

THE DENDRITIC PATHOLOGIST*

PROF. J. F. MURRAY, *South African Institute for Medical Research, Johannesburg*

The upholding of tradition is important and sometimes difficult—no matter whether one is 3rd, 30th or 300th in the line of succession—and the tradition of the President's address is no exception to this rule.

Older members have watched the growth of our Society; they have suffered with its growing pains, they have seen its tendency to fission, and they have witnessed its reunion. Now the Society is firmly established and is not only national but international in its affiliations. This is witnessed by the fact that we are now a Division of the International Academy of

Pathology, that we have honoured and distinguished guests from abroad with us today, and that many of our members have attended and participated in international congresses and have been appointed members of international committees and organizations. This is no parochial pride. It is a simple statement of the esteem in which our members are held at home and abroad. This esteem is firmly based upon solid achievement in the world of science.

All this has been achieved by successive generations of pathologists who, even as they scaled the heights, were undergoing a progressive metamorphosis. At one time we were all 'pathologists', but my predecessors in this office have em-

*Presidential address delivered to the Annual Congress of the South African Society of Pathologists, 4 July 1968.

phasized the steadily increasing degree of specialization in pathology. With every year that passes, we see this ultra-specialization increasing. In the academic field this can only be to the benefit of pathology as a whole, but, for the individual, it can so restrict his interests that he can lose touch even with closely related fields. This is exemplified by the very nomenclature we use. We are no longer content to be pathologists; we are now neuropathologists, gynaecological pathologists, dermatopathologists, cytopathologists and so on—not to speak of the infinite divisions of the fields of microbiology, chemical pathology and haematology. How, then, are we to keep in contact with one another and continue to know something of the language (or is it sometimes jargon) the other speaks? Here, of course, is where our Society becomes of great importance and where I may, for the first time in this address, make use of its title, 'the dendritic pathologist'. Lest specialization has already proceeded so far that there are microbiologists or others among us who have forgotten the meaning of the word 'dendrite', let me remind them that it is a branching protoplasmic process of the nerve cell which conducts impulses towards the cell. You will recall that it forms a synapse with the terminal arborizations of the axon from where the impulse comes. One major function of this Society is to facilitate the passage of information (and what is this but an impulse?) from one member to another. Thus, at these meetings, with our dendrites out and receptive, we gather a wide range of information which would otherwise possibly pass us by.

But there are other situations in which we can imagine the dendritic processes of pathologists facilitating communications. Let me briefly mention just 5 of them:

Contact with Other Fields of Medicine

Probably no other branch of medicine, except general practice, has so many contacts with so many facets of medical knowledge. One can imagine certain of our ultra-specialist clinical colleagues who never have contact with, and may never even meet, on a professional basis, their equally ultra-specialist clinical colleagues in other fields. But what clinical meeting, in whatever specialty, is complete without someone to deal with the pathology of the case or condition in question? Here I use the term pathology in its broadest connotation. In this sense it is true to say that there is no clinical field with which the pathologist is not linked. Reaching out in all directions into the rich clinical field around him, the pathologist is concerned in some way or another with every imaginable clinical condition. It is for this reason that the practice of pathology is so rich in its rewards. Without the existence of cellular or functional pathology there could be no clinical disease. Therefore the dendrites of the pathologist must reach out on all sides and make contact with all his clinical colleagues. Although not all of you may agree with me, I strongly believe that no pathologist is realizing his full potential if he remains secluded in his laboratory and has no contact with patients or with the clinicians who are responsible for them. It is true that the furtherance of experimental pathology is important, that the pursuit of the most intimate details of molecular structure and function is vital, and that the ardent pursuit of knowledge for its own sake is to be encouraged; but behind and beyond and above all these aspects of laboratory activity there lies the patient. It is for his sake that we pathologists exist. I would urge our younger members to remember this and not to withdraw their dendritic processes so that they live in an ivory tower of magnificent seclusion out of touch with the very reason for their existence—the patient and the clinicians.

Contact with Paramedical Fields

The day when any doctor was completely self-sufficient is gone. No longer can he act as pharmacist, anaesthetist, obstetrician, laboratory technician, surgeon and physician all rolled into one. Not only has he become more specialized in a particular field of medicine, he has also become dependent upon a vast array of paramedical personnel. The modern radiotherapist must have a physicist in his team, the surgeon requires expert technical assistants to man his bypass apparatus, the physician calls in physiotherapists and occupational therapists

to assist him, and every clinician depends upon a scientifically trained and expert nursing staff. The pathologist is no exception. Gone is the day when, with a microtome, an incubator, a waterbath, a centrifuge, a colorimeter and a microscope, he could, single-handed, carry out all the technical procedures required in the fields of bacteriology, histopathology, biochemistry and haematology. Today he depends upon an army of highly-trained technical assistants to prepare his histochemical sections, to run his cell counters and auto-analysers, to supervise his scintillation counters, to use his atomic absorption spectrophotometers and to carry out all the complex technical procedures which are part and parcel of the modern laboratory. The pathologist and the laboratory technologist are mutually dependent and it is our duty, as pathologists, to be sensitive to, and aware of, the aspirations and needs of those with whom we work so closely. Our dendritic processes must be constantly alert to inform us of the changing needs in status, training and working conditions of these, our closest colleagues.

Contact with Changing Methods in the Laboratory

This is a field in which we, as pathologists, must be constantly on the alert. At one time it was relatively easy to design a laboratory. All laboratories had the same general design and one could be fairly certain that a laboratory design would still be functioning pretty satisfactorily 10 years later. Today, we must have all our dendrites out to inform us of the changing patterns which will be required in our laboratories as new types of apparatus become available. We must be aware of the need to make our laboratory designs more fluid so that new types of apparatus can be accommodated in the future without involving major structural alterations. The myriad biochemical tests which occupy a vast amount of bench space today will, we may assume, be handled by automated or semi-automated apparatus in a fraction of the space tomorrow. Here, too, we encounter the problem of how to organize the work in such a way that the 60 or 100 results per hour achieved by automated apparatus will not be slowed down to 10 or 20 per hour by a continuation of the traditional methods of the typing-pool and the ever-so-slow messenger boy. Online data processing, print-out devices in the wards and all the paraphernalia of the modern electronic age are at our disposal, and our dendritic processes must make us aware of them so that, when the automated apparatus of tomorrow becomes available to give us, not 60 or 100, but several hundred results per hour, we shall be ready to make use of it and to eliminate a large part of the delay which now exists between receipt of a specimen and the despatch of a report. Sensitive dendrites on the part of pathologists are, of course, of little value if the dendrites of those who control the money-bags are insensitive. Perhaps in this situation we require to make use of our axonal terminal arborizations and send down an impulse with an impact resembling a rocket which will set the dendrites of the finance controllers jangling and even, perhaps, achieve some action.

Contacts in the Field of Education

With the constantly changing pattern of laboratory practice and the ever-increasing specialization and tendency to compartmentalization of pathologists, it is essential, especially for those in senior positions, to sense the ever-changing needs of those who seek training in the professional or technical fields of pathology. Both my predecessors in this office made reference to the determination of the Society to keep out of medical politics. This is a decision of which they heartily approved and I trust sincerely that the decision will never be altered. They both emphasized, however, that the educational field should not be regarded as part of medical politics. With this I most definitely agree. There is no body more suited than this to give sound advice on training programmes for pathologists and technicians. Unfortunately, our Society has, as yet, expressed no opinions in this field. Medical Council, university medical schools, the Department of Education, the College of Physicians, Surgeons and Gynaecologists of South Africa and the Institute for Medical Research are all, in one way or another, involved in training programmes and examination systems for specialist pathologists and registered medical technicians. Many of us, in various capacities, are aware that these

LKW 36

(Byvoegsel—Suid-Afrikaanse Tydskrif vir Laboratorium- en Kliniekwerk)

bodies would welcome an expert expression of opinion from a Society such as this, but our dendrites have been asleep. Individual pathologists and various organizations have expressed opinions, but from this Society there has been no advice. We have tended to eschew this field. It is my personal opinion that, by so doing, we are failing in our duty to the field of pathology. If our Society does not take an active interest we may see the emergence of training programmes and examination systems of which we do not approve. If so, we have only ourselves to blame.

It is all very well to say that Medical Council, the Department of Education or the College could have approached the Society if they had wished to do so. I would suggest that the initiative should rest with us. We should, I believe, have a standing committee charged with the duty of constantly surveying the training needs of pathologists and technicians in South Africa and accumulating information on this subject from abroad. It should be a committee with all its dendrites hypersensitive at all times, aware of the searchings (and sometimes blunderings) of those organizations each of which handles some aspect of the training, examination or registration of pathologists and technicians. No one organization or body is responsible for the whole gamut from recruitment to registration. We alone, although not responsible, are intimately concerned with the whole gamut of this field. I would strongly urge that our Society become actively engaged in it. The quality of the papers and the attendance at these meetings have shown the stature to which our Society has grown.

Later this month the South African Society of Medical Technologists will hold its first national congress in Johannesburg. The technologists' society has taken an active interest in the training programmes and education of its members. I believe that we should do likewise. I further believe that we should not confine our interest in this field to pathologists; I am sure that the Society of Medical Technologists would welcome our cooperation.

Contacts in a Multiracial Society

This is an aspect of which I need say little. Everyone concerned with medical research in South Africa is well aware of the fact that sooner or later, whether his subject be isoenzymes at one end of the scale or gross morbid anatomy at the other, he will end up with an interest in the differing patterns in the different race groups. So marked are these differences and so valuable are they as pointers to aetiology and pathogenesis, that it is almost true to say that South Africa is a vast natural laboratory set up for epidemiological research—epidemiology in its broadest sense and not in its strictly microbiological connotation. The dendritic stimulus which urges us to investigate racial patterns of disease is so universal in South Africa that we might well be the envy of other, less fortunately placed, workers.

The concept of the 'critical mass' for the generation of an atomic explosion has been made familiar to us by the nuclear physicists. It seems probable that cross-fertilization of minds is a major factor in the generation of successful fields of research and it is effective because it creates a 'critical mass' of mental activity which leads to new ideas, new concepts, new projects.

This, I believe, is one of the major benefits of the annual congress of our Society. It is one of the few occasions on which a sufficient number of us meet to have a real interchange of ideas across the borders of the various aspects of pathology in which we work.

It gives me sincere pleasure, as your President on this occasion, to pay tribute to the high quality of the papers presented at this Congress and to affirm, with sincere conviction, that, so long as our pathologists have their dendritic processes fully extended and in contact with the various fields which I have briefly outlined, our chosen branch of the profession will remain, as it is now, in the forefront of the advance of medical knowledge in South Africa.