

and others from industry to the technique of planning the work of engineering workshops which is being developed at Harwell (and which is known as WASP). The computer programme is intended to make the most efficient use of men and machines in the workshops, where something like £1.5 millions a year is spent at Harwell. Those in charge of WASP estimate that savings of between 20 and 30 per cent (either in money or in men) would be available if it were habitual for engineering workshops to plan their work by computer. The savings to be expected are not merely those of more efficient use of the workshop itself, but also reductions of indirect costs arising from the way in which expensive components have often to wait for weeks or longer for their turn on a machine tool.

One hundred people from industrial companies of all kinds, 90 per cent of them graduates, attended the first course on October 11 and 12. Nearly as many have already enrolled for the second course on October 25 and 26. As well as the exposition of the WASP programme by the staff of Harwell, there are also contributions from Rolls-Royce and Philips (Eindhoven), where similar systems of production control for engineering workshops have been developed and applied. At Harwell it is reckoned that the most efficient use of the WASP programme requires more or less continuous access to a computer. It is, however, possible to use the system through a computer centre and it is thought that up to half an hour a day of computer time would be necessary for the efficient planning of the work of an engineering workshop with 150 people.

A Relict Marsupial

IN August this year a small possum, the size of a rat, was captured alive at a ski-hut at Mount Hotham, Victoria, by Mr. R. M. Warneke, Senior Research Officer of the Fisheries and Wildlife Department, Victoria, Australia. The animal is at present being kept in Melbourne where it was taken by Dr. K. Shortman of the Walter and Eliza Hall Institute. The animal is apparently another example of a relict species which has managed to survive in an isolated area. The alpine environment in which it has been found is rigorous. Externally the animal is remarkably similar to the long-tailed form of *Cercartetus* (= *Eudromicia*). It resembles, for example, the species found in New Guinea and north-east Queensland. An examination of the teeth of this specimen under partial anaesthesia revealed, however, the long straight incisors and huge sectorial premolars typical of *Burramys*. That the animal is indeed *Burramys parvus* seems certain, but confirmation will have to be postponed until the skull is available.

The *Burramys* has hitherto been known only from fossil material. The original fragments described by Robert Broom in 1896 (ref. 1) were found in the Wombeyan Caves in New South Wales, but more recently a number of mandibles and other bone fragments were found in a cave deposit in eastern Victoria. Because other parts of the fossil skeleton are missing, speculation about its possible affinities with other species was centred on the remarkable premolars, and links with the Macropodidae were suggested. Eventually, however, Ride revised its status and showed it to be a phalangerid. In 1964 he concluded² that, most

probably, "*Burramys* is a member of an aberrant line of Phalangerinae".

Examination of the living animal removes all doubt of this. It is a largish pigmy possum, soft brown-grey on the back, with darker colour in the mid-dorsal region especially on the head. The light underparts are creamy with slightly yellowish tonings. The body is relatively stout with short limbs and the tail is very long and thin without any suggestion of incassation. The body fur, which is very fine and dense, extends on to the basal half inch of tail and then terminates abruptly. The remainder of the tail is sheathed with pronounced epidermal scales overlain by a sparse covering of short hairs. The shape of the head is strongly reminiscent of *Gymnobelideus*, but *Burramys* does not possess well defined facial markings or a median stripe. Total length is 275 mm—tail 153 mm, ear 20 mm, and weight 55 g.



Fig. 1.

The feet are of exactly the same form as those of *Cercartetus nanus*, except that certain of the striated pads on the manus are of a different shape. In *C. nanus* the hypothenar is crescentic in outline whereas the other pads are oval. In *Burramys* only the third and fourth interdigitals are oval, the other three pads being crescentic. The terminal pad of the clawless hallux is expanded but those on the other digits are only slightly so. The claws on all digits, save the syndactylous pair on the pes, are very short and are brought into use only by strong flexure of the digits (see Fig. 1).

The scrotum is not pendulous as in most marsupials but is closely fused with the abdominal wall as in *Cercartetus* and *Acrobates*.

¹ Broom, R., On a small fossil marsupial with large grooved premolars, *Proc. Linn. Soc. N.S.W.*, **10**, 563 (1896).

² Ride, W. D. L., A review of Australian fossil marsupials, *Journ. Roy. Soc. W.A.*, **47** (4), 97-131 (1964).