

## EDITORIAL : VAN DIE REDAKSIE

## THE 1963 MEDICAL CONGRESS

This year, during the week 21 - 27 July, the 44th South African Medical Congress will be held in Johannesburg, and the Organizing Committee are to be congratulated on the excellence of the programme that has been arranged.

The scientific meetings will be extremely comprehensive, with a large number of papers, the full list of which will be published in the final Congress circular in the *Journal* within a few weeks. Apart from the usual sectional meetings, there will be four combined meetings, and these will each deal with topics of interest to members of a number of different groups. They will comprise *Acute respiratory failure*, *Carcinoma of the head and neck*, *Acute renal failure* and *Virus diseases*. We are pleased to note that the idea of having a number of combined meetings, which proved so popular at the 1961 Cape Town Congress, is being made a feature of the present Congress as well. By choosing subjects for these meetings with care, it is possible to encompass matters that are the concern of doctors in many different fields. As we said at the time of the previous Congress, this can emphasize the basic unity which exists in medicine despite the tendency to specialization and now to super-specialization.

Carefully chosen, too, are the subjects for the plenary sessions at this year's Congress. The first in the week will be on *Industrial Medicine*, and the second on *Genetics*. In a country such as ours, where industrialization is proceeding so rapidly, the health of a large part of the community is bound up with industry, directly or indirectly. There are many diseases of great importance in this sphere—in South Africa, particularly, the pneumoconioses spring to mind as an important factor in both industry and mining.

Transport is closely associated with industry, and we are pleased to note that among the distinguished guests at this year's Congress will be Dr. L. G. Norman, Chief Medical Officer of the London Transport Executive. He will read a paper at the Industrial Medicine plenary session and will also deliver the Congress Public Lecture, when his subject will be 'The prevention and control of road traffic accidents'. There are few people in the world today with Dr. Norman's comprehensive knowledge of road traffic problems, and he is eminently suited to give this timely address.

The science of genetics is rapidly becoming an important part of medicine. It impinges on many specialties and interests, and is most suitable for discussion at a plenary session. Chromosome studies, to take but one facet of genetics, have grown in importance with almost unbelievable speed. The chromosome pattern has been elucidated in many conditions, and much that was obscure before in the hereditary or congenital field has now been made clear. Another aspect of genetics is genetic counsel-

ling, which is taking its place as a specialized service that doctors can perform for their patients, and the active unit at the Johannesburg General Hospital has done much pioneering work in this regard.

We are particularly pleased to note that a new section among the group meetings is to devote its time to discussions on medical history. There is no doubt that we as doctors tend to take much in our past for granted and to accept many of the wonders of our present 'age of science' in medicine without considering the deep roots from which our heritage has sprung. It is therefore gratifying that over the past two or three years considerable interest in medical history has developed in South Africa, with active groups at work at least in Johannesburg and Cape Town. We are hopeful that the reading of papers on medical history at Congress, and their later publication, will consolidate the groundwork that has been laid.

While the scientific meetings are the *raison d'être* of the Congress, the many exhibitions and social functions add spice and variety to a full week. The 1963 Congress will be no exception to this rule. A fine scientific exhibition is promised, with a special exhibit sent out by the Wellcome Museum of Medical Science in London. There will be the usual hobbies exhibition, which should reach the same high standard of diversity and technical skill as its predecessors, while the Medical Exhibitors' Association will be showing their products once more, but this time as guests of the Congress. This generous gesture on the part of the Organizing Committee will add still further to the already cordial relations existing between the medical profession and the pharmaceutical distributors.

A Congress Ball, a theatre and coffee party at the Johannesburg Civic Centre, a Mayoral reception, the sports afternoon on Thursday 15 July, and many attractive entertainments for the wives and relatives of doctors attending Congress, will all add to the interest and enjoyment of the week.

For the first time for some years, Congress will be open to doctors who are not members of the Medical Association. While this move is a welcome one, allowing as many as possible to participate in this national medical event, it is to be regretted that it was found necessary. That Federal Council was requested to make this special provision points to the fact that there are many medical men, the majority in full-time occupations, who are not members of the Association, but whose presence at Congress will give strength and added importance to the occasion.

Let us make no bones about it. We could well do with such men in the Association. We could well do with all South African doctors in the Association. In the particular context of Congress, the Association goes to great lengths to organize a forum for South African doctors to give

their colleagues the results of their research and clinical work. Mind can meet mind, and all can come away the richer for it. We realize that were it not for the contributions of our eminent medical men, our Congresses would not be as successful as they usually are. But it cuts both ways—if the forum were not made available, the papers could not be read.

So we take this opportunity of appealing to those colleagues of ours who will be present at the Congress, but

who are not members of the Association, to consider whether they do not owe the Association their membership for the opportunity they have of participating in the rich feast of medical fare that is provided at our biennial Congresses. The Association can offer them much more in addition, as it offers all its members.

However, members or not, we are sure that all doctors and their wives who attend the 1963 Congress will find it a stimulating, enjoyable and memorable week.

### WAT IS 'N STAFILOKOK?

Stafilokokke is ongetwyfeld sedert die vroegste tye vir die mens 'n voortdurende bron van besmetting. Bloedvinte of pitswre word reeds in die Bybel vermeld, en hoewel dit in ou tekste nie heeltemal duidelik is of stafilokokkale infeksie definitief aanwesig was nie, is die waarskynlikheid tog groot dat selfs sommige van Job se kwale aan stafilokokke toe te skrywe was. Vandag kan ons daarvan seker wees dat enige persoon bo die ouderdom van ses jaar reeds met stafilokokke in aanraking was. Indien hy gelukkig is, ontstaan 'n wondbesmetting wat vanself herstel, of 'n voedselvergiftiging wat altyd van kort duur, maar tog baie onaangenaam, is. Ander mense ly aan herhaalde pitswre of aan chroniese osteomiëlitis en dikwels word 'n hospitaal, wat veronderstel is om 'n plek van genesing en herstelling te wees, in werklikheid 'n gevaarlike bron vir, onder meer, stafilokokkale besmettings. Dit gebeur in die era van antibiotika wanneer die meeste, onlangs nog erg besmetlike, siektes met sukses bestry word, en dit partykeer moeilik word om selfs nog 'n demonstrasie-geval vir studente-opleiding te vind. Derhalwe mag die vraag 'wat is 'n stafilokok?', of beter 'hoe kom dit dat stafilokokke nog so 'n groot probleem daarstel?', geregverdig wees.

Stafilokokke—hierdie klein koeëlvormige organismes van slegs een  $\mu$  middellyn—is vir meer as honderd jaar bekend, maar dit is interessant dat hulle altyd misken was en waarskynlik selfs vandag nog nie in die regte lig gesien word nie. Botaniese navorsingswerkers het hulle reeds teen 1860 goed geken, maar slegs as ontwikkelingsvorms van ander stafvormige bakterieë beskou. In 1874 het die beroemde snykundige, Theodor Billroth, van Wenen, stafilokokke beskrywe. Hy het hulle dikwels in wondetter van sy pasiënte gevind, maar selfs Billroth het nog geglo dat hierdie kokke in stafies kan verander, en volgens sy mening was hulle vir alle septiese verskynsels verantwoordelik. Derhalwe het hy hulle *Coccobacteria septica* genoem. In 1878 sien Robert Koch kokke in etter, maar ondersoek dit nie verder nie. In 1880 kweek Louis Pasteur stafilokokke in sy *bouillon* en gaan die probleem ook nie verder na nie. Maar die kliniese belang van stafilokokke kon nie misken word nie en so kom die volgende ontdekkings vanuit die kliniese rigting: In 1881 vind die Skotse chirurg, Ogston, in Aberdeen reëlmstig kokke in absesse en noem dit in 1882 stafilokokke; maar Friederich Julius Rosenbach—'n chirurg in Göttingen—was, in 1884, die eerste om daarin te slaag om die stafilokokke suiwer te kweek, en hy het onmiddellik gevind dat daar verskillende soorte is, naamlik, die wit *Staphylococcus albus* en die goudgeel *Staph. aureus*. Een jaar later, in 1885, het Passet dan die meer seldsame *Staph. citreus* beskrywe.

Stafilokokke produseer 'n hele reeks van ensieme en toksiene. 'n Paar daarvan word virulensie-faktore genoem. Moontlik mag hierdie sogenoemde virulensie-faktore niks anders as maklike kenmerke wees nie wat dien om stamme, wat siektesimptome uitlok, te identifiseer. Dit mag moontlik wees dat stafilokokke 'n tot nog toe onontdekte toksien bevat, wat definitief 'n hoofrol speel. Daar is 'n hele aantal toksiene en ensieme bekend waarvan ons hier slegs die volgende wil noem: Eksotoksien,  $\alpha$ -,  $\beta$ -,  $\gamma$ -,  $\delta$ -,  $\epsilon$ -hemolisiene, drie leukosidiene, enterotoksien, koagulase en hialuronidase.

Die eksotoksien is filtreerbaar, hitte-labiel en dodelik vir proefdier, en word derhalwe ook letale toksien genoem. Met formalien behandel, vorm dit 'n toksioëd wat gebruik kan word om antitoksiese immuniteit te vorm. Die eksotoksien is 'n saamgestelde komplekse substansie wat veral belangrik is in kinders, waar dit tot die ontstaan van akute hematogene osteomiëlitis bydra. Van die hemolisiene bevat die eksotoksien die  $\alpha$ -hemolisiene. Die  $\epsilon$ -hemolisien kom slegs by die apatogene *Staph. albus* voor. Alle stafilokok-hemolisiene tas skaapbloed aan. Prakties is dit derhalwe belangrik om skaapbloed-media in laboratoria te gebruik. Die meeste menspatogene stafilokokke bevat die  $\alpha$ - $\delta$ -hemolisiene. Die  $\delta$ -hemolisien bring ons na die leukosidiene, wat antigenies en meer hitte-labiel as die eksotoksien is. Drie leukosidiene is vandag bekend: (1) Neisser-Wecksberg-leukosidien (=  $\alpha$ -hemolisien; tas net konyn-leukosiete aan). (2) Panton-Valentine-leukosidien. (3) Leukolisien= $\delta$  hemolisien. Die laaste twee tas die menslike leukosiete aan. Die derde is identies met  $\delta$ -hemolisien. Al drie leukosidiene is antigenies verskillend.

Die enterotoksien word slegs van 'n paar stamme gevorm wat veral lede van die faag-tipes 42 D en van die faag-groep III is. Hierdie gif is verantwoordelik vir stafilokokkale voedselvergiftigings, die mees algemene voedselvergiftigings wat voorkom. Ons ken die enterotoksien, maar hoe dit werk, is onbekend. Dit mag (a) 'n perifeersensoriese aksie toon, (b) op die gladde spiere van die dermkanaal werk, (c) direk op vomeer-reseptore ageer, of (d) —en dit is die waarskynlikste—'n direkte aksie op die maagslymvlies hê. Belangrik is dit dat die enterotoksien vir 30 minute teen kook-hitte weerstand bied.

Die koagulase is 'n proteïen, wat deur stafilokokke afgeskei word, en sitraat- of oksalaat-bloed (plasma) laat stol. Hierdie stolsel omhul die stafilokok en beskerm dit teen fagositose. Op dié manier is stafilokokke, veral in die begin van 'n besmetting, weerstandig teen die liggaam se afweermeganisme. Koagulase word vandag as kenmerkend van patogene stafilokokke beskou, maar die koagulase

self het niks met patogenisiteit te doen nie. Dit is 'n feit dat slegs koagulase-negatiewe stafilokokke vinnig deur die normale afweer-meganisme van die menslike liggaam vernietig word.

Die verspreidingsferment, hialuronidase, word deur die meeste patogene stafilokokke afgeskei, en tog is die verspreidingsneiging van die meeste stafilokokke nie groot nie. Die makro-anione wat deur hialuronidase vrygestel word, t.w. chondroitien-sulfaat, hialuroonsuur, heparien en nukleinsuur, blokkeer die werking van stafilokok-ensieme binne die liggaam. Dit beteken dat die hialuronidase nie die stafilokok self begunstig nie, maar wel die verspreiding van meegaande kieme, bv. virusse of aktinomisete,

bevorder en gevolglik is die stafilokok 'n ideale kiem vir 'kollektiewe-besmettings'.

Ons het 'n paar belangrike ensieme en toksiene genoem. Dit dien nog om vermeld te word dat stafilokokke baie vinnig deur mutasies varieer, wat die groot probleem van wisselende antibiotiese gevoeligheid verklaar en oorsprong gee aan hospitaalstafilokokke.

Mikrobioloë het 25 jaar gelede reeds algemeen gedink dat alles oor stafilokokke bekend is, maar vandag staan ons nog aan die begin van nuwe insigte en ontdekkings wat dringend benodig word vir die bestryding van hierdie dreigende kiem.