puparui Stream, Chateau Tongariro, L, M. Winterbourne, ?-v-64CM. Waipuna Stream, National Park, L, D. R. Cowley, 23-ii-65, UA. Ohakune, LA, A. L. Tonnoir, 8-iii-23, CM; L.J.D., 13-x-60, EDL. Akatarawa River, L, L.J.D., 11-x-60, EDL. Mathew Stream, Wellington, LP, S. G. Moore, ?-vi-65, CM.

LARVAL TERATOLOGY

Larvae of New Zealand species of blepharocerids are very uniform in their morphology throughout their area ranges. This may be the result of serious defects or mutations being removed from the population by the rigorous habitat occupied by the larvae.

Larvae collected from frequently flooded streams often show scar-marks on the dorsal surface. These are probably the result of stone damage. The scars are quite distinct from the following abnormalities:

Neocurupira campbelli

Fourth Instars

(a) Loss of ⅔ of right side of both 5th median and anal divisions (two examples).

(b) Posterior margin of anal division shallowly concave medially; black posterior hairs absent (one example).

Neocurupira chiltoni

Fourth Instars

(a) Posterior margin of anal division notched medially; strong posterior hairs absent from notched area (one example).

(b) Loss of ⅔ of right side of both 5th median and anal divisions (one example).

Neocurupira hudsoni

Fourth Instar

(a) Complete loss of right 7th proleg; only one posterior anal gill filament, the latter being placed medially (three examples).

Second Instar

(a) Complete loss of left 7th proleg (three examples).

Peritheates turrifer

Third Instar

(a) Left 7th proleg displaced anteriorly to constriction between 5th median and anal divisions, proleg protruding at right angles to body axis, similar in shape to first instar proleg (one example).

These abnormalities could be predator damage but because of their similarities it is considered that they are of a genetic nature and that they may indicate how the Edwardsininae and *Apistomyia* larvae evolved reduced anal divisions.

PHYLOGENY OF THE INDO–AUSTRALASIAN APISTOMYIINAE

From a study of the morphology of the family, Tillyard (1922b) considered that the Blepharoceridae arose in Jurassic times. Alexander (1958 and 1963), despite a lack of fossil evidence, on the basis of the virtual world-wide distribution of the Blepharoceridae, suggested that the family originated during the mid-Mesozoic or even earlier during the Permian.

Tillyard (1922b), Tonnoir (1923c), Kitakami (1950) and Alexander (1958 and 1963) considered that the primitive Edwardsininae were ancestral to the