

PUBLICATIONS DE L'UNIVERSITÉ DE LAUSANNE

LXX

1^{er} mars 1990

MÉDAILLE GONIN
(1990)



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GON

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LAURÉATS DE LA MÉDAILLE GONIN

- 1941 ALFRED VOGT, ZURICH
1945 PAUL BAILLIART, PARIS
1950 HERMENEGILDE ARRUGA, BARCELONE
1954 STEWART DUKE-ELDER, LONDRES
1958 ALAN WOODS, BALTIMORE
1962 HANS GOLDMANN, BERNE
1966 JULES FRANÇOIS, GAND
1970 GERHARD MEYER-SCHWICKERATH, ESSEN
1974 DAVID G. COGAN, CAMBRIDGE, MASS.
1978 NORMAN HENRY ASHTON, LONDRES
1982 ALFRED EDWARD MAUMENEE, BALTIMORE
1986 AKIRA NAKAJIMA, TOKYO
1990 BARRIE R. JONES, LONDRES

EN CETTE ANNÉE OU ELLE A CÉLÉBRÉ
LE QUATRIÈME CENTENAIRE DE SON PREMIER ÉTABLISSEMENT

L'UNIVERSITÉ DE LAUSANNE

TENANT A HONORER LA MÉMOIRE D'UN DE SES MAÎTRES
QUI L'A ILLUSTRÉE PAR UNE DÉCOUVERTE INSIGNE
FRUIT D'UN TRAVAIL OPINIÂTRE
ET S'ASSOCIANT DANS CE BUT

LA SOCIÉTÉ SUISSE D'OPHTALMOLOGIE

DÉSIREUSE D'AFFIRMER SA RECONNAISSANCE
POUR L'ACTIVITÉ FÉCONDE DE L'UN DE SES FONDATEURS
PATRIOTE ARDENT ET BIENFAITEUR DE L'HUMANITÉ
INSTITUE CONJOINTEMENT AVEC ELLE

LA MÉDAILLE GONIN

AFIN DE STIMULER LE PROGRÈS DE L'OPHTALMOLOGIE
AUQUEL POUR UNE GRANDE PART A CONTRIBUÉ
CELUI QUI A CRÉÉ LE TRAITEMENT
DU DÉCOLLEMENT RÉTINIEN

CETTE MÉDAILLE

SERA DÉCERNÉE PÉRIODIQUEMENT
PAR LES SOINS DU

CONSEIL INTERNATIONAL D'OPHTALMOLOGIE

A UN OPHTALMOLOGISTE
DE MÉRITE RECONNU

POUR
L'UNIVERSITÉ DE LAUSANNE

LE RECTEUR

Emile Golay

LE CHANCELIER

Frank Olivier



LAUSANNE
AU MOIS DE NOVEMBRE
MDCCCXXXVII

POUR
LA SOCIÉTÉ SUISSE D'OPHTALMOLOGIE

LE PRÉSIDENT

Richard Kraignulz

LE SECRÉTAIRE

Jean Bouguin

Discours du professeur Pierre Ducrey

recteur de l'Université de Lausanne

Il vaut la peine de s'arrêter un instant à l'acte de fondation de la Médaille Gonin. En voici le texte original:

«En cette année où elle a célébré le quatre centième anniversaire de son premier établissement, l'Université de Lausanne, tenant à vénérer la mémoire d'un de ses maîtres qui l'a honorée par une découverte insigne fruit d'un travail opiniâtre et, s'associant dans ce but la Société suisse d'ophtalmologie, désireuse d'affirmer sa reconnaissance pour l'activité féconde de l'un de ses fondateurs, patriote ardent et bienfaiteur de l'humanité, institue conjointement avec elle la Médaille Gonin, afin de stimuler le progrès de l'ophtalmologie auquel pour une grande part a contribué celui qui a créé le traitement du décollement rétinien. Cette médaille sera décernée périodiquement par les soins du Conseil international d'ophtalmologie à un ophtalmologue de mérite reconnu. Pour l'Université de Lausanne, le recteur, Emile Golay, le chancelier, Frank Olivier. Pour la Société suisse d'ophtalmologie, le président, Richard Klaingüli, le secrétaire, Jean Bourquin. Lausanne, au mois de novembre 1937».

Quant à la médaille elle-même, en or massif, elle rappelle les dates de Jules Gonin (1870-1935) et porte au revers une inscription latine: «Deo juvante, miseris reddidit lucem», ce qui signifie: «Avec l'aide de Dieu, il a rendu la lumière aux malheureux». Le nom du bénéficiaire est gravé sur la tranche de la médaille.

Selon le règlement, l'Université de Lausanne met à la disposition du Conseil international d'ophtalmologie la médaille qui sera remise par lui au bénéficiaire en une séance solennelle du Congrès international d'ophtalmologie. L'Université de Lausanne a en outre l'honneur d'organiser la cérémonie au cours de laquelle le parchemin qui sert de document officiel est remis au lauréat.

L'Université de Lausanne, fondée en 1537, a saisi l'occasion de son quatre centième anniversaire pour prendre quelques initiatives heureuses. L'une d'elles a consisté en la création de la médaille Gonin, en collabora-

tion avec la Société suisse d'ophtalmologie. Le recteur Emile Golay et le chancelier Frank Olivier sont entrés dans l'histoire de l'Université en apposant leur signature au bas de ce document.

Depuis sa création, la Médaille Gonin a été décernée à deux Suisses, les professeurs Alfred Vogt, de Zurich, et Hans Goldmann, de Berne, à un Français, à un Espagnol, à deux Anglais, à trois Américains, à un Belge, à un Allemand, enfin, en 1986, à un Japonais. Le président du Conseil international d'ophtalmologie, le professeur Alfred Edward Maumenee a lui-même reçu la médaille Gonin en 1982.

L'ophtalmologie lausannoise s'est distinguée grâce à quelques personnalités marquantes, comme Marc Dufour, professeur de 1890 à 1910, son neveu Auguste Dufour, professeur de 1910 à 1918, enfin Jules Gonin, professeur de 1920 à 1935. D'une manière pressante, Auguste Dufour appelait dès 1904 le monde savant à réfléchir au moyen de remédier au décollement de la rétine. Jules Gonin consacra l'essentiel de son énergie, durant des années, à définir en premier lieu les causes du décollement de la rétine, soit une déchirure, un trou dans celle-ci, origine du décollement proprement dit. Mais ce n'est qu'en 1929 que son explication fut admise universellement.

Dans son discours de récipiendaire, le professeur Akira Nakajima, lauréat en 1986, décrit son admiration pour l'œuvre de Gonin, pour qui il a fallu des années d'efforts et de combats pour convaincre ses collègues ophtalmologues de ce qui est aujourd'hui une vérité évidente. Il ajoute qu'il a fallu plus de dix ans pour que le traitement du décollement rétinien traverse le continent eurasiatique pour parvenir enfin au Japon. Ce n'est qu'en 1930, soit 11 ans après les premières publications de Gonin sur le sujet, qu'un ophtalmologue japonais publie des cas traités selon le nouveau principe mis en évidence.

Terminons sur Gonin en disant que sa mort prématurée a privé le grand savant helvétique du Prix Nobel. Il est heureux que l'Université de Lausanne garde ainsi le souvenir de l'un de ses maîtres et que la médaille Gonin soit pour elle l'occasion de recevoir quelques-uns des plus grands ophtalmologistes du moment.

On peut rappeler ici l'existence du «Club Gonin», association fondée en 1958 par des ophtalmologistes de renom, intéressés en premier lieu par la pathologie du segment postérieur de l'œil, en particulier par les affections de la rétine, de la coroïde et du corps vitré. (Pour les non spécialistes, je précise que la coroïde est la membrane vasculaire qui se trouve sous la rétine et la nourrit). Peu à peu, le Club Gonin, l'une des rares associations ophtalmologiques d'envergure mondiale qui soit d'origine européenne, est devenu le groupement le plus prestigieux des spécialistes du segment posté-

rieur de l'œil. Il compte aujourd'hui plus de 250 membres, représentant plusieurs dizaines de pays. La Ville de Lausanne et son Université auront l'honneur de servir de siège à la prochaine réunion du Club Gonin, en septembre 1990.

Allocution du professeur Jean-François Cuendet membre du Conseil international d'ophtalmologie

Parmi les nombreuses charges assumées par le Conseil international d'ophtalmologie, l'une des plus importantes est sans doute la désignation des lauréats des Médailles Gonin, Duke-Elder et Jules-François. Parmi ces trois distinctions, la plus ancienne ainsi que la plus prestigieuse est sans conteste la Médaille Gonin. Notre ancien président Derrick Vail la considérait comme le Prix Nobel de l'ophtalmologie. Nous persistons à la considérer comme telle.

Le Conseil international d'ophtalmologie est composé de 20 membres. Seize d'entre eux se sont réunis l'an dernier à Rio de Janeiro. Ils examinèrent attentivement diverses candidatures proposées par un comité international ad hoc. A bulletin secret et à une large majorité, le professeur Barrie Jones fut désigné comme lauréat de la Médaille Gonin 1990 pour l'ensemble de son œuvre et en particulier pour la création de l'International Center for Eye Health. Ce centre joue un rôle immense dans la lutte contre la cécité dans le tiers monde, tant sur le plan de la recherche que du traitement des patients et de la formation des collaborateurs spécialisés.

Notre président, le professeur Edouard Maumenee de Baltimore, remettra personnellement la Médaille d'or Jules Gonin au professeur Barrie Jones, à Singapour, le 19 mars prochain, lors de la séance solennelle inaugurale du 26e Congrès mondial d'ophtalmologie.

En attendant, j'ai le plaisir et l'honneur d'adresser, au nom du Conseil international d'ophtalmologie, nos plus chaleureuses félicitations à ce très éminent et très méritant lauréat.

Discours du professeur Claude Gailloud

Le professeur Barrie Jones jouit, dans le monde de l'ophtalmologie, d'une très grande réputation. La décision prise par le Conseil international d'ophtalmologie de lui attribuer la Médaille Gonin 1990 est accueillie partout avec beaucoup de satisfaction.

Le professeur Barrie Jones est né à Silverstream en Nouvelle-Zélande, tout près de Wellington, le 4 janvier 1921. Après avoir effectué sa scolarité et ses études de médecine, il quitte ce pays paradisiaque pour les brouillards de Londres où il va accomplir une carrière éblouissante.

Sa formation d'ophtalmologue se fera entièrement au Moorfield's Eye Hospital dans lequel il gravit tous les échelons de la hiérarchie universitaire avant de devenir le patron de cet hôpital prestigieux dont il assume la direction de 1963 à 1980. Durant cette période, il forme des ophtalmologues de renom qui font de Londres un centre de l'ophtalmologie.

Mais sa philosophie de chercheur évolue. Il réalise bientôt que la recherche devrait avoir autant que possible un objectif social. Dans un article paru en 1985 et intitulé «Social responsibilities in ophthalmology», il expose sa profession de foi, la responsabilité sociale des ophtalmologues, la nécessité de donner un objectif social à la recherche en ophtalmologie et de lutter partout dans le monde contre la cécité.

En 1981, il crée un centre international pour la santé oculaire (International Center for Eye Health). Ce centre, fonctionnant en tant que département d'ophtalmologie préventive dans le fameux Institut d'ophtalmologie de l'Université de Londres, devient important, attire des chercheurs venus de partout, fait preuve d'une activité considérable, forme des personnes capables de donner des soins dans le tiers monde, poursuit une recherche acharnée dans la lutte contre la cécité. Centre d'enseignement et de recherche en ophtalmologie, il aborde la pathologie oculaire de façon globale afin d'apporter des solutions qui soient compatibles avec les ressources humaines propres à chaque pays.

Ainsi, les travaux effectués dans ce centre sous la direction de Barrie Jones ont permis de mettre au point des thérapeutiques qui ont déjà donné des résultats pratiques dans le traitement et l'éradication de certaines mala-

dies oculaires qui sont de véritables fléaux pour une partie de l'humanité, comme le trachome (une des maladies les plus répandues dans le monde) ou l'onchocercose, pour ne citer que deux exemples.

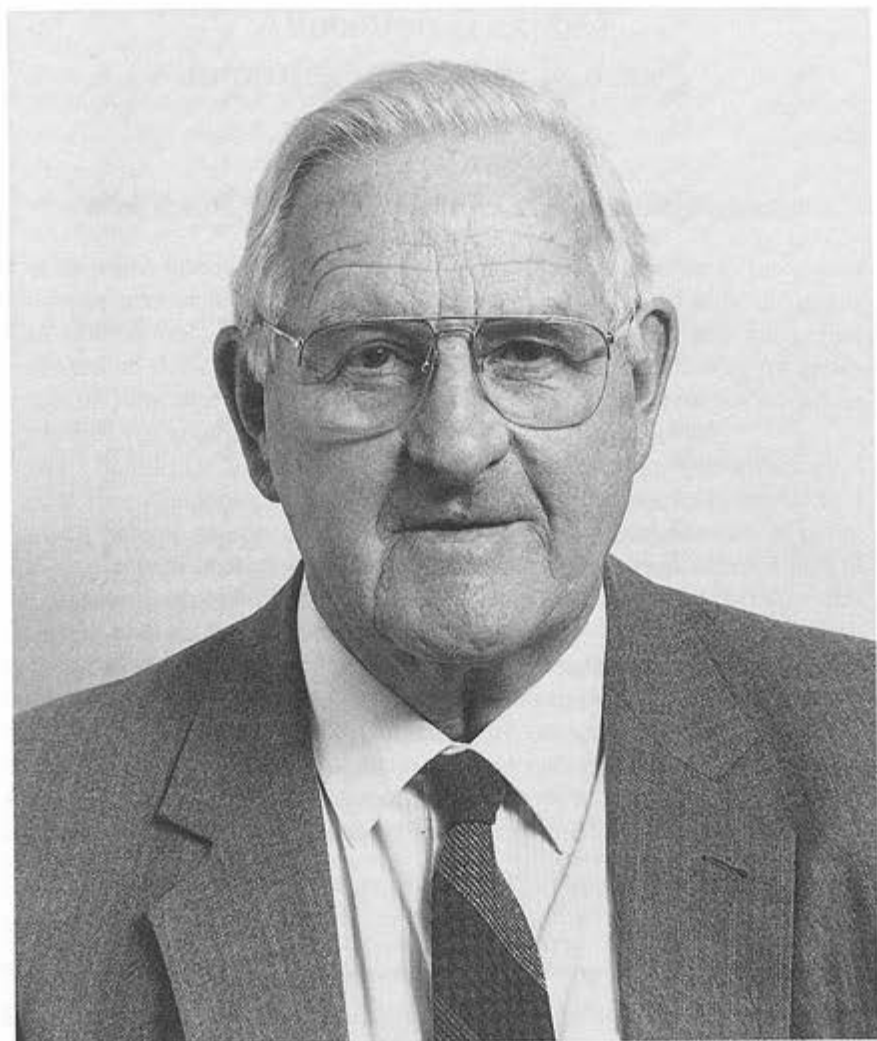
Le professeur Barrie Jones a fait l'objet de nombreux témoignages de reconnaissance et d'admiration sous forme de distinctions prestigieuses. Mais il est un homme modeste. Son engagement pour le tiers monde a été et reste sans doute l'une de ses préoccupations majeures.

Ses élèves apprécient sa disponibilité de chaque instant, sa capacité d'écoute, sa faculté de se mettre à la portée des autres, son enseignement toujours très clair partant du général pour arriver à l'essentiel.

Le professeur Jones a une connaissance étendue de l'ophtalmologie, dont il est expert dans beaucoup de domaines. Chirurgien de grande valeur, membre de nombreuses sociétés savantes, il a donné partout dans le monde un nombre incalculable de conférences. Enfin, il a publié à ce jour, le plus souvent comme premier auteur, 218 travaux scientifiques et 25 livres ! C'est donc le savant, l'ophtalmologue, le chirurgien, le chercheur, l'enseignant mais peut-être davantage encore l'homme et son engagement qui sont honorés aujourd'hui.

Permettez-moi, pour terminer, de lire ces quelques mots trouvés dans l'une des publications de Barie Jones :

«It is a period that will bring epidemiology and health service management much more deeply into ophthalmology, to enable us to identify and to meet our social responsibilities. In developing countries, it will enable ophthalmology to respond effectively to the challenge of bringing eye health through primary health care system».



M. le professeur Barrie R. Jones

Allocution et exposé du professeur Barrie R. Jones

What should the world expect from the ophthalmologists?

It is the most honourous and challenging moment of my life to meet with you to do honour to the University of Lausanne - and to its most distinguished ophthalmologist: Professor Jules Gonin whose life and work first made retinal detachment a curable condition and opened the way for restoration of sight and prevention of blindness from detachment for countless generations to come.

When I heard that I was to receive this highest award in ophthalmology, I was at first disappointed, even resentful that it was not to be given to a younger person, nearer to the time of that person's signal advance in scientific or practical ophthalmology than mine which have now become part of the furniture of ophthalmology and related medicine. But perhaps this award is also to recognise my contribution to the philosophy of ophthalmology, its social relevance, its purpose and its inspiration?

So, whilst recording my profound appreciation to the International Council of Ophthalmology and to the University of Lausanne for this award, and whilst thanking each of you for your kind and generous words today, I should like, in all humility, to focus attention on a question of the greatest importance for control of blindness in our time and in the future:

So,

What should a country, or the world, expect from its ophthalmologists?

Let us approach this complex question by considering in turn three smaller ones that are more easily answered:

1. What do the ophthalmologists expect from their work?
2. What do we mean by a country's ophthalmologists?
3. What should communities and countries expect of their ophthalmologists?

Then we should consider two concepts that are fundamental to clear thinking and correct prioritization for action to control blindness:

4. the concept of «Avoidable Blindness» as the target for action;
5. the concept of multifactorial causations of continuing avoidable blindness in communities - with emphasis on socio-cultural, economic and especially organizational causes of blindness;

finally the questions:

6. How does a country know that it has avoidable blindness requiring action?
7. How should a country address this public health problem of avoidable blindness?
8. What should the world expect from its ophthalmologists in international co-operation for control of avoidable blindness?

1. What do ophthalmologists expect from their job?

A great diversity of interests attracts different doctors to train as ophthalmologists and there is corresponding diversity of motivation concerning the rewards that are expected. But I would submit that, for the most part, they comprise varying proportions of the following, as are appropriate in the country concerned:

- a) to have opportunity to practise good ophthalmology;
- b) within constraints of personal ability and opportunity, to practice whatever field of ophthalmology is chosen;
- c) to live in a city that provides a good income, good educational, recreational and other facilities for family;
- d) to have a substantial income that is high, in the context of the medical profession;
- e) to enjoy the pleasure of restoring sight to persons who can not see; to bask in the gratitude of such people and the appreciations of the community;
- f) for some, there is the inspiration of alleviating blindness on a huge scale, even to make progress in controlling world blindness;
- g) through research, to enjoy the thrill of finding out new treatment or prevention thereof;
- h) to enjoy the rewards of escalating various of the above through more efficient management;
- i) for some there is the accolade of eminence in the profession.

To these I would add a tenth:

- j) The joy of unrestricted dissemination of knowledge and skills for the preservation of eye health, for the relief of common eye conditions, and the referral of others.

These all seem reasonable, although the financial rewards expected in some countries are quite astronomical in comparison with others.

Two aspects, however, urgently require attention because they impose important limitations on prevention and relief of blindness and because the countries concerned may be grateful for support from the international community of ophthalmologists in altering regulations to escape from these limitations in their own countries.

Sadly, many developing countries with the greatest need to improve eye health pay their ophthalmologists the least. Mechanisms to provide some form of additional payment for additional outreach work in prevention of blindness are urgently required in many developing countries, if the challenge of controlling avoidable blindness is to be effectively tackled. It is not reasonable to expect dedicated people to penalize their families by foregoing their meagre reward for limited private practice without recompense. Secondly, there is the expectation of living in or near a city with good amenities that almost every ophthalmologist takes for granted. In most developing countries this puts perhaps 70% of those who are avoidably blind - out of reach of the ophthalmologists.

«Hors de portée d'un ophtalmologiste»

If we are not prepared to go there ourselves, it is surely a responsibility on us, as a profession, *to see to it that simplified skills for diagnosis, treatment or referral are passed on to large numbers of people* who live and work as medical assistants, nurses or Primary Health Care workers in remote rural areas.

In developing or transitional countries, analyses need therefore to be made of demographic data to estimate the size and distribution of the remote populations beyond reach of ophthalmologist's services. This will indicate the size and the urgency of providing «Community Ophthalmic Outreach Services».

2. What do we mean by «a country's ophthalmologists»?

At an individual level, this comprise all those who have trained in ophthalmology and perhaps some that are working in closely related fields such

ophthalmic pathology, ophthalmic epidemiology or ophthalmic neurology. This includes hospital practice, private practice, academia, research or public health etc.

But we must also think of ourselves as an organized corporate body of professionals

Outside the profession, people do not understand how ophthalmology is subdivided, or how various responsibilities lie more on one kind of ophthalmologist than another. Nor do they understand that in many countries some very important responsibilities, such as prevention of avoidable blindness or promotion of eye health, have not actually been taken up by anyone.

It is simply not realised that, in many countries, no one has a job that specifies such activities or such responsibilities! - for which well organized courses of training have been available in more than one country for some years.

People see us as a group that is responsible for everything to do with the eye, its diseases and relief thereof. They see us, in a monastic sense, as the custodians of this esoteric know-how. They expect us to extend it, improve it and pass it on for future generations.

People expect us to disseminate the knowledge and skills that should be widely known and practised in the community by various sorts of people for the betterment of eye health.

Certainly they hold us responsible to see to it that everything is done, that could be done, to avoid people going blind or staying blind unnecessarily.

It is clear that every single ophthalmologist does not need to undertake every kind of activity and responsibility. But, as a group, as a profession, as a National Ophthalmological Society, we should see to it that each kind of important responsibility is catered for by people who are suitably trained.

Otherwise, we (and the Ophthalmological Society that leads us, that sees to our training, our conditions of work and speaks for us) will be seen to have failed our society and our country.

The National Ophthalmological Society is thus **the corporate conscience** and spokesperson of the country's ophthalmologists. The corporate conscience must reach a higher level of social responsibility and a greater coverage of needs than is feasible for any one individual. It must be more sensitive to the country's needs, and it must not be satisfied with inadequate coverage.

Not every ophthalmologist will wish to go to remote areas to work in high risk populations; but every ophthalmologist will wish to be seen to support the view that this should be done by some persons, suitably trained and sui-

tably employed for this work. For this purpose, I believe, every country will want to see some small number of its ophthalmologists trained in Community Ophthalmology (otherwise known as Public Health Ophthalmology) and Ophthalmic Epidemiology - for posts in the main academic units and in the health service.

3. What should communities and countries expect of their ophthalmologists?

I believe that communities and countries expect and with fuller understanding should be encouraged to expect four primary services from their ophthalmologists and three supportive functions to maintain those primary services.

Primary expectations of ophthalmologists

- a. excellent service for the elite and wealthy;
- b. some measure of eye care for all within reach - and to extend the community outreach;
- c. see to elimination of avoidable blindness;
- d. see to dissemination of information about blindness; eye care and use of eye services;

supportive functions

- e. advancement of our subject through research*;
- f. training of young ophthalmologists and other assistants;
- g. improved planning and management for the above.

a. Service for the elite and wealthy

In every country the leading ophthalmologists are called upon to provide excellent service for those in power, in government etc. If this is not well attended to, the profession falls into disrepute. It is reasonable also that those who wish to pay should be able to buy what they want. Certainly this provides the most financially rewarding end of the ophthalmologist's spectrum of activities.

Unfortunately, the professor in many developing centres, is expected to provide service for the elite, academics and the wealthy, on a scale that is needed through the sharing of this load.

It is wrong, however, to imagine that the practitioners who spend all their time in the care of the wealthy and the powerful have no responsibilities or

* Since I have been in Lausanne I have been hearing, with great excitement, of the plans to develop a Swiss Institute for Research in Ophthalmology.

opportunities for the prevention of the blindness. Although such practitioners are very unlikely to become involved in day to day work in prevention or relief of massive blindness, they have unique opportunities to give information to and to influence the decisions of people in power and people who may like to contribute financial support for such worthy causes.

It is important therefore that such practitioners keep closely in touch with what is going on in their profession and take every opportunity for such worthy action that can powerfully influence events in a school, a community or a country.

b. Eye care for all and to extend outreach

The accessibility and content of eye care is obviously what influences most the outcome of potentially blinding conditions in those countries with a good coverage of their people. But, in countries with only 20-30% coverage, improvements in the standard of care offered will make little impact on the prevalence of blindness.

I should like now to present a situational analysis of populations requiring ophthalmic service. This is the key to planning for effective coverage for all, by dividing the population into three main categories of situation in relation to access to an ophthalmologist:

a) urban, suburban or rural town:

these are satisfactorily served by traditional hospital or clinic services which may or may not need strengthening;

b) underserved or marginal urban:

these are areas of underserved or deprived people, often of ethnic minority, sometimes city-centre, sometimes marginal or peripheral. Geographically they may be close to a service centre but socially they are remote and require special Community Ophthalmology outreach effort to reach them;

c) remote and rural:

in the past, these remote and economically deprived people out of reach of eye services have been neglected in developing countries. Between 70-80% of the world's avoidable blindness is found in this situation which is seldom present in developed countries.

It is not reasonable to expect ophthalmologists to live in these areas and the countries could not afford the number that would be required for coverage. It is therefore essential to reach them through people who have their roots in these areas and who are less expensive than ophthalmologists.

Many countries are developing systems for bringing basic eye care to such situations through their Primary Health Care system by training ophthalmic

nurses and others in the skills of diagnosis and treatment of common conditions and referral of more complex problems to district or provincial centres for surgery.

Several countries have trained general surgeons or selected ophthalmic medical assistants as entropion surgeons or else as cataract surgeons, if they perform well with the eyelid surgery.

Such innovative approaches to improving the eye health of remote people are to be applauded. The continuing monitoring and publication of results provides assurance of quality, and this quality should be compared with the results of no surgery at all.

In Thailand, the slogan which epitomises Community ophthalmology is:

«It is better to have... good ophthalmology for all... than only to have... the best ophthalmology for the few».

c. See to the elimination of avoidable blindness

From time to time, blindness from one disease or another is dramatically reduced by the rapid world-wide application of some brilliant biomedical advance or practical discovery - none more dramatic than the sightsaving discovery of Jules Gonin. Discovery is all - methods and the service for application are more or less ready and waiting.

Great effort and huge finance is rightly being poured into biomedical research and wonderful advances are no doubt going to follow.

Other advances in prevention of blindness have been brought by the innovative application of old knowledge applied through a huge organizational system. Such has been the triumph of the World Health Organisation, under D.A. Henderson as project director, in the eradication of smallpox, one of the world's massive causes of blindness.

Let me present two concepts that I believe are fundamental to clear thinking and correct prioritization for action to control blindness:

d. The concept of «avoidable blindness»

I have defined avoidable blindness, in the strict sense, as «blindness that could be prevented, or relieved, within the limits of resources that could reasonably be made available».

This makes avoidable blindness an appropriate target for prevention of blindness efforts. Over time the target automatically changes, with alterations in the medical and health technology on the one hand, and with changes in the resource priority background on the other.

e. The concept of multifactorial causation of continuing avoidable blindness in communities

Teaching in the past, and all published data on blindness or death have considered only the biomedical causes, the actual processes leading to blinding or lethal pathology, generally attributing outcome to a single pathological process. Yet it is obvious to those who are concerned about outcomes of disease that this horizon is restricted. Acquisition of disease and the outcome of it are nearly always multifactorial. One example will suffice: It is obvious that blindness or death following accident with sudden severe bleeding, is frequently due to the haemorrhage coupled with lack of first aid health service to stop the bleeding. But if our horizons end with the disease process we forget to organize widespread community knowledge and willingness to act in emergency.

I have classified the multifactorial causes of blindness, or blinding outcomes, that are operating in communities. Some of these are surely avoidable. Many are regularly overlooked because they have not been seen to lie within the ophthalmologists' frame of reference for action.

**Causes of continuing blindness in communities
(avoidable and unavoidable)**

- a. Biomedical: pathological disease causes
- b. Environmental or occupational
- c. Socio-cultural: behavioural
- d. Economic (both micro- and macro-economic)
- e. Organizational causes: deficits in professional organization or in technical organization

a. Biomedical disease causes

Cataract; trachoma and communicable ophthalmia; corneal ulceration - nutritional or infective; onchocerciasis or leprosy; glaucoma; injury; age-related macular disease; diabetic retinopathy, etc.

Cataract constitutes about half the case-load for ophthalmologists everywhere. It is responsible for about 17 million blind. In the absence of data on incidence of new cases of cataract blindness, this has been thought of as a backlog of unoperated cases from the past that could be cleared by intensive, and hopefully, short-lived programmes. Huge backlog there certainly is, and the strategy of such programmes brings great-benefit to the enormous numbers operated on. It is believed that in India, the target of 1,2 million operations was reached in 1989. But in many countries the problem is not likely to go away even under this onslaught.

Gigantic cataract surgical services will continue to be required unless the generation of newly blinded cases is controlled by preventive strategies.

Working in central India, Minassian, Mehra and colleagues have data from a 5 year longitudinal study that indicates a current annual incidence of 3,8 million new cases of blinding cataract in India each year! Even allowing for deaths, the crash programme would have to be doubled, just to catch up with the problem. But even that would not be eradicating the excessive burden of cataract blindness in the country.

This data stresses the need for similar studies of incidence of cataract in many countries. Above all, it stresses the enormous importance of funding the most active research on causation of massive cataract blindness and its prevention, especially for research on causation by dehydrational crises and the feasibility of prevention of blinding cataract by controlling these.

Surely the world expects its ophthalmologists to see to it that everything possible is done to diminish this gigantic burden of disability, even if the action required for its control may lie outside the ordinary range of the ophthalmologists' work, as in the case of smallpox.

b. Environmental or occupational causes

An environment that supports the multiplication of the vectors of onchocerciasis is the prime determinant in that blinding scourge that affects the tropical rural people to about 15 degrees north or south of the African or American equator.

Although confined to such areas, onchocerciasis exceeds all the other disease causes of blindness in hyperendemic areas.

Environment is important also in trachoma and corneal ulceration, both infective and nutritional.

Specific traumatic chemical or radiational hazards of occupation need close preventive supervision in all countries. The enormity of the catastrophe at Bophal reminds us how vast the potential risks are and how ill-prepared we are for such emergencies, and for the immediate provision of social and economic rehabilitation of surviving but afflicted families.

c. Socio-cultural and behavioural causes

Powerful examples are provided by social factors that encourage transmission of diseases: like family crowding in measles, cerebro-spinal meningitis and trachoma. Lack of regular face washing is a main determinant in transmission of trachoma, and this forms an important target for intervention.

Perceptions of health and disease, coupled with previous experience of contact with health service, greatly influence acceptance of preventive or curative measures, the women being especially important in such matters.

d. Economic causes

Micro-economic conditions within families afflicted by blinding disability from onchocerciasis create a devastating feedback on health, leading to family disruption and desertion of villages with de-population of whole areas.

Economic conditions, both micro-economic and macro-economic, influence greatly the ability to take advantage of health services offered.

Macro-economic factors, including the North-South interface are powerful determinants in health and disease, and in the provision of health services.

e. Organizational causes

These refer to deficits in professional and technical organization for promotion of eye health and for prevention and relief of blindness.

They concern how ophthalmologists use their time and other resources: whether they train assistants and their cadres of workers to be able to take eye care right out to where people live. Organizational deficits also arise from damaging professional restrictions on who can be trained or allowed to do what procedures.

They concern the creation of new trainings and qualifications, certifications and registrations for specific much-needed tasks within a supervised health system.

They concern corresponding changes in job descriptions.

Organizational causes are probably the most potent causes of continuing massive avoidable blindness in the world today. They are the causes that the ophthalmologists could most easily attack.

The world has about 31 million people blind today, largely because so many of its inhabitants live beyond reach of even the most basic forms of scientific eye care.

By the turn of the century, what proportion of avoidable blindness will then be attributed to restrictive or laissez-faire attitudes in ophthalmology and its practitioners?

6. How does a country know that it has avoidable blindness requiring special action?

The nature and quality of national data on blindness varies widely; but figures higher than 0,2% indicate a substantial problem of blindness that is probably avoidable. Certain action is needed if 0,5% is approached or exceeded.

7. How should a country address this public health problem of avoidable blindness?

- a. National committee for prevention of blindness (PBL)
- b. National programme for prevention of blindness (PBL)
- c. Community eye health outreach systems for PBL
- d. Affordable logistic support systems for PBL.

a. National committee for the prevention of blindness

The World Health Organization's prevention of blindness programme urges such countries to establish a National committee for prevention of blindness to propose national policy and national targets for an action plan to constitute a national programme for prevention of blindness. Extensive published material and other technical assistance is available to member States on request, as is co-operation with WHO collaborating centres for prevention of blindness in various countries, both developed and developing.

b. National programme for prevention of blindness

Adoption of a national plan for prevention of blindness is often the key turning point in mobilising inter-institutional support and attracting national and international non-governmental assistance or bilateral inter-governmental funding co-operation.

However this whole strategy depends heavily on having an effective and strongly motivated chairperson who is well-versed in the priorities and implementation of community ophthalmology. It is important for the national committees to be multidisciplinary and include effective representatives of:

- the Ministry of Health;
- ophthalmology;
- national and international non-governmental organizations concerned with welfare of the blind and prevention of blindness;

- such other areas of medicine and public health as may be relevant in the country concerned;
- such others sectors or organizations as can provide public communication, publicity and teaching materials.

c. «Community eye health outreach systems» for prevention of blindness

1. Design of system
2. Vertical community ophthalmology component
3. Affordable support services

1. Design of community eye health outreach system

If the endeavour to reach neglected rural people is to achieve long term control of avoidable blindness it must be more than just a time-limited project. Each country with the problem needs to develop its own flexible, but institutionalized «Community eye health outreach system», or equivalent, designed to have self-modulating dynamism according to currently measured needs, and staff-regenerating capability - for as long as this special service is needed.

It is not necessary to create an entirely new self-contained vertical organization for this purpose. The system can be created using a minimum of staff integrating between the Ministry of health, academic and training eye centres and more peripheral provincial and district service centres which in turn reach out to primary health care units. Special efforts is required for the training and the supervising of trainers to bring the eye skills and organization for basic eye care and referral into the Primary health care (PHC) service. Thereby making maximum use of existing institutions and staff by combining a specialized vertical support organization with an horizontal approach to the people through Primary Health Care (PHC).

This system needs to bring streamlined affordable services comprising a balance of curative, preventive, educational and rehabilitative measures aimed at the predominant needs.

In this context, low cost spectacles are widely needed to rehabilitate persons disabled by correctable refractive errors. The costs of spectacles through existing urban commerce etc are prohibitive for these remote people.

For first line eye treatment by local PHC workers and others with limited training to be credible in remote communities, it must be linked with effective referral for surgery or consultation, and continuing training from district or provincial eye centres. Furthermore, the front line and referral treat-

ments must be seen to work. This depends on reliable logistic back-up with affordable basic supplies of medicines, eye drops and low cost spectacles.

2. The «vertical» community ophthalmology component required to create and support eye care through primary health care

The strategy of Community eye health systems is to bring eye care to otherwise neglected «remote people» through on-going horizontal primary care systems. Because of the need for selected but specialized skills, with peripheral surgical back up, this can not be generated by, or maintained, by the PHC system alone. It must first be mobilized, trained and then supported from within the country's institutions for eye care, acting in close integration with the PHC system.

Content of the «vertical» community ophthalmology component

Plan, organize, train and supervise:

1. Epidemiological assessments and operational research (HSR)
 - for planning, monitoring and problem solving
2. Basic eye care through PHC
 - planning, training and supervision
3. Outreach surgical service
 - through mobile units or rotating district and other centres
4. Affordable but reliable logistic supply services
 - local production of eye drops
 - local production of low cost spectacles
 - bulk purchase and supply of selected basic medicines, eye ointments and dressing, etc.
5. In certain severe situations, the development of local rehabilitational training for blinded farmers etc.

3. Affordable logistic services for prevention of blindness

The supply lines from existing overloaded metropolitan and urban sources have commonly proved to be far too costly, unreliable and often quite inappropriate (e.g. polypharmaceutical steroid eye preparations).

The WHO prevention of blindness programme encourages local organization to solve this problem. Local manufacture of limited range of essen-

tial eye drops based in district, provincial or missionary hospital pharmacy, with distribution over relatively short distances and rapid use has provided a reliable and low cost answer in many places.

Similarly, the local manufacture of low cost spectacles has made the correction of disabling refractive errors an affordable service.

8. What should the world expect from its ophthalmologists in international co-operation for control of blindness?

International co-operation has been a well established feature in ophthalmology, so the world should expect this to continue through ever more clearly focused understanding of the multifactorial origins of blindness and with ever more streamlined frameworks for co-operation.

Diverse motivations urge international co-operation across the potential barriers of geography, race, religion and history. These complexities are compounded by the diversities of philosophy and motivations, be they single or multiple:

1. humanitarian, for relief of unnecessary and avoidable suffering, with financial aid and/or with technical and scientific co-operation;
2. religious witness, or evangelism, with health care;
3. scientific research advancement;
4. personal, institutional or national academic advancement;
5. personal, corporate or national fiscal gain or trade opportunities;
6. political ambitions, or military strategic reasons.

The way ahead

Time does not permit discussion of these motivations but the world surely expects its ophthalmologists to help less fortunate countries through bringing together co-operation of such non-governmental agencies, international governmental agencies (like WHO), local or national non-governmental agencies and governments as are prepared to help ophthalmologists and others to co-operate with colleagues in less fortunate countries. This co-operation being aimed at helping them to solve their problems in controlling blindness in ways that they can sustain:

- through the application, in various places, of widely differing solutions;
- through respecting the right of the ophthalmologists of each country to regulate their own activities so they can best serve the needs of all peoples in their country for the control of blindness.

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Fascicule I – Cent cinquantième anniversaire de l'Indépendance vaudoise.

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Fascicule IV – Discours prononcés à l'installation de M. le professeur F. Cosandey en qualité de Recteur pour la période de 1948 à 1950, le 28 octobre 1948.

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Fascicule XV – Médaille Gonin.

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Fascicule XVII – Prix Arnold Reymond décerné à M. le professeur Hermann Weyl, le 11 juin 1954.

Fascicule XVIII – Discours prononcés à l'installation de M. le professeur Edmond Grin en qualité de Recteur pour la période de 1956 à 1958, le 8 novembre 1956.

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- Fascicule XXXVII* – Dies academicus 1970 – Inauguration du Collège propédeutique de la Faculté des sciences de l'Université de Lausanne-Dorigny.
- Fascicule XXXVIII* – Dies academicus 1971 – Prix et concours.
- Fascicule XXXIX* – Dies academicus 1972.
- Fascicule XL* – Centenaire de l'Ecole de pharmacie.
- Fascicule XLI* – Dies academicus 1973 – Prix et concours.
- Fascicule XLII* – Inauguration du bâtiment des Sciences physiques, le 14 février 1974.

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