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THE AUSTRALIAN NATIONAL UNIVERSITY

RESEARCH SCHOOL OF BIOLOGICAL SCIENCES

ANNUAL REPORT ON THE ELECTRON MICROSCOPE UNIT - 1970

The Hitachi Electron Microscope (HU-11E) : During the last eighteen months, the new Hitachi has been used more and more until it is now in the opinion of one of the servicemen, the most heavily used microscope in Australia (approximately 6,000 micrographs taken in the last year). Initially, use of the J.C.S.M.R. facilities was sought to relieve the strain on our facilities. Although some assistance was forthcoming, the J.C.S.M.R. electron microscope committee advised the Chairman of the R.S.B.S. electron microscope committee (meeting on 7 October 1969) that the future workload on its microscopes would soon approach 140 hours a week, so that naturally, they were reluctant to make any committments in this respect. Accordingly, the committee in consultation with users of the Hitachi, implemented a set of fairly restrictive regulations to make possible the most efficient use of microscope time available in the R.S.B.S. This appears to have worked out quite well. However, the microscope is now usually completely booked out during working hours, and is also frequently used for long periods outside normal working periods. This creates problems particularly with heavy users of the machine, but these are by no means intolerable.

The machine itsself has been going quite well. Earlier on, several problems were encountered, necessitating it being out of action for some weeks. More recently, the servicing has improved considerably and we have had few hold-ups. In view of the number of people using the machine (many quite inexperienced), the Chairman considers that it has run surprisingly well.

Ancillary equipment : During the year, the committee discussed future equipment needs, and some of these were implemented. The unit now has three Reichert microtoms, and usage on them varies considerably from light to quite heavy. Microtoms have tended to be booked fairly solidly, but saturation has not been approached except on a few occasions. The vacuum evaporator has functioned with few breakdowns. There do not appear to be any deficiencies in other main items of equipment.

Print processing : The considerable delays (e.g. up to six weeks) in getting proof prints done caused a good deal of complaint. However, now that the photographic unit has a person employed full-time whose primary duty is proof-printing, the situation is now excellent, with proof prints generally arriving back within 2 - 4 days of the plates being developed.

The new microscope : During the last few months, the committee was informed of the probable purchase of a new microscope. After a visit to Japan by Professor Horridge and Mr Hardman, an Hitachi HU-200F was chosen, a medium high voltage machine which will considerably extend the scope of the work that could be undertaken by R.S.B.S. users. The committee was also informed of interim plans to house the new machine in the present building. The Chairman expressed considerable reservations as to the repercussions this move would have on the already very overcrowded space available. However, there seems to be no better alternative , and it is hoped these fears will prove groundless. However, already the present

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microtome room which forms part of Mr Whitly's office, has serious deficiencies. Six separate users have complained to the Chairman of severe thermal instability of the machines and also of the large amount of dust in the room which contaminates water baths and specimens. Efforts are being made to overcome these particular problems (e.g. by installation of curtains) and the results will be evaluated in the next meeting of the Committee.

J. Pickett-Heaps
Chairman