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Two new monotypic, hypotrich families (Ciliophora, Hypotricha) from floodplain soil in Australia and Botswana, respectively

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Both species – not named here for nomenclatural reasons – are possibly endemics. Both have a unique combination of features suggesting them as new genera and families. The first species was discovered in soil and litter from the floodplain of the Murray River in Australia.

Morphostatic characteristics of Australian organism. Species 1

- size about 90 × 40 µm, conical/triangular
- a conical body shape as, e.g., *Psilotrichides*;
- a frontal plate as, e.g., *Stylonychia*;
- a minute dorsomarginal kinety on ventral side;
- a ridge at right margin of buccal cavity, as in the Psilotrichidae

Ontogenetic characteristics of species 1

- the oral primordium develops in a flat pouch covered by the cortex, similar to euplotids and oligotrichs;
- proter and opisthe develop independently;
- the proter endoral membrane produces a new paroral by lateral proliferation of basal bodies, similar to nassulids;
- the new opisthe adoral zone of membranelles curves so strongly to the right that the anterior half becomes oriented horizontally, as in oligotrichs;
- there are four ventral cirral anlagen in proter and opisthe. They produce two ventral cirral rows, three frontal cirri, and one buccal cirrus;
- the minute dorsomarginal kinety and the right row of marginal cirri originate de novo;
- each of the three dorsal kineties produces one long kinety and two short dorsal kineties of which the leftmost produces a caudal cirrus, a very unusual pattern not known from other hypotrichs but similar to the multifragmentation in several hypotrich families.

Species 2 was discovered in Botswana, i.e., in soil from a green part ("green river bed") of the Chobe river. It is ellipsoid and about 120 × 50 µm in size and has up to 15 µm long dorsal bristles; it resembles the oxytrichids, especially *Territricha* BERGER and FOISSNER, 1988 because the two rows of ventral cirri form an indistinct midventral pattern, and dorsal kinety 4 is produced by a split of kinety 3. This ciliate has a unique feature each in morphostatic and dividing specimens: first, the (oral) primordium is located and formed as in *Oxytricha*, viz., originates left and slightly anteriorly to the parental transverse cirri and produces the new opisthe oral apparatus and – via a short streak – the proter undulating membranes. Additionally, the buccal cirrus consists of six individual, minute rows of basal bodies. A second primordium, unique to the hypotrichs so far described, develops slightly anterior to mid-body between the right row of parental proter marginal cirri and the right row of ventral cirri. The eight cirral anlagen become primary primordia which organize new frontal and transverse cirri as well as new ventral cirral rows for both, proter and opisthe. (Supported by the Austrian Science Fund, Project number P26325-B16.)