yield medical problems of a magnitude rarely enccuntered even in war time, while as far as large scale diving is concerned such conditions have never been previously met. Providing efficient health care for these populations is both challenging and difficult. Working conditions both above and below the sea combine to present problems which are unusual and for which, in many cases, solutions are not readily available. A body of expertise is urgently needed together with people capable and prepared to carry out research into the problems arising from these environmental conditions. To this end the University of Aberdeen has set up, in collaboration with some of the principal oil companies, an Institute of Environmental and Offshore Medicine.

At the same time many aspects of the health care and surveillance of the offshore working population need to be regulated and controlled. Moreover the problems do not stop offshore—even rig workers must come ashore sometime. This combined with the influx of shore-based support industries often employing workers accompanied by their families has led to a need for augmentation and redeployment of medical care services. Especially affected are the general practitioners in some of the more isolated localities, and indeed in a few places medical care has not been readily available. Despite this, too much should not be made of the effects, somehow always assumed to be adverse, of the gas oil industry on the local mores and ecology. As far as health care is concerned some groups of medical practitioners have risen to the challenge magnificently.

There is much to be sorted out, not only at the level of who does what but also at departmental levels in Government. It is to this process that the committee should apply its inquiries and, based on its findings, suggest solutions acceptable to Government, industry, and the medical profession.

[1]*British Medical Journal*, 1975, 1, 410.

Treatment of Senile Macular Degeneration

There are over 100 000 blind persons in Britain, and the biggest single cause is senile macular degeneration. Though this condition has long been recognized its natural history was unravelled only in 1967 after the introduction of fluorescein angiography.[1] By this technique not only is it possible to record the vascular architecture of the retina in great detail, but abnormal vascular malformations can be identified, defects in the retinal pigment epithelium can be revealed, and the abnormal accumulation of fluid between the various retinal layers can be assessed.

In old age it is very common to find changes in the membrane (Bruch's membrane) beneath the retinal pigment epithelium and in the epithelium itself. Drusen or colloid bodies situated on Bruch's membrane represent abnormalities in these structures. Occasionally the pigment epithelium becomes separated from Bruch's membrane, and blood vessels may grow into this space from the choriocapillaries through breaks in the membrane. Both the detachment of the pigment epithelium and the abnormal blood vessels can be identified by fluorescein angiography. The abnormal capillaries may bleed, and they may be associated with the formation of subretinal hard exudates and pigment accumulation. The overlying neuroretina may show cystic macular oedema and serous detachment. Eventually the vascular complex may fibrose and give rise to the classical picture of senile disciform macular degeneration.

Clinically, the patient will often present with visual loss in one eye due to an advanced stage of this disease, though the other eye may only be slightly affected. In an excellent study on the natural history of senile disciform macular degeneration Teeters and Bird[2] at Moorfields Eye Hospital found that the fellow eyes become affected by this disease at the rate of 12% per year.

Is there anything that can be done to prevent the progress of this very common and seriously disabling condition? Certainly once the fibrous stage of the disease has been reached no treatment is available, though often better use of any remaining vision can be achieved by the intelligent and practical application of low visual aids.[3] It does appear, however, that at an earlier stage of this condition—the stage of pigment epithelial detachment or even after the development of sub-retinal neovascular membranes—treatment is often effective.[4-6]

Identification of the pigment epithelial detachment by fluorescein angiography allows it to be treated by photocoagulation, either directly or, where it is situated under the fovea, along its lateral margins. Once a neovascular membrane has developed then much heavier photocoagulation is required, and this can therefore be applied only if the blood vessels are not situated beneath the fovea. Considerable skill is required as it is important to identify the lesions exactly; and the most satisfactory delivery system for photocoagulation is a slit lamp which uses the argon laser as a source of light energy.[7] This method allows exact localization and treatment by a beam of light with a diameter as small as 50 μm. In a recent study[8] 83 senile disciform lesions were treated in this manner. Twenty-four of these were due to retinal pigment epithelial detachment alone; 21 of these detachments flattened and the visual acuity improved in 15 patients. In the second group of 59 vascular lesions 43 flattened and 38 achieved a visual improvement. These results compare very favourably with the natural history of the condition.[2]

Several implications follow from the development of this new form of therapy. First, senile macular degeneration is no longer a dustbin diagnosis. Cases have to be carefully studied. If only one eye is affected then the patient will have to remain under supervision in case the other eye develops treatable lesions, and even if these occur, then continual follow-up is required. Secondly, expensive apparatus is required, both in order to diagnose the condition (by fluorescein angiography) and to treat it (by photocoagulation), and obviously this can be supplied only to a small number of centres. Finally, and most important, knowledge and apparatus are of no value if the skill and manpower to use it are not available. The most expensive item is not the hardware but the staff trained to use it. Complex ophthalmic care will become increasingly selective and can only become comprehensive with a great extension and more intelligent use of our ophthalmic services.

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[3] Silver, J., *Transactions of the Ophthalmological Society of the United Kingdom*, 1972, **92**, 479.
[4] Little, H. L., Zweng, H. C., and Peabody, R. R., *Transactions of the American Academy of Ophthalmology and Otolaryngology*, 1970, **74**, 85.
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[8] Bird, A. C., *British Journal of Ophthalmology*, 1974, **58**, 367.