

the whole polytechnic. The final cost of the buildings is about £1.5 million, to which sum can be added a further £1 million for equipment and for the adaptations to the old buildings.

#### PHYSICAL SOCIETY

### Rationalization Year

PHYSICISTS are still not gregarious, it appears. Although membership of the Institute of Physics and the Physical Society rose by about a thousand during 1968, the total membership of just over 14,000 represents only about half the qualified physicists in Britain. A part of the reason may be that physicists who qualify by means of university degrees lack the incentives for membership which engineering institutions have until recently enjoyed.

The IPPS has nevertheless made useful progress during the past year. It was active in helping to establish the European Physical Society in 1968, and has been collaborating with the institutes of mathematics and of electrical and electronic engineering on meetings. The proliferation in physics journals is a subject that has been taken to heart by the European Physical Society and, although the IPPS is making its own efforts to increase the circulation of its journals in the United States, a rationalization of physics journals in Europe is recognized as a high priority.

An extraordinary meeting of the IPPS was held in November 1968 to consider the proposal to apply for a Royal Charter. Although the general proposition was approved, some of the details encountered strong opposition and the IPPS will be holding a further extraordinary meeting at the end of this month to settle these points before submitting a petition to the Privy Council.

The IPPS can feel cheerful at the success of its various exhibitions in 1968. The Physics Exhibition seems to grow in popularity year by year, and the Physics at Work Exhibition—a new venture aimed at the 13–14 year age group—captured sufficient enthusiasm from both school teachers and pupils to warrant installing it as an annual event. Another new activity, the seminar for industrial physicists, will also probably become a regular feature of the IPPS calendar.

#### MEDICINE

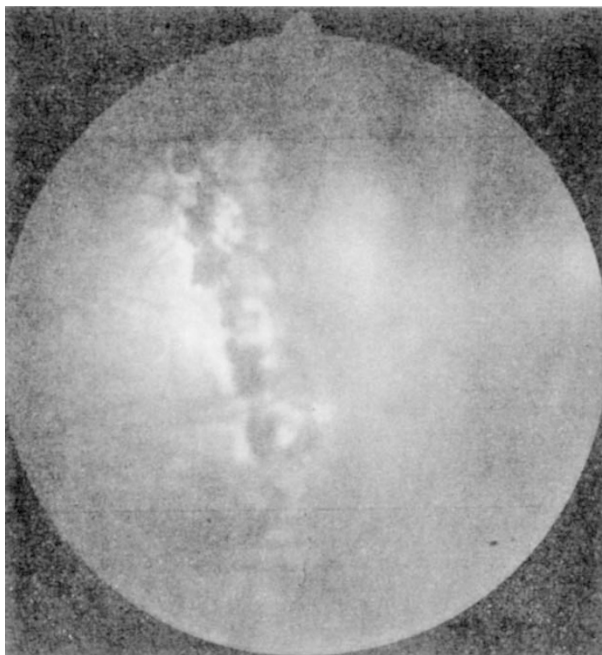
### Thin Future for Lasers

PHYSICISTS and doctors meeting in London last week to discuss the applications of lasers in medicine found common ground in emphasizing the need to look more carefully at the interaction of laser light with biological tissues before lasers will be much used in treatment or diagnosis. The chief uses of lasers seem to be in ophthalmology, where they are now almost accepted as tools to treat particular diseases of the retina, and in surgery where they can be used for incising or destroying tissue. One problem is that the instrumentation is still primitive and it is difficult to interest laser manufacturers in this field, while many surgeons are unwilling to try the techniques until suitable instruments have been developed. The idea behind last week's conference, organized by the Institute of Physics, the Royal Society

of Medicine, the Ophthalmological Society of the United Kingdom, the Biological Engineering Society and the Hospital Physicists Association, was to bring physicists and clinicians together to discuss these problems.

Intense light sources are used in ophthalmology to treat conditions such as detached retina by forming a scar joining the retina to the adjacent choroid layer; the advantage of using lasers is that they can be precisely focused and require much shorter exposure times than more conventional light sources so that anaesthesia is not necessary and the patient can look in the direction required by the surgeon. The only laser based medical instrument which has so far been commercially developed is the laser ophthalmoscope, and three of these, developed by the French Temkine & Cie, Siemens (UK) and the International Research and Development Co. Ltd, were displayed at the exhibition associated with the conference. They are hand-held ophthalmoscopes with a ruby laser built into the handle.

Lasers for surgical applications are still in the experimental stage, but the attractive features here are precision and the fact that high power focused beams can cut through tissue, sealing off most of the blood vessels as they go. The continuous wave CO<sub>2</sub> laser is the most convenient to use, but pulsed ruby, neodymium or argon systems are also effective. The problem with these high power systems is to make accurate measurements of the energy densities received, and Dr L. Goldman from the University of Cincinnati complained that investigators often spend more money, time and effort on calibration than on the laser system itself. It seems possible that lasers will be used to cut out or burn out certain tumours, and the most



A temporal detachment of the retina associated with a retinal dialysis effectively limited by multiple laser applications. Left, normal retina; right, blurred area of detachment; centre, line of laser applications sealing off detachment. (Photo by courtesy of the International Research & Development Co. Ltd.)