cases enjoy good subjective improvement. Pentoxylon is available through the usual channels, while detailed literature and clinical trial material can be obtained on application to the distributors, Riker Laboratories Africa (Pty.) Ltd., P.O. Box 1555, Port Elizabeth.