

Opening Address

J. DE V. LOCHNER

Behalwe dat die tyd vanjaar weer aangebreek het vir die Tweejaarlikse Kongres van die Suid-Afrikaanse Voedingsvereniging, is dit ook die Langenhoven-jaar. Om te bewys dat hierdie volkskrywer reeds 'n paar dekades gelede ook die lofwaardige gewoonte gehad het om in sy eie veld van belangstelling, asook in andere soos die wetenskap, nabetrugting te hou, haal ek graag die volgende strofe aan uit *Aan Stille Waters*: 'Alle wetenskaplike vordering beteken twee dinge: waarneming en gevolgtrekking. Eers moet ons die kennis daarbuite kry en dan moet ons die betekenis daarvan hier binne uitdreneer.'

Hoe toepaslik is selfs hierdie 40-jaar-oue stelling nie op hierdie byeenkoms nie. U sal gedurende die eerskomende 3 dae ruim geleentheid kry om die waarnemings wat 'daarbuite' gemaak is, d.w.s. in die veld en in die laboratorium, 'hierbinne' in die hart en die vergadersaal te dissekteer, van alle kante te beskou, en dan tot die volle 'betekenis' daarvan deur te dring.

THE SCOPE OF THIS MEETING

On studying the programme, it soon became clear that this Congress will provide the ideal platform for examining the real value of some doubtful scientific clichés which have come to be accepted through the years through sheer negligence, and also for studying and evaluating all the new research done, especially during the past 2 years. I was impressed by the tremendous variety of subjects which will be dealt with here and I was especially gratified that the light will also fall on fields of investigation other than the lipid-carbohydrate-protein studies, such as trace elements, vitamins, the psychology of malnutrition, agricultural aspects of nutrition, economical and sociological considerations, as well as the development and provision of public health services and education. This would be in keeping with the spirit of the proposal by Mr J. J. Dreyer of Pretoria made at the last meeting of the South African Nutrition Society and also noted in the minutes of that meeting, and that is, that this year should be a so-called 'Nutrition Year'.

THE OBJECTIVES OF THIS MEETING

As I see it, the dual objectives of this Conference, and for that matter, of every nutrition expert, are the following: (i) the short-term objectives—to review, describe, discuss and locate the extent and causes of malnutrition today as far as is humanly possible; and (ii) the long-term

objectives—having defined the scope of the problem, remedial measures must be decided upon, investigated and implemented as far as is possible.

The extent of the problem of malnutrition (i.e. undernutrition as well as overnutrition) is difficult to determine apart from an over-all impression arrived at during clinical sessions. No official figures for the incidence of the different forms of malnutrition exist today. Only the annual *Report on Deaths* is available, which is presently published about 5 years after the particular year reported on. In such reports, mostly the immediate causes of death are enumerated, for instance 'ischaemic heart disease', but the important contributory factors such as dietary impropriety are not included in the table.

Every clinical scientist knows that many forms of malnutrition do not directly cause death, so that the mortality figure will not necessarily represent the incidence of such examples of malnutrition. A notable exception to this rule, of course, would be the dreaded kwashiorkor and certain forms of gastro-enteritis. Every clinician will also agree that the mortality figure from many forms of malnutrition may not be high, but he will surely confirm that the frightening dimension of the morbidity is an important contributory cause of death. Even if the patients survive the consequences of malnutrition, one is appalled by the number of man-hours lost by absenteeism and low production figures due to subclinical malnutrition and its sequelae.

Having touched on the absence of statistics for the true incidence of malnutrition, one tends to inquire whether the time is not ripe for the establishment of a National Register for Malnutrition. Would this be a viable project and what would the practical implications be? Furthermore, is it not perhaps time to bring to the attention of medical schools and, through them, to the prospective practitioners, to fill in death certificates as completely as possible and to encourage them to describe fully any contributory cause of death, such as the diverse forms of malnutrition?

THE TREATMENT

Having explored the extent of clinical malnutrition and having defined many of the clinical and administrative problems associated with over- and undernutrition, one should follow the argument through by asking: 'What can and is being done to remedy the situation elsewhere—and especially in South Africa?'

Remembering the motto that prevention is better than cure, one should tackle the problem in the way that any intelligent medical student would ordinarily approach any therapeutic problem, and that is by beginning at the very beginning, by stressing prophylaxis or prevention.

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Prevention

At the outset we could study the field of human malnutrition and decide which factors contribute directly or indirectly to the morbidity and even the mortality of these phenomena. I stress the plural form of the noun to emphasise that the concept of malnutrition not only could signify undernutrition, but that it could also mean overnutrition. Having defined these factors, one could set about eliminating them one after the other.

In the first instance, one could note that **socio-economic causes** for both extremes of the spectrum of malnutrition are easy to pinpoint. However, in this respect one must face the reality that it is not always simply that the underprivileged suffer from undernutrition or that the affluent are obese. This may only be part of the over-all picture, but every clinician could tell one that in modern times, not only the quantity of foodstuffs in the diet determine the outcome, but that the quality thereof, as well as the relative contents of the different nutrients, are of the utmost importance. Thus, obesity may be rife among the underprivileged owing to the consumption of large amounts of cheap carbohydrates and *vice versa*.

The improvement of the socio-economic status of the patient would thus only constitute part of the remedy. This measure is always the first thought that comes to mind, but it is also one of the most difficult to implement. I do not pretend to have an instant solution to this dilemma, and it was with gratification that I learnt from the programme that this aspect of nutrition will be discussed.

In this context, it is important to take into account that not only the quantity but also the quality of the nutrients consumed determine the incidence of malnutrition. It would therefore not be practical to provide ample calories alone, without taking heed of the different sources thereof. In this regard I am proud to announce that a scheme for the enrichment of maize meal with riboflavin and nicotinic acid, worked out by a team under the direction of Dr J. P. du Plessis of our National Research Institute for Nutritional Diseases, after years of extensive research, has recently been accepted in principle by the Minister of Health and is in the process of being investigated with a view to its implementation.

Secondly, it could be inquired whether we know exactly what the **biochemical status** of the various forms of malnutrition is. That this is not always the case is proved by the following examples:

(a) A few years ago, a chance observation was followed up, further analysed, and eventually culminated in the description of the presently well-known triad of haem siderosis, scurvy and osteo-arthritis among a group of miners in South Africa.

(b) Recently, interesting observations by our research workers in the NRIND were substantiated by extensive chemical analyses of the vitamin A and vitamin C status of certain groups of miners on a balanced diet. Considerable differences between different tribes were observed and will be investigated further to define the cause of the failure of the relevant nutrients in an adequate diet to

reach the circulation in one ethnic group, while doing so in another ethnic group in the same occupation and environment.

(c) A possible relationship between the vitamin C status and lipid metabolism was postulated by another group of workers in the NRIND on the basis of observations in monkeys in early captivity—an exciting development which may offer a new avenue of approach to the remedy of early atherosclerosis in humans.

Thirdly, even if the biochemical and gross physical examination tell us something about the nutritional status of the individual, we, even in this enlightened century, do not always possess truly elegant but essential **tests** for the evaluation of conditions such as ordinary obesity. Presently we are using height-mass tables and different models of calipers for skinfold measurements in the diagnosis and follow-up of this age-old scourge of humanity. Is the time not propitious for the development of scientific methods for this purpose, such as the measurement of the ratio of body fat to muscle mass?

Fourthly, even if we possess all the knowledge, methods and procedures to investigate all the different forms of malnutrition, and even if we succeed in improving the socio-economic status of everyone in South Africa, even if we enrich all the foodstuffs under the sun, then these measures may meet with dismal failure if we do not inform the public adequately. The proper and effective **dissemination of information** is a particularly difficult problem in this country, owing to the presence of diverse ethnic groups in the broad population. Not only is it a question of language barriers, but cultural and tribal customs play their respective parts in complicating the issue. As a matter of interest, I might mention that on a recent trip to Ovambo I was told that it was unheard of for an Ovambo woman to eat an egg because of tribal taboos.

This potential and existing lack of communication between different ethnic groups at this level can be foreseen, allowed for, and also prevented by the correct approach. But what do you do when the man in the street, with the same cultural background and speaking the same language as yourself, either does not believe what you tell him, or worse still, does not care to adjust his dietary habits until it is too late? Will it remedy the situation if you blandly state that a high consumption of sucrose may elevate his triglycerides, or that cigarette smoking will aggravate his peptic ulcer symptoms or precipitate another myocardial infarction? This whole question of effective communication and motivation warrants further analysis, and I firmly believe that a team, chosen especially for such a purpose, should also avail themselves of the advice of a clinical psychologist or a psychiatrist.

The MRC has felt the urgent need for evaluating the dissemination of information on nutrition, and therefore a committee of experts in this field has been appointed to investigate the present situation and to make recommendations accordingly. This undertaking carries the blessings of the Department of Health as well as the Human Sciences Research Council, and I am sure that with their contribution, the final report will be something to look forward to.

The terms of reference of such a committee would include a study of the relative value to the public of information emanating from the scientific field and that put out by the private sector in promotion campaigns for patented foodstuffs (especially those consumed by infants and children). Although the approach of these two groups may be different, the one being subjective and the other usually objective, their views may not be mutually exclusive. However, from recent publications in the scientific press it is evident that the whole question of infant feeding bears closer examination. For instance, it was pointed out in a leading article in the *British Medical Journal* of 30 June 1973, that the early introduction of a mixed diet probably had something to do with the high incidence of hypernatraemia, which, of course, could be of vital importance during the early phases of gastroenteritis with dehydration. Epidemiological research on this problem is called for—and I see no reason why this cannot be done in South Africa. The editorial quoted above concludes with the following remark: 'The commonest deficiency disease of babies in this country (England) is lack of water'. I am sure that this thought has not crossed the mind of many present here today!

It has been said that now that we know what the deficiencies in the diet are, we only need to supplement it with the desired constituents and stop wasting research funds on nutrition status surveys and further studies in the field. I maintain that this may be true for other countries abroad, but not for South Africa. We have here a true 'living laboratory' which lends itself to the study of the effects of the adoption of the Western culture and way of life on the physical and also the mental development of different peoples. We have a wide spectrum of groups at different stages of progress (or is it degeneration?), and

if we do not study them now and compare the relevant findings with those obtained in Western countries, the opportunity may be lost during the next decade or two. Not only will the scientist lose a potentially fertile field of endeavour, but humanity in general will have lost the opportunity of benefiting from objective and scientific analyses and recommendations based thereon.

The MRC aims at meeting this challenge and others by subventing the activities of the NRIND by means of an annual grant amounting to about R700 000 and also by contributing research funds of about a further R100 000 to the research activities of some 30 experts all over South Africa. I am also grateful for the opportunity which was afforded the MRC of contributing towards the cost of bringing two eminent nutrition experts from the USA to enhance the scientific value of this meeting and to enrich the discussions which are being planned. I am sure that we can learn much from them, just as I am sure that some of the research findings to be reported on during this meeting may be welcome news to them.

As a physician, I am looking to the nutrition experts and research workers for their important contributions towards the solution of many clinical problems. To them it must indeed be exciting to be active in a field of research where the scope of contributions to be made is virtually unlimited. Besides the problems of over- and undernutrition in general, one could hope for valuable investigations concerning the aetiology and treatment of obesity, the correlation between diet and early atherosclerosis, the significance of relative diet restriction on the long-term survival of individuals, the true clinical importance of the consumption of cyclamates and refined sugar, and the influence of early deprivation on later intellectual development—to mention but a few.