

Scientific results of the Peru-Bolivia-expedition Dr. K. H. Lüling 1966:

## ***Pseudohemiodon (Planiloricaria) cryptodon*, a new species and subgenus from Peru (Pisces, Siluriformes, Loricariidae)**

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Our knowledge of the members of the family Loricariidae is fragmentary and the limits of the several genera and even of the subfamilies are not yet sufficiently known. In spite of this and in an attempt to help clarify generic limits, a generic name, *Pseudohemiodon*, that has remained in the synonymy of the type genus of the family from almost the time of its proposal by Bleeker in 1862, is re-established in the present paper. Although no material of the type species of *Pseudohemiodon* was available for examination, the discovery of a new species indicates that there are several reasons to maintain *Pseudohemiodon*. Moreover, it is divided here into two subgenera, *Pseudohemiodon* and *Planiloricaria*. Because of the peculiar and distinct structure of the new species, *Pseudohemiodon (Planiloricaria) cryptodon*, it seems justified to describe it based on only the one specimen at hand. A revision of the genus *Loricaria* is still in progress and shall be published in parts elsewhere.

### **Acknowledgements**

I should like to express my thanks to Mr. Hans Honing (Amsterdam) who kindly made the photographic illustrations of the new species; to Dr. P. Kähsbauer (Naturhistorisches Museum, Wien) for information on the type material of *Hemiodon platycephalus* Kner, 1854; to Dr. K. H. Lüling ("Zoologisches Forschungsinstitut und Museum Alexander Koenig", Bonn) for providing the specimen on which the new species is based; to Dr. H. Nijssen (Instituut voor Taxonomische Zoölogie, "Zoölogisch Museum Amsterdam") who gave me access to the fish collections and library in his care; and to Dr. S. H. Weitzman (Smithsonian Institution, National Museum of Natural History, Washington D. C.) for his valuable advice with the manuscript.

### **Measurements**

In the description of the specimen the axial length = the standard length plus the length of the middle caudal fin rays or the membrane between them; the head length is from tip of snout to end of occipital process; the head width is taken at the opercle, just before insertion of pectoral fin spine; the head depth is taken at the end of the occipital process; the snout length from tip of snout to anterior border of the orbital rim; the thoracic length is taken between spines of pectoral and pelvic fins; and the abdominal length is taken between spines of pelvic and anal fins. All other measurements are self-explanatory. The measurements were taken directly.

### ***Pseudohemiodon* Bleeker**

*Pseudohemiodon* Bleeker, 1862, p. 3 (diagnosis of a new genus; type species, by original designation: *Hemiodon platycephalus* Kner, 1854).

*Pseudohemiodon* has been considered a synonym of *Loricaria* (type species, by monotypy: *Loricaria cataphracta* Linnaeus, 1758) by all authors except Bleeker (1862, p. 3), Eigenmann and Eigenmann (1889, p. 37; 1890, p. 362, as a subgenus of *Loricaria*), and Miranda Ribeiro (1911, p. 114). In my opinion, there are sufficient differences between *Pseudohemiodon* and all other genera within Loricariinae, as they are currently understood, to re-establish *Pseudohemiodon* at full generic level.

*Loricaria* has the very long caudal filament in common with *Pseudohemiodon*; this is a character also found in other loricariid genera. *Pseudohemiodon* has the head very much depressed, broad in dorsal view, a more or less disc-like snout profile, small to very small eyes, no teeth in upper jaws, few teeth in the lower jaws, pelvic spines not very prolonged, and compared to *Loricaria*, a different lip structure (which, however, is not known in detail of the type species *P. platycephalus*). *Loricaria* has the head more or less triangular in frontal view, the snout pointed, eyes moderate in size, teeth in both jaws, pelvic spines very much prolonged, and a very broad lower lip with many short barbels.

The ultimate concept of the genus *Loricaria*, based on the nominal species already known, is still uncertain, for most of them have to be redescribed according to a standard procedure. For the present it seems best to consider *Loricaria* as having those characteristics of the type species plus several of the better described species. There are, however, several poorly described species which may belong to *Loricaria* (or may not) and these, when better known, may expand the limits of the genus in one direction or another, but so far as I can tell at the moment, not in the direction of *Pseudohemiodon*. The writer is working on a revision of *Loricaria*, parts of which are to be published soon.

*Pseudohemiodon* is divided into two subgenera in the present paper. The nominal subgenus includes species with broad, flat teeth (fig. 2 a), with an orbital notch, and with the pupil partly covered by a thin flap. A new subgenus, *Planiloricaria*, is proposed for the new species *Pseudohemiodon* (*Planiloricaria*) *cryptodon*. The species has simple, spoonshaped teeth<sup>1)</sup> (different from the bilobed spoonshaped teeth in *Spatuloricaria* Schultz, 1944), no orbital notch, and the pupil (of the extremely small eyes) without a flap.

*Pseudohemiodon* (*Pseudohemiodon*) Bleeker

Diagnosis: Head very much depressed, broad in dorsal view; more or less disc-like snout margin; small eyes; an orbital notch; a little

<sup>1)</sup> The most recent definition of the subfamily Loricariinae was given by Gosline (1947, p. 95). He states that the teeth are bifid, but by the pertinent inclusion of *Pseudohemiodon*, and species like *Loricaria macrodon* Kner, 1854, which have simple teeth, this definition must be altered slightly. Previous to a thorough revision of all recognized genera it seems quite difficult to present a satisfying definition of the group as a whole.

flap on pupil; a large labial fold; lower lip with short "tassels" ("Zotten" of Kner, 1854) at the edge; no teeth in upper jaws; 5 short, relatively broad teeth, somewhat curved at the outer edge, in each of the lower jaws; rather prominent ridges on dorsal parts of snout and head; (? male with) bristles along lateral parts of head; no dorsal filament; caudal filament present; pelvic spines not much prolonged (from Kner, 1854).

*Pseudohemiodon (Pseudohemiodon) platycephalus* (Kner)

(figs. 1, 2 a)

*Hemiodon platycephalus* Kner, 1854, pp. 89—91, pl. 1 fig. 6, and pl. 6 fig. 2 (original description, based on single holotype [now lost]; type locality: "Rio Cujaba", upper course of Rio Paraguay).

*Pseudohemiodon platycephalus*: Bleeker, 1862, p. 3 (name only; designation as type species of a new genus).

*Loricaria platycephala*: Günther, 1864, p. 258 (description after Kner, 1854).—Fowler, 1954, p. 99, fig. 701 (references).

*Loricaria (Pseudohemiodon) platycephala*: Eigenmann and Eigenmann, p. 37 (listed).—Eigenmann and Eigenmann, 1890, p. 362 (in key, after Kner), and p. 370 (listed; references).

*Loricaria (Loricaria) platycephala*: Regan, 1904, p. 247 (in key), and p. 295 (after Kner).—Ringuelet, Aramburu and Alonso de Aramburu, 1967, p. 405 (references).

This species was known only from its holotype. To my knowledge, there are no records of additional specimens.

Dr. P. Kähsbauer (in litt., January 8, 1970) informed me that the holotype is no longer extant. He presumes that it has been destroyed for he stated: "The type *H. platycephalus* is not here [Vienna Museum]. Perhaps Kner has made a dried specimen, which has been ruined and thrown away, later on. Many types of Heckel and Kner, preserved in dried state, have gone lost on this way." In his original description Kner (1854, p. 90) wrote: "... es muss jedoch vorläufig fraglich bleiben, ob sie mit Recht dieser Gattung (*Hemiodon* Kner, 1854, preoccupied, and replaced by *Reganella* Eigenmann, 1905; type species *Hemiodon depressus* Kner, 1854 → *Reganella depressa* zugezählt wird, da das k. k. Museum hiervon nur ein ausgestopftes Exemplar besitzt, ...".

Fortunately, Kner's description and figures (reproduced in this paper) are good and quite recognizable. There should be no difficulty in identifying newly found specimens of this species from the upper parts of the Rio Paraguay when they are collected.

*Pseudohemiodon (Planiloricaria)* **new subgenus**

Type species: *Pseudohemiodon (Planiloricaria) cryptodon* new species.

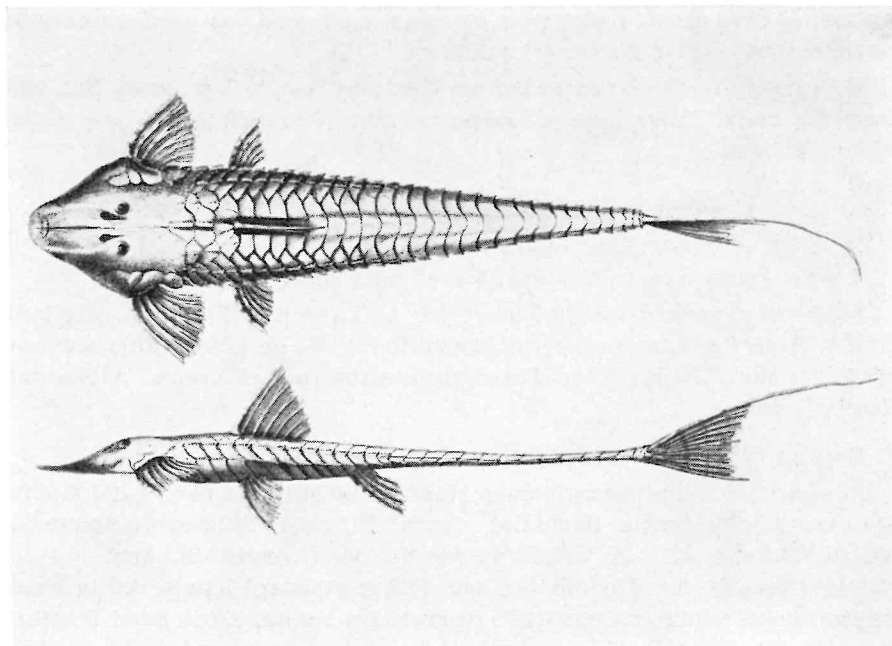


Fig. 1. *Pseudohemiodon (Pseudohemiodon) platycephalus* (Kner), reproduction of Kner's figures of *Hemiodon platycephalus*, holotype in dorsal and in lateral view.

Diagnosis (characters distinguishing this subgenus from the subgenus *Pseudohemiodon* Bleeker, 1862, interspaced): Head very much depressed, broad in dorsal view; more or less disc-like snout profile; very small eyes; no orbital notch; no flap on pupil; a narrow labial fold; lower lip with many long, fringed barbels; no teeth in upper jaws; 3 small, simple, spoonshaped teeth in each of the lower jaws; no prominent ridges on dorsal parts of snout and head; long dorsal filament; very long

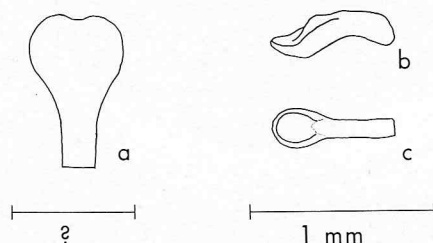


Fig. 2. a. *Pseudohemiodon (Pseudohemiodon) platycephalus* (Kner), tooth of holotype. Sketch after Kner; scale unknown. b. *Pseudohemiodon (Planiloricaria) cryptodon* new species, tooth from left lower jaw of holotype, in lateral view; c. same tooth, in dorsal view.

caudal filament; pelvic spines not prolonged; ability to develop bristles (? in the males) unknown.

Etymology.—*Planiloricaria* is from the Latin "planus", meaning flat, and from the Latin "lorica", meaning armour, with reference to the type genus of Loricariidae.

*Pseudohemiodon (Planiloricaria) cryptodon* **new species**

(figs. 2 b—c, 3—8)

Type locality: Peru: Río Ucayali near Pucallpa.

Material examined.—ZFMK/I/66/1717, holotype, 213.4 mm. standard length, from the type locality, collected by Dr. K. H. Lüling, July/August, 1966. In the "Zoologisches Forschungsinstitut und Museum Alexander Koenig", Bonn.

Description of the holotype.

*Morphometric and meristic data:* standard length 213.4 mm.; axial length 244.1 mm.; total length (including caudal filament) 562.6 mm.; predorsal length 62.5 mm. (3.2 in standard length); head length 49.1 mm. (4.1 in standard length); head width 47.9 mm. (4.2 in standard length, 1.0 in head length); head depth 16.2 mm. (12.5 in standard length, 3.0 in head length); snout length 22.9 mm. (8.9 in standard length, 2.1 in head length); orbital diameter 2.7 mm. (24.2 in head length); interorbital width 9.7 mm. (5.1 in head length); internasal width 5.6 mm. (9.7 in head length); dorsal spine length 88.1 mm. (2.3 in standard length); length first dorsal ray 38.7 mm. (5.2 in standard length, 1.2 in head length); length last dorsal ray 14.8 mm. (13.7 in standard length, 3.3 in head length); length dorsal fin base 18.4 mm. (11.0 in standard length, 2.7 in head length); anal spine length 30.7 mm. (7.0 in standard length, 1.6 in head length); pectoral spine length 40.5 mm. (5.0 in standard length, 1.2 in head length); pelvic spine length 30.2 mm.

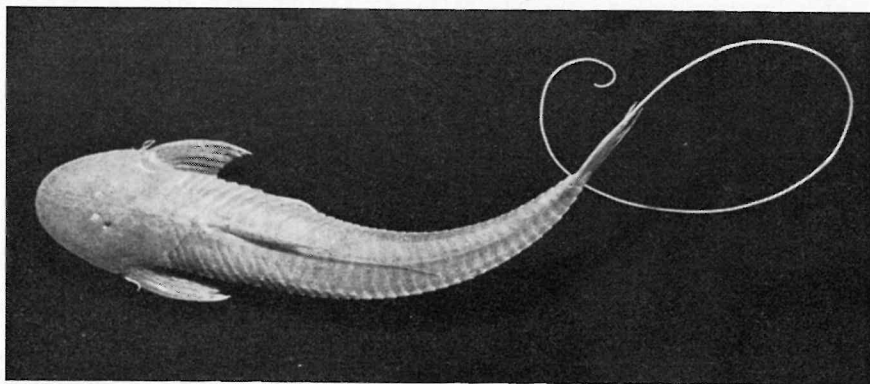
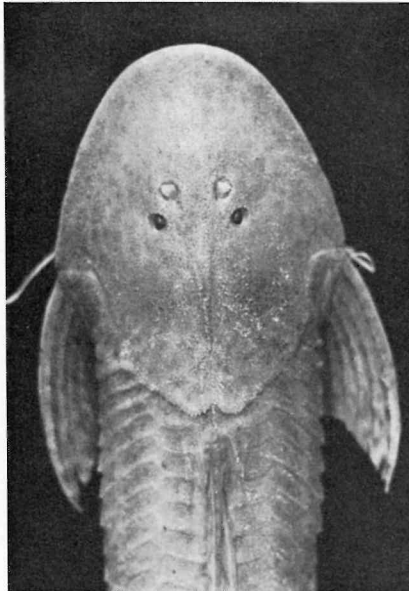


Fig. 3. *Pseudohemiodon (Planiloricaria) cryptodon* new species, holotype from above.



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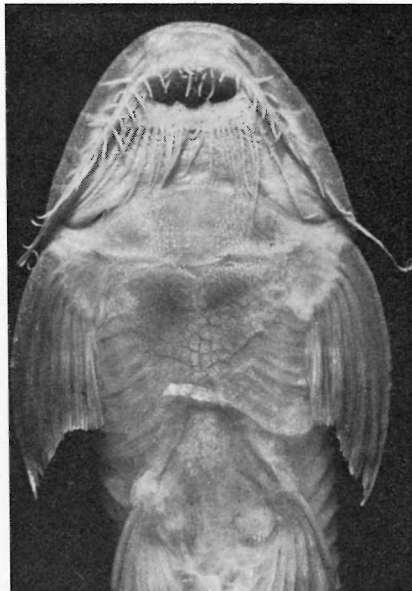


Fig. 4. *Pseudohemiodon (Planiloricaria) cryptodon* new species, head of holotype in dorsal view.

Fig. 5. *Pseudohemiodon (Planiloricaria) cryptodon* new species, head of holotype in ventral view.

(7.1 in standard length, 1.6 in head length); length upper principal caudal 'spine' (unbranched ray) 349.2 mm. (apparently easily broken off); length lower principal caudal 'spine' (unbranched ray) 39.1 mm. (5.2 in standard length, 1.2 in head length); cleithral width 48.1 mm. (4.2 in standard length, 1.0 in head length); supra-cleithral width 35.5 mm (5.7 in standard length, 1.4 in head length); thoracic length 33.0 mm (6.1 in standard length, 1.5 in head length); abdominal length 35.8 mm. (5.7 in standard length, 1.4 in head length); post-anal peduncular length 100.3 mm. (2.0 in standard length); depth caudal peduncle 3.9 mm. (15.9 in head length); width caudal peduncle 7.2 mm. (6.8 in head length); distance between anus and anal fin origin 18.8 mm. (10.8 in standard length, 2.6 in head length); longest barbel of upper lip 50.0 mm. (4.1 in standard length, 1.0 in head length); greatest axial length of lower lip 5.5 mm. (8.9 in head length); barbels of lower lip from 8.0 to 19.0 mm. (2.6 to 6.1 in head length).

Body scutes in longitudinal lateral series 39, last scute on caudal peduncle. Scutes between dorsal spine and caudal fin 34. Scutes between anal fin origin and caudal fin 27. Post-occipital scutes 2, predorsal shield not included. Between anus and anal fin origin 3 pairs of scutes; anal plate absent. About 9 oblong scutes on thorax between last pectoral fin ray and

pelvic spine. Dorsal fin I.6, last ray split to its base. Anal fin I.4, last ray split to its base. Pectoral fin I.6. Pelvic fin I.5. Principal caudal spines and rays I.10.I.

Two long rictal barbels with (left) eighteen and (right) twenty subbarbels of various lengths, long barbel partly uniting upper and lower lips. Nineteen short barbels on upper lip and on inner edge of mouth. Twenty-two barbels on posterior border of strongly papillated lower lip, each barbel

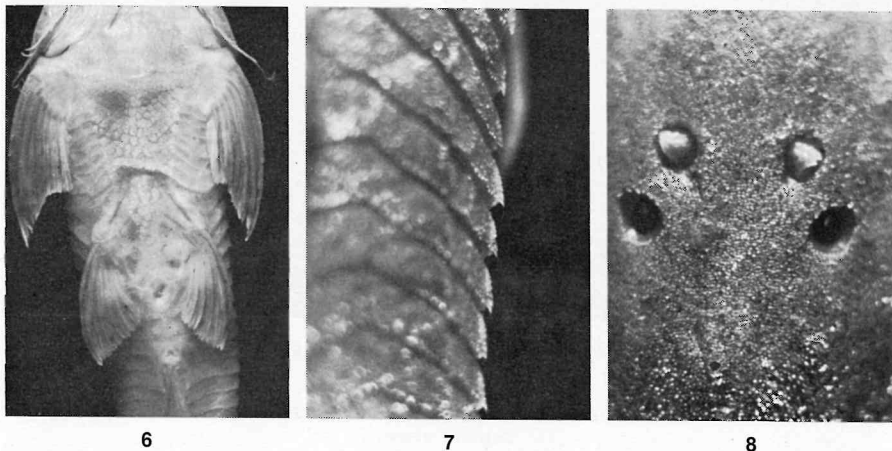


Fig. 6. *Pseudohemiodon (Planiloricaria) cryptodon* new species, ventral region of holotype.

Fig. 7. *Pseudohemiodon (Planiloricaria) cryptodon* new species, structure of denticles along lateral body scutes of holotype.

Fig. 8. *Pseudohemiodon (Planiloricaria) cryptodon* new species, close-up of inter-orbital area of holotype.

with numerous small subbarbels and papillae. No teeth in upper jaws; three<sup>2)</sup> small, simple, spoonshaped teeth in each lower jaw; teeth hidden in "gums" (hence the specific name). Teeth in the left jaw removed for examination.

Eye oval of shape, pupil without a flap. No orbital notch. A row of small, lanceolate denticles laterally along body scutes, where these curve ventrally. A second row of denticles dorsal to first row on same series of scutes, parallel with first row from nineteenth scute on right side and from eighteenth scute on left side, to caudal fin. Similar, though shorter denticles

<sup>2)</sup> Kner (1854, pp. 79—80), under his description of *Loricaria macrodon*, suggested the presence of replacement teeth in that species. It is quite possible that this phenomenon occurs frequently with loricariid fishes.



(larger and thicker than those covering body and head) at posterior part of occipital process; a double row on two succeeding scutes, and on first three scutes surrounding dorsal fin base. A number of relatively thick and large denticles on edge of scutes anterior to predorsal scute. All these denticles less developed than those in many other loricariids. A rather broad naked area surrounds pectoral fin base. Dorsal fin base seems also surrounded by a rather broad naked area, caused by skin covering dorsal parts of surrounding scutes.

Lower lip very narrow. Snout naked ventrally, except for profile, which is covered with denticles. Irregular structure of scarcely visible platelets covers head and snout dorsally. Belly is partly (figs. 5 and 6) covered with more or less irregularly arranged platelets. Spines of fins slender, terminally flexible, slightly thicker than adjacent rays; spines and rays covered with small lanceolate denticles, as on scutes. Pores of the sensory canal system few and minute, hardly visible; on opercular and cleithral region, and some along lateral body scutes, below rows of heavier denticles.

*Colour* (in alcohol).—Ground colour dirty white, scutes yellowish brown. Indistinct brown spots, smaller than eye, on head, on spine and rays of pectoral, dorsal (25 on spine), and anal fins, and on dorsal part of body. Ventral edge of caudal fin lobe brown, more conspicuous than all other pigmentation. A rather indistinct brown vertical bar on middle caudal rays.

*Relationships*.—*Pseudohemiodon* (*Planiloricaria*) *cryptodon* seems to be most closely related to *Pseudohemiodon* (*Pseudohemiodon*) *platycephalus* (Kner, 1854).

The only other known species (next to *P. [P.] cryptodon*) of Loricariinae with simple spoonshaped teeth is *Loricaria macrodon* Kner, 1854, known from the Rio Cujaba. *L. macrodon*, in general appearance resembles *L. cataphracta* and seems not closely related to *Pseudohemiodon* species.

The known species within Loricariinae with bilobed spoonshaped teeth are *Spatuloricaria phelpsi* Schultz, 1944 a (type species of *Spatuloricaria* Schultz, 1944 a), *Spatuloricaria atratoensis* Schultz, 1944 b, and probably *Euacanthagenys caquetae* Fowler, 1945 [or *Spatuloricaria caquetae* (Fowler, 1945)].

*Spatuloricaria phelpsi* (type locality: Venezuela: Maracaibo basin, Río Socuy; holotype in Smithsonian Institution, United States National Museum, USNM 121121), has bilobed spoonshaped teeth, "4/5 and 6/6 on each ramus of jaws", and was based on a single holotype, apparently a male, having the sides of the head with stiff setiform bristles. *S. atratoensis* (type locality:



Colombia: the Río Truando, tributary of Río Atrato; holotype USNM 93810), was also based on a single male holotype, of which Schultz (1944 b, p. 155) stated: "The teeth are exactly as in *S. phelpsi*—long, slender, with spoon-shaped bilobed tips, the inner lobe largest;...". The type species of *Euacanthagenys* Fowler, 1945, *E. caquetae* Fowler, 1945 (type locality: Colombia: Morelia, Rio Caquetá drainage; again based on a single male holotype in the Academy of Natural Sciences of Philadelphia, ANSP 71718), was described originally as having "...; teeth above 2—1?, simple, curved, 4—3 below, bilobate terminally;...". It was placed into the genus *Spatuloricaria* without any explanation by Fowler (1954, pp. 122—123, fig. 727).

*Etymology*.—The specific name *cryptodon* is from the Greek "krypton", meaning hidden, and from the Greek "odon", meaning tooth, in allusion to the well-hidden teeth.

### Zusammenfassung

Die Entdeckung einer neuen Art der Unterfamilie Loricariinae hat den Nutzen der Wiederaufstellung der von den meisten Autoren negierten Gattung *Pseudohemiodon* Bleeker, 1862, gezeigt. *Pseudohemiodon* besteht, der heutigen Kenntnis nach, aus zwei monotypischen Untergattungen, nämlich *Pseudohemiodon* Bleeker, 1862, für *Pseudohemiodon (Pseudohemiodon) platycephalus* (Kner, 1854) aus dem Río Cujaba, Oberlauf des Río Paraguay, und *Planiloricaria* subgen. nov., für *Pseudohemiodon (Planiloricaria) cryptodon* spec. nov., die 1966 im Río Ucayali bei Pucallpa/Peru gefangen worden war.

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