British Medical Association

ONE HUNDRED AND NINETEENTH ANNUAL MEETING, LONDON, 1951

President's Address

SOME IMPRESSIONS OF AN OPHTHALMOLOGIST

BY

A. W. S. SICHEL, M.D., D.O., D.O.M.S.

Honorary Consulting Ophthalmic Surgeon, Groote Schuur Hospital, Capetown

On this occasion, without doubt the most momentous event of my life, my first duty is to thank the Council, and through it the British Medical Association, for the great and unique honour conferred on me by my being invited to become its President for the ensuing year. Although the invitation to attend this meeting came perforce at short notice and placed me in a difficult position in making the necessary arrangements, my wife and I are delighted to be with you in London and deeply appreciate the very warm welcome extended to us.

It was not without considerable hesitation and qualms, and after most serious consideration, that I agreed to accept the Presidency. By the cancellation of the Joint Meeting, due to be held in Johannesburg next month, all arrangements with regard to the appointment of office-bearers nominated by either Association in my opinion automatically fell away, including the office of the President-elect, who was to preside at the Joint Meeting. It was therefore with feelings akin to amazement that I received the invitation, despite the circumstances, to become your President. As President for the time being of the Medical Association of South Africa, I can but interpret it as a most wonderful and sporting gesture extended to my association and to the medical profession of the Union of South Africa; for that reason alone I had no alternative but to assent. Without a passport Mahomet could not go to the mountain and so, strange to relate, the mountain has had to come to Mahomet.

Prior to the establishment of the first school of medicine in South Africa, that associated with the University of Capetown, all South Africans desirous of entering the medical profession were compelled to go overseas to pursue their studies, and by far the greatest number entered the medical schools of the United Kingdom and Ireland. Owing to the increased facilities now available in the medical faculties of the Universities of Capetown, the Witwatersrand, and Pretoria, the number of undergraduate students proceeding overseas is greatly diminished, but there still are large numbers of doctors who, as in the past, are dependent for postgraduate training on the institutions of the Old Country. On behalf of all my colleagues who have ties of one sort or another with your universities and postgraduate schools, I take this opportunity of expressing our deep gratitude for all that the British Isles has meant to us and for what it has given to South African medicine.

A Paradoxical Position

Standing here at the moment I find myself placed in a somewhat paradoxical position, one to which only

Pooh-Bah himself could do justice, in that I, as President of the Medical Association of South Africa, must now convey to myself, as President of the British Medical Association, the cordial greetings of the Medical Association of South Africa, and the hope that the bond of affiliation that binds us will constantly be strengthened in the years to come. I am sure that it will be with your full approval that I, as President of the British Medical Association, convey to myself, as President of the Medical Association of South Africa, a message of reciprocal greetings to take back to South Africa on my return, and better luck on some future occasion.

The cancellation of the Joint Meeting is a grievous disappointment to the members of both Associations, but this is not the occasion to comment on the causes that led to its abandonment. It will suffice for me to say that we in South Africa very much regret having been deprived of the opportunity to welcome and entertain our distinguished visitors. Had circumstances been otherwise I am sure that your visit to the Union would have been most pleasant from the social standpoint, valuable and informative on the scientific side, and would have afforded you an opportunity of assessing for yourselves the many problems peculiar to the country which confront the Medical Association of South Africa in the exercise of its functions and the furtherance of the objects for which it was established.

It now devolves on me, a duty I do not relish quite so much, to deliver the President's Address. My hesitation is much increased by the presence in the audience of so many of the fair sex, but I am encouraged by bearing in mind the words of W. S. Gilbert, "When a man's afraid a beautiful maid is a cheering sight to see." The choice of a subject has given me much food for thought. The temptation to wander into the broad fields of medicine is very great, especially at the present time when so much attention is being focused on such topics as the relationship of the medical profession to the public and the State, the medical curriculum and postgraduate education, the status of the general practitioner, and the rapidly changing economic conditions to which the members of our profession are being forced to adapt themselves.

Notwithstanding the lure of these aspects of medical practice, I have decided to confine myself to the subject about which I am most qualified to speak—namely, ophthalmology. This specialty, in some respects the Cinderella of medicine, does not often get the opportunity to appear in the limelight on big occasions, and so, in the exercise of my prerogative and as a gesture to my fellow ophthalmologists, I shall pose for the nonce

as Prince Charming. Having in mind the injunction that my address should not be of a highly technical character, I propose to pause at the point I have reached after a period of more than thirty years spent in the practice and teaching of ophthalmology and, looking back, give you some impressions of what experience has taught me. My distinguished predecessor in office addressed you last year in Liverpool with eloquence which I cannot hope to emulate. While making "no pretence to intellectual eminence or scholarship sublime," I trust that my effort on this occasion will not have sunk in your estimation to the sump level of literary achievement, an up-to-date but crude version of "the idle thoughts of an idle fellow."

Advances in Ophthalmology

The great advance of medical science during the last half-century, so spectacular in many other branches of medicine, is not so evident in ophthalmology. Much of what we know and practise has remained unchanged since the days of von Graefe and his contemporaries. Operative technique, particularly during the last decade, has been further evolved and improved to a notable degree. Examples that come to mind are the intracapsular method of extraction in operations for cataract, the diathermo-coagulation procedure in the operative treatment of detachment of the retina, and the art of corneal grafting. The miracle of replacing a diseased blind eye by a new and healthy one, while existing in the public imagination, is still an achievement beyond the realm of practicability.

Great improvement is manifest, too, in the manufacture and fitting of spectacle lenses, and in the design of frames it is obvious that the artist plays no inconsiderable part. The introduction of contact lenses, and the precision with which they can be fitted, has reached a stage of perfection where in selected cases they may well replace complicated and cumbersome spectacles, particularly in conditions of conical cornea and high myopia.

Diagnosis has been rendered more accurate and certain by reason of great improvement in the manufacture, and refinement in the design, of optical instruments and apparatus. Aided by such pretty but expensive toys with which to play, the work of the eye specialist has become more pleasant and interesting, but it is still true that it is the man behind the gun that matters.

In the field of ocular therapeutics the introduction of modern agents, notably the sulphonamide drugs and antibiotics, has brought a new era. No longer is ophthalmia neonatorum—purulent conjunctivitis of the newborn—the scourge it was now that the sulphonamides, penicillin, and its successors are available. It has been accepted in the past that 20% of all cases of blindness in adults are attributable to this mode of infection, but statistics of the future will prove beyond all doubt that we have available to-day most potent weapons in the prevention of blindness. The fact that whereas only a few years ago our ophthalmia neonatorum wards were filled to overflowing, while at the present time it is rare to see in them even a single babe, is to my mind the most dramatic episode in the history of ophthalmology.

In practice to-day we are bewildered by the number and variety of elegant preparations that are available in ocular therapeutics; but we must not allow ourselves to be swept off our feet by the rising tide of modern

therapeutic substances so lavishly and artistically displayed to us by advertisement and by literature, plus blotting paper, which every post deposits on our desks. There is still a place in the *Pharmacopoeia* for the homely zinc drop. The trend at present in all spheres of medicine is to overtreatment, which is something the average eye cannot endure too long without detriment. In dealing with diseases of the eye it is often wise to withhold treatment of any kind and allow that sensitive organ to recover from the therapeutic bombardment to which it has been subjected. It may even be that the eye-bath in the bathroom "will surely not be missed."

Undergraduate and Postgraduate Training

The place which ophthalmology should occupy in the medical curriculum remains a difficult problem. In my experience the average student in his undergraduate stage has no great interest in its study, regarding it rather as a minor hurdle which he has to clear in his run to the final year of the course. The average teacher, on the other hand, takes the opposite view, regarding each and every student as a budding specialist who has to be trained accordingly. It would be better if formal lectures were reduced in number to a necessary minimum and the basic teaching carried out by means of tutorial classes, whereby a few students at a time could be given more individual attention.

In many medical schools the large number of students in the clinical years makes it well-nigh impossible to present this relatively small but important subject in a satisfactory manner. Undue stress is laid on the rarer conditions and not enough attention devoted to the trivial but common ailments which confront the general practitioner from day to day. It should never happen that, in the removal of a superficial foreign body from the cornea, this sensitive surface be denuded of a considerable portion of its epithelium.

The question of postgraduate training likewise presents difficulties, largely owing to the relatively small number of hospital appointments available to trainee specialists. Even the holders of such appointments are handicapped by the limited opportunities for acquiring for themselves experience in the performance of operations. In surgery of the eye, perhaps more than in any other branch, seeing is one thing, doing is another.

The eye is a very small organ in which can be observed in miniature certain phases of disease in general. Within its narrow confines are housed many clues to the problems of the clinician. The study of its pathology and its aberrations necessitates methodical examination and accurate observation. In our investigation of clinical cases we should concentrate not only on the pathological but, remembering that the "eye is the window of the soul; the intellect and will are seen in it," endeavour to ascertain something of the psychological background, the importance of which is often forgotten when arriving at a diagnosis.

A Tribute

Any success which I may have achieved in my professional career I attribute in large measure to the general training in medicine which I received from my former chief and teacher, the late Sir Thomas R. Fraser, Professor of *Materia Medica* and Clinical Medicine in the University of Edinburgh, to whom somewhat belatedly I pay tribute. I well remember the framed motto which hung in one of the side rooms of his

wards—"A little thing is a little thing, but faithfulness in little things is a very big thing." I have endeavoured throughout my career, whether in my practice or in the affairs of my association, to make these words my lodestar. Fraser's fame as a teacher was established not only by reason of his personality but by his insistence that clinical acumen can be acquired only by methodical observation and accurate description. This is a principle to be regarded as basic by all practitioners, but particularly by those who aspire to become successful ophthalmologists.

To be master of his craft it is desirable that the ophthalmologist have reasonable knowledge of mathematics, physiological optics, pathology, neurology, dermatology, some experience of oto-rhino-laryngology, but especially an intimate knowledge of general medicine and a sound training in the principles of surgery. It is inconceivable that any postgraduate student could afford the time, or possess the determination, to pursue his studies adequately in these several branches of medicine with a view to practising so narrow a specialty. No wonder we find among our most eminent ophthalmologists some who have achieved fame as skilful surgeons, some who are noted as good diagnosticians, others who shine merely as refractionists, and a small residue who have reached the pinnacle mainly by literary achievement. The late Mr. Harrison Butler, under whom I served for a period of two years as house-surgeon at the Birmingham and Midland Eye Hospital, in bidding me farewell on my return to South Africa in 1920, gave me this advice: "If you can't get on any other way, write a lot." I happen to have got on fairly well by not taking this advice, but possibly ophthalmic literature is thereby the poorer.

When reduced to terms of bread and butter, the large majority of eye specialists will be judged by the glasses they prescribe, the relative few by the sight they restore.

Experience in Hot Climates

I have wandered perhaps from my original objective, which is to record in some detail impressions of certain aspects of ophthalmology which have been of interest to me, as well as lessons learnt by dint of long experience. "*Ex Africa semper aliquid novi*" is a phrase familiar to all of you, in terms of which I may be expected to describe the "new look" in ophthalmology. In this I fear you will be disappointed; for, be my observations considered old-fashioned, hypercritical, or even foolish, the presentation of my subject is conventional.

I claim, however, some justification for dealing with an aspect of ophthalmological practice unfamiliar to many of you who have had no experience of working in tropical or subtropical climates. The conditions to which I shall allude are not peculiar to South Africa, but occur in many parts of the world where Europeans have settled in environments for which they were not designed by Nature. This is a theme which has not been expounded sufficiently to the public, not even by the numerous "digests" which present the world's literature in small doses. Just as a polar bear might not be at home in the Sahara, so there are individuals living in various parts of the globe whose eyes are not happy. In South Africa, for example, the greater section of the European population are the descendants of settlers who came originally from northern climes, endowed with light-coloured eyes and delicate skins.

Those of us who practise in regions where there is abundance of glare, heat, wind, and dust are consulted daily by patients whose eyes are bloodshot and remain so in spite of treatment of one sort or another over long periods. The state described as bloodshot is due to hyperaemia of the bulbar conjunctiva, which, after all, is merely an extension of the skin of the face, though very much more delicate in texture. Just as the skin reacts to climatic conditions by becoming freckled, bronzed, or rubicund, so does the white of the eye, but in a different way. In it is developed a network of fine surface blood vessels, showing up prominently by contrast in the light-complexioned eye. These blood vessels easily become dilated through the actions of irritants of many kinds, such as dust, tobacco smoke, and wind, for example, and the tendency is aggravated by fatigue and lowered general health.

There is little point in adding to the number of medicine bottles on the shelf by prescribing still more local applications, despite the human desire to have a remedy for every ill. For many years it has been my custom to utilize the greater part of the consultation by explaining in some detail why the eyes are bloodshot and why the expected treatment will prove unavailing so long as the basic factors of complexion and environment cannot be eliminated. Constant "fiddling" with the eyes after all is just another item in the list of what constitute local irritants. In my experience most patients welcome an explanation of this sort and go away with a feeling of relief that the redness of their eyes is due not to disease but to a form of chronic irritation, the treatment of which is common sense and occasionally protective glasses.

Some Common Eye Diseases in South Africa

While not in a position to quote comparative figures, I can say that in South Africa the incidence of glaucoma, cataract, disease of the lacrimal apparatus, and the ocular complications of diabetes occupies a high place. Incidentally, I am of the opinion that of all the systemic diseases that may involve the eye diabetes is the most protean in its manifestations. Among its ocular complications may be cited cataract, iritis, conjunctivitis, retinitis, paresis of the extrinsic muscles, and, more rarely, disturbance of accommodation. By far the worst and most tragic of its complications is the occurrence of glaucoma, secondary to diabetic retinitis, which often leads to complete blindness accompanied by intolerable pain, as instanced by a case in which a patient of mine in his agony implored me to enucleate both his eyes at one sitting—a truly harrowing experience.

Strangely enough, although tuberculosis is one of the chief scourges of South Africa, presenting a major problem to our health legislators, tuberculous complications of the eye are rare. The incidence of ocular disease of syphilitic origin, as no doubt in most other countries, has been greatly reduced by modern treatment.

Trachoma, a disease pandemic in many regions throughout the world, is prevalent in certain sections of the population, notably the so-called "poor whites" and the Cape coloured. Until comparatively recently it was stated not to occur in the Bantu, and my own experience confirms this. Numerous cases of a mild type of trachoma are now recognized among the natives of West and Central Africa, the Rhodesias, and the Transvaal, especially in its northern area, the significant clinical

picture being trichiasis and corneal opacities, which are common sequelae of the disease. An interesting contribution, suggesting a possible new approach to the problem, has been made within the last few months by a colleague of mine in an article appearing in the *South African Medical Journal*. In this the writer asserts that many of these cases, which may be productive of blindness, are due to malnutrition and present a clinical picture closely simulating trachoma, constituting possibly a new clinical entity. Further investigation of this particular problem is obviously desirable.

Senile cataract, which is recognized as being more prevalent in all tropical and subtropical climates, is in my opinion influenced in its onset not so much by the intensity of the sunlight as by its richness in infra-red rays. In other words, heat and not glare is the decisive aggravating factor, though not necessarily the primary one. Incidentally, heat would appear to play no inconsiderable part in the causation of bilateral macular degeneration, a condition often observed in the aged. It is reasonable to assume that heat rays focused by the optical system of the eye over long periods produce a trauma at the macula, not unlike the scorching of paper by using a burning-glass. For the reasons mentioned, it is scientifically correct to impress on individuals living in hot climates the desirability of wearing lenses which absorb a proportion of the infra-red rays, more for the preservation of sight than for the relief of symptoms.

Cataract

With regard to cataract I am tempted to make some observations on the handling of elderly patients, the victims of this condition. The word "cataract" may, and often does, strike terror into a nervous old lady and create consternation in the family circle. This fear may be likened to the horror with which the public generally regard cancer. The doctor who in the course of an examination blurts out that his patient is developing cataract is, to say the least, indiscreet, and little realizes what the psychological effect of his pronouncement may be. No doubt, with his reputation in mind, he cannot risk the possibility of the patient being informed of the condition subsequently by a colleague, with the imputation that he was incompetent. The position is best met by a simple explanation which the patient can appreciate.

It is my custom to compare the eye to a little camera, describing the position and function of the lens but pointing out that, whereas in a camera the lens is made of glass, in the eye it is a portion of living tissue. Although the eye itself is an outgrowth of the brain, the lens alone of its component parts is derived from the skin, the ectoderm of the embryo. I describe the changes which occur in the skin and its appendages, and liken the streaks and haziness which are developing in the lens to the turning grey of the hair or the wrinkling of the skin. Patients appreciate this method of approach which makes it possible for them to understand why their sight is becoming misty although the word cataract is not mentioned.

When it comes to the question of operation for cataract I have decided views on the method which should be employed. While the modern trend is towards the intracapsular technique, which in the hands of the experienced surgeon yields brilliant results in the scope of one operation, nevertheless it is my opinion that this method should be reserved for selected cases, particularly those of immature cataract in younger

subjects. My preference for the old-fashioned extracapsular technique is based not only on the lesser risk involved, but more especially on the time factor. I am convinced by long experience that the actual operation, though performed under local analgesia with complete freedom from pain, subjects the patient to intense mental strain which in the aged profoundly affects the expectation of life. For this reason every effort should be made to reduce the time spent on the operating table to an absolute minimum, a reasonable average being 15 to 20 minutes, including the induction period. Enthusiasm for technical perfection should not be allowed to jeopardize the comfort and future well-being of those who have reposed confidence in the surgeon.

Handling of Child Patients

It is a natural step to hark from the aged to the infant. Some remarks on the handling of children will not be out of place in this kaleidoscope of ideas. The examination of a child from the ophthalmological standpoint may range from an almost impossible achievement to an event of real pleasure. The key word is *patience* and the faculty of knowing how to make friends with our little patients—the pun is unintentional. Too often the consultant working under pressure becomes short-tempered and unintentionally frightens the child to the extent of making further progress futile. A few minutes spent on one's knees playing ball or rattling a bunch of keys pays handsome dividends, especially if an observant mother is watching to see how her little pet is being handled. Contrary to what may be the general opinion, when it comes to sight testing, a child is far easier to examine than an adult. There is not the same hedging and exaggeration of symptoms in the juvenile, who usually makes an all-out attempt to read to the lowest line of the test type, whereas adults very often profess to see only the larger letters and have to be coaxed by any means to reveal their real visual acuity.

A common error, unfortunately made by many medical practitioners, is to inform a parent that her squinting baby is too young to be taken to the eye specialist, who, she is told, can do nothing until the infant is older. Advice of this sort is to be deplored and may condemn the child to the infirmity of having what is known as a "lazy" eye for the remainder of its life. Even in the cradle estimation of the refraction under cycloplegia affords valuable information about the possible origin of the tendency to squint and a sure indication whether glasses, either prescribed at once or at a later stage, should play a part in treating the condition. By far the most important measure at this stage is to make certain by daily occlusion that the infant uses each eye. The necessity for this should be explained to the parents, as well as the part to be played by orthoptics or operation subsequently in the correction of the deformity.

Demand for Spectacles

It might have been feasible to devote my address solely to the subject of the use and abuse of spectacles. The world has read with amazement that under the National Health Service in Britain provision is made for some nine to twelve million pairs of spectacles a year, entailing an annual expenditure of many millions of pounds. This prolific demand for eyeglasses is not peculiar to Britain but exists in all civilized countries throughout the world. The blame for this must be assigned not only to the public, who cherish a childish

belief that spectacles can cure all ocular ills, but also to those who prescribe optical correction, both ophthalmologists and optometrists. To the last-named group, being vendors and at the same time human beings, the temptation to sell goods would appear to be irresistible.

The attitude of the public to the question of wearing glasses has altered remarkably during the last thirty years. When I began practice it was a matter of difficulty to persuade a comely young lady to disfigure herself, even when the need for wearing spectacles was apparent. To-day many of the fair sex are frankly disappointed when informed that glasses are unnecessary. In my opinion spectacles should be prescribed for two reasons only: to correct defective vision and to relieve symptoms which can reasonably be attributed to errors of refraction. If this is accepted as a basic principle I am convinced that a large percentage of the spectacles worn to-day are unnecessary.

While it is true that headache is very often due to low degrees of astigmatism, it does not follow that every error of low degree produces headache. This, however, is a rule-of-thumb method adopted by many ophthalmologists and almost all sight-testing opticians. The result is that when, for example, a healthy young adult who has been engaged in office work during the day and then spent the evening to a late hour reading or sewing complains of tired eyes and headache, the fact that the eyes have had a working day of fourteen to sixteen hours is disregarded completely and glasses prescribed because of some insignificant error of refraction discovered in the course of the examination.

Discrimination in Prescribing Spectacles

A great responsibility devolves on the practitioner who advises spectacles in the case of children and young people generally, as the psychological effect may react greatly to their detriment and at the same time be a source of unnecessary anxiety to the parents. The correction of low degrees of hypermetropia and small errors of astigmatism in otherwise healthy children is quite unnecessary and in my opinion reprehensible. Whatever the case may be with regard to adults, it is essential to estimate the refraction of a child's eyes under cycloplegia, especially on the occasion of the first examination. Unless this is done the true measure of hypermetropia may be greatly underestimated and, on occasion, glasses prescribed for myopia which does not exist. If this principle is accepted, as it should be, examination of the eyesight of children under the age of 15 years should be undertaken only by medical practitioners, who alone are entitled to employ cycloplegic drugs.

Even in adults a wise discretion should be exercised, as the following instance, admittedly an exceptional one, illustrates. Some years ago I was consulted by a young man who, unknown to me at the time, was under treatment by a psychiatrist. At the conclusion of the examination, which revealed no ocular abnormality, the patient asked me what I could suggest to relieve his eyes from glare. Little did I imagine when I mentioned sunglasses that on his return home he would blow his brains out, having remarked to a companion that to wear dark glasses was the last straw. If a wiser discrimination were exercised when prescribing spectacles, fewer people would waste their money and be none the worse in consequence. We should make it a rule to spend at least some part of the consultation in explaining to our patients the many possible factors which in the aggregate

may have contributed to their symptoms, instead of ushering them out merely with a script in hand.

The treatment of presbyopia too often is not accorded the detailed care which it merits. It is not sufficient to ascertain the age of the patient and then add an arbitrary amount of correction according to Donders—a rule-of-thumb method so readily resorted to by the busy practitioner. In each case the amplitude and range of accommodation should be measured and, before prescribing, the build of the patient, his particular kind of work, and his individual wishes should be taken into consideration, not forgetting his state of health and psychological make-up. Considerable reputation is acquired by the eye specialist who is known to provide comfortable reading glasses.

The Value of Humour

I am a great believer in humour. When tactfully utilized it can save a tense situation, disarm an opponent in debate, and above all make life with its present-day worries and responsibilities more bearable. In the words of Sterne, "I live in a constant endeavour to fence against the infirmities of ill-health, and other evils of life, by mirth. I am persuaded that every time a man smiles—but much more so when he laughs—it adds something to this fragment of life." And there is humour even in the eye. I remember many years ago having the unpleasant task thrust on me of enucleating an eye of a personal friend, a man prominent in the world of commerce. He took his sentence philosophically and in due course the time arrived for fitting an artificial eye. While I was occupied in selecting a prosthesis which would match the fellow eye, he inquired whether there were different kinds of artificial eyes. I explained that they varied greatly in size, colour, and shape, which made it a matter of some difficulty to select a suitable one. My friend replied, "I appreciate all that, doctor, but what I want to know is whether I can have an eye with a soft look for social occasions and one with a steely look for business purposes."

In South Africa, as you may know, we have two capitals, two flags, two languages, and most of the inhabitants have two eyes. On one occasion I had as a patient an Afrikaans-speaking man who was inclined to be critical of my inability to converse fluently in his home language. While appreciating the fact that I could express myself fairly well, he stressed the importance of being fully bilingual when dealing with my patients. To this I retorted that it made little difference so long as the spectacles I prescribed were bilingual, a remark that seemed to puzzle him. When he asked me what I meant I explained that with my spectacles he would be able to read Afrikaans with one eye and English with the other. He looked thoroughly mystified, not knowing whether I was serious or merely pulling his leg.

Humour in medical practice can be carried too far, as the following incident illustrates. On one occasion I was consulted by a lady of exceedingly fair complexion with regard to her two little daughters, who were very near to being albinos. Knowing that previously the family had been patients of Dr. X, I inquired why she had come to me for advice. She then explained that Dr. X on the occasion of a recent visit had suggested that it would have been better if she had married a black man. On getting home she repeated this to her husband, who became furious and forbade her to go near Dr. X in future.

Aids to Beauty

For the benefit of the ladies, whose presence I welcomed at the outset of my address, I venture to make a few remarks which are kindly meant. I refer to the practice of plucking the eyebrows, which presumably is intended to have a beautifying effect. Let me remind you that Nature provided the eyebrows for a specific purpose—namely, to divert the drops of perspiration which course down the forehead from entering the eyes. It would be just as reasonable to tear down the guttering from the roof of a building and allow the rain water to cascade over the window-panes. The natural corollary would be that those of the gentler sex who resort to this practice do not work hard enough to perspire.

Another beauty aid extensively employed in high society is the application of pigments of various kinds to the eyelashes, perhaps not quite so reprehensible an embellishment. This form of toilet is not without risk, and I have seen at least one "pair of sparkling eyes" rendered permanently glazed and blinded as the result of innocent preparation for a social function.

Conclusion

Ophthalmology is perhaps the cleanest and most congenial of all the specialties, its practice attended by a minimum of blood and pus and the unpleasantness of working in obnoxious cavities. Nevertheless it is apt to be monotonous and tiring, especially when one is cooped up in darkened rooms for the greater part of the week. To find that mental relaxation so essential for the human machine it has been my habit for the past few years to spend part of the week-end in the company of a few friends walking and climbing on Table Mountain, the mountain so beloved by my fellow countryman and that great statesman, the late Field-Marshal Smuts. It was on the summit of Table Mountain that he delivered perhaps the finest of all his many inspiring addresses, on the occasion in May, 1923, when he unveiled the Mountain Club War Memorial to those of its members who fell in the 1914-18 war. He spoke of the Religion of the Mountain, and I hope you will pardon me if I quote a few sentences of his address:

"What is that religion? When we reach the mountain summits we leave behind us all the things that weigh heavily down below on our body and soul. We leave behind a feeling of weakness and depression. . . . We feel a great joy. The religion of the mountain is in reality the religion of joy. Not only on the mountain summits of life, not only on the heights of success and achievement, but down in the deep valleys of drudgery, of anxiety and defeat, we must cultivate this great spirit of joyous freedom and uplift of the soul. We must practise the religion of the mountain down in the valleys also."

Not to all of us comes the opportunity to scale mountain heights where we may experience for ourselves the exhilaration of spirit so beautifully described by Field-Marshal Smuts; but to each of us performing our daily round and common task, despondent and worried by the troublous times in which we live and the cares of practice, it is possible to look up to something higher than ourselves. Someone to whom we can turn for help and guidance. Though I am not one who parades my religion, I can give you an assurance that if you practise this uplift of the soul from day to day you will not be disappointed. On what more appropriate note can I end this ophthalmological address than by reminding you of the words of the Psalmist, "I will lift up mine eyes unto the hills, from whence cometh my help."

ASPECTS OF THE CIRCULATION'S ECONOMY*

BY

K. J. FRANKLIN, D.M., D.Sc., F.R.C.P.

Professor of Physiology, St. Bartholomew's Hospital Medical College

It is obviously pertinent now to ask how the order of blood-flow reductions found in experiments upon animals corresponds with experience in human circulatory failure. *A priori*, I think, it might be expected to correspond where the conditions are sufficiently similar, but otherwise it would show divergences, though with analysis of the clinical and other experience available it should be possible to classify the various types of blood-flow redistribution, and of exitus through the progression of certain of them to the stage of irreversibility. I propose to give a number of instances of blood redistribution in man; many of them are in line with the order of sacrifice which I have detailed, but certain are not, for the conditions were different. I shall pass then to consideration of the blood flows in diving mammals, in the foetus *in utero*, and in obstetric shock, and shall show points of similarity which emerge, in particular the preferential treatment of the brain.

Circulatory Effect of Cold

In the first place, the symptom of coldness due to contraction of skin vessels is so common an early symptom in various disorders that it needs no emphasis. In the case of the limbs it may be followed by pain in ischaemic muscles; this was so with the late King Gustav of Sweden on October 28, 1950, the day after his collapse. At the time, however, his brain was clear and he was able to receive several members of his family. The bulletin issued in the evening, no important change having occurred in the interim, stated that the heart's activity was comparatively good. Let us turn to a second instance. When the great eighteenth-century physiologist, Albrecht von Haller, was dying he exhibited a fine professional interest in his own circulatory failure (Cushing, 1901). For a while he found that he could still feel his pulse; thereafter it was imperceptible. Here then, the arm circulation had been markedly reduced while that to the brain remained competent.

The part played by the peripheral constriction in maintaining higher cerebral activity is also exemplified in the late Sir Joseph Barcroft's exposures of himself to severe cold. On two occasions he lay down naked in a freezing-room, and carried on until an assistant, seeing unconsciousness to be imminent, came to the rescue with warm blankets and hot drinks. In each experiment "J.B." at first lay shivering, with his limbs flexed in a sort of effort to huddle up, and he was very conscious of the cold. During this stage his nervous system, in an effort to fight the adverse circumstances and to preserve the body's heat, was constricting his cutaneous vessels and keeping the blood in the internal parts; because of the cold he had to suppress, by an effort of will, his instinct to be up and about. Suddenly thereafter his nervous system gave up the struggle; he stretched out his legs, and the sense of coldness was succeeded by a beautiful feeling of warmth as his skin vessels relaxed—he lay "basking" in the cold. At this

*The second Oliver-Sharpey Lecture, given at the Royal College of Physicians of London on March 15, 1951. The first lecture appeared in last week's issue.