

**DESIGNATION OF LECTOTYPES AND NEOTYPES,  
SYSTEMATIC STATUS, AND BIOLOGICAL REMARKS  
ON RED RIVER CYPRINIDAE DESCRIBED  
BY NGUYEN AND DOAN, 1969**

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ABSTRACT

A poorly known paper describing new taxa of cyprinid fishes from the Red River basin of North Vietnam (NGUYEN & DOAN, 1969) is regarded here as validly published for purposes of zoological nomenclature in the sense of the ICZN. The present taxonomic status of the 2 new genera, 16 new species, and 1 new subspecies are reviewed on the basis of the original specimens, examined by us for the first time, and the hitherto unpublished original figures (see preceding paper by NGUYEN, 2007). No type specimens were designated in the original publication. Lectotypes are designated here from the material originally reported and figured for *Laichowcypris dai*, *Nicholsicypris dorsohorizontalis*, *Lissochilus laocaiensis*, *Puntius takhoaensis*, *Varicorhinus argentatus*, *V. erythrognys*, *V. microstomus*, *Onychostoma microcorpus*, and *O. brevicephalus*. Neotypes are designated for *Crossocheilus namlenensis* and *Erythroculter pseudobrevicauda macrothalmus*. Biological observations are reported for several of the taxa. *Laichowcypris*, a distinctive Cyprininae known only from the Red River basin, has not been seen since 1970 and might be extinct. *Lissochilus laocaiensis*, referred to the genus *Acrossocheilus*, apparently is a valid species. Recently collected material indicates it and other congeners are progynous hermaphrodites that undergo marked changes in coloration as they change from sexually immature juveniles to females to males. *Lissochilus longibarbus* is a junior synonym of *Spinibarbus macracanthus* (Pellegrin & Chevey 1936), which is in turn a junior synonym of *Barbus alloiopterus* Vaillant 1893. The species should be known as *Paraspinibarbus alloiopterus* (Vaillant 1893). The illustrated type specimen of *Crossocheilus benasi* Pellegrin & Chevey 1936 is designated as neotype of *Crossocheilus namlenensis* Nguyen & Doan 1969; the nominal species thus becomes an objective junior synonym of *Neolissochilus benasi* (Pellegrin & Chevey 1936). The holotype of *Erythroculter hypselonotus daovantieni* Banaresu 1967 from the Boi River in north Vietnam is designated as neotype for *Erythroculter pseudobrevicauda macrothalmus* Nguyen & Doan 1969; this nominal subspecies thus becomes a junior objective synonym of *Ancherythroculter daovantieni* (Banaresu 1967). *Hemibarbus longianalis* Nguyen & Doan 1969, preoccupied by *Hemibarbus longianalis* Kimura 1943, is permanently invalid.

Key words: *Acrossocheilus laocaiensis*, *Ancherythroculter daovantieni*, *Lissochilus laocaiensis*, *Neolissochilus benasi*, *Paraspinibarbus alloiopterus*, *Spinibarbus macracanthus*, progynous hermaphroditism

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## INTRODUCTION

A poorly known paper in Vietnamese by Nguyen Van Hao and Hoa Le Doan is an important contribution to knowledge of the freshwater fishes of the Red River basin (NGUYEN & DOAN, 1969). In addition to a review of the then current taxonomic status of various poorly known North Vietnamese cyprinid fishes, it includes original descriptions of 2 new genera, 16 new species, and 1 new subspecies, all in the family Cyprinidae. It represents the most substantial contribution to date to systematic ichthyology of the Research Institute for Aquaculture in Hanoi (RIAH No. 1) which houses the most comprehensive collection of the fishes of the Red River basin to be found anywhere. The present article is preceded by an English translation by Nguyen Van Canh (NGUYEN, 2007) and an article with 15 of the 17 hitherto unpublished figures by Nguyen Van Hao, one of the original authors (NGUYEN, 2007). The present paper concerns: 1) designation of lectotypes for all but two of the species level taxa; 2) designation of neotypes for the two species-level taxa remaining without lectotypes; 3) current taxonomic status of the generic and species level taxa; and 4) biological observations on some of the taxa.

For some years before and after 1969 Vietnam was politically, academically and scientifically one of the most isolated countries in the world. Vietnamese ichthyologists had virtually no contact with colleagues in any other country (Mai Din Yen, pers. comm., 1999). They taught each other and decided amongst themselves how to report on fish species. Some internationally accepted conventions were not followed. The work by Mai Din Yen (MAI, 1978) as well as that of NGUYEN & DOAN (1969) reflects this isolation. New fish species were proposed in both of these works without designation of type specimens. Many specimens are reported on but none are referred to by institutional catalog numbers.

In the present paper all of the specimens used in the accounts of new species by NGUYEN & DOAN (1969), although not named in the paper as such, are regarded as syntypes, and hence eligible for lectotype designation. Most of these specimens are in the fish collection of the Research Institute for Aquaculture No. 1 in Hanoi. Whenever they could be identified, the specimens originally drawn for inclusion in NGUYEN & DOAN (1969) but not published until NGUYEN, V.H. (2007) (preceding article) are designated as lectotypes. They have been identified as such on the basis of a combination of information: labels on the specimen bottles including the names given to the new species and often the same locality data; scale bars in mm on the original figures making it possible to calculate the approximate or in some instances the precise standard lengths of the specimens figured; and from the drawings themselves. These are of such high quality that not only the species but sometimes the actual specimen which served as the basis for a drawing can be identified with near certainty.

Lectotypes are designated for all of the new species level taxa described by NGUYEN & DOAN (1969) for which: 1) the original drawings are available (see preceding article); and 2) specimens are present in the RIAH fish collection corresponding to the drawings. In a few instances either the drawings are missing or no specimens could be found corresponding to the drawings. These instances are considered below. The order of presentation of the taxa follows that of the original paper (NGUYEN & DOAN, 1969).

Neotypes are designated for *Crossocheilus namlenensis* and *Erythroculter pseudobrevicauda macrothalmus*. As of consequences these nominal taxa become objective junior synonyms, respectively, of *Neolissochelus benasi* (Pellegrin & Chevey 1936) and *Anerythroculter daovantieni* (Banarescu 1967).

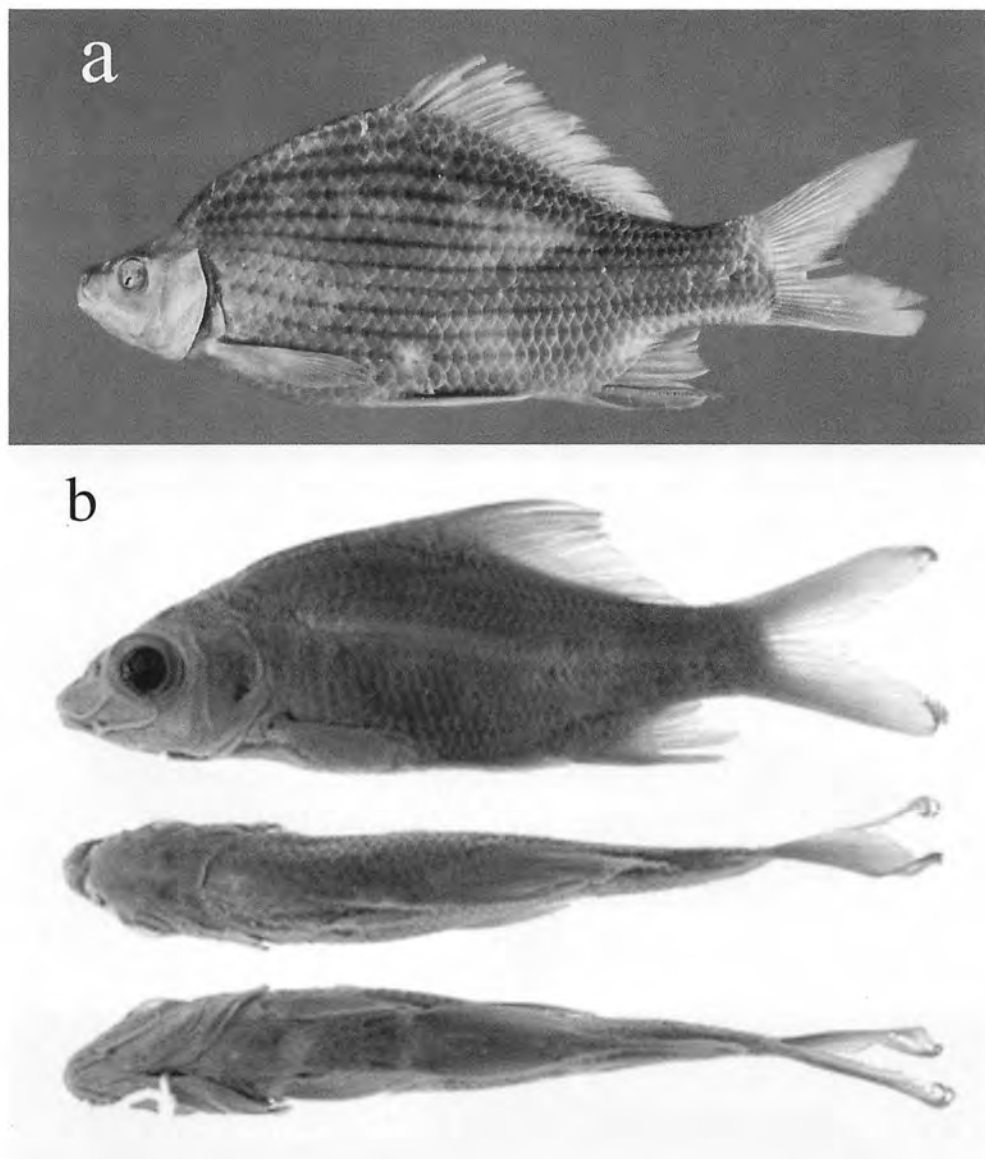


Figure 1. *Laichowcypris dai* (Nguyen and Doan 1969). a, 239-mm lectotype (RIAH 1016) (photo by first author); b, 59.7-mm lectoparatype (CAS 218975). (photos by Jon Fong).



Figure 2. *Opsarius macropterus* (Nguyen and Doan 1969). A highly tuberculate sexually mature male similar to specimens illustrated for *Paradaniops macropterus* Nguyen and Doan, 1969.

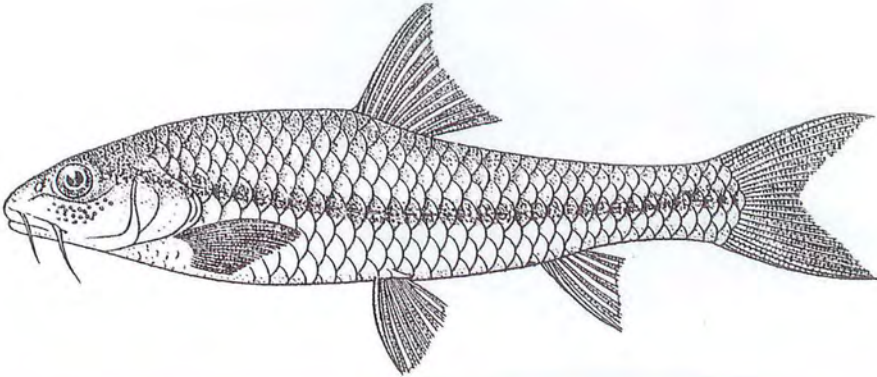


Figure 3. *Neolissochilus benasi* (Pellegrin and Chevey 1936). Above, drawing of the type specimen of *N. benasi* designated here as the neotype of *Crossocheilus namlenensis* Nguyen and Doan 1969 (from Pellegrin and Chevey, 1936). Below, a subadult or young adult *Neolissochilus benasi* (Pellegrin and Chevey, 1936), a valid species apparently endemic to the Red River Basin. By the present designation of a neotype, *Crossocheilus namlenensis* Nguyen and Doan 1969 becomes an objective synonym of this species.

The RIAH fish collection is almost entirely uncatalogued. During our visit the specimens designated here as lectotypes and some other specimens were assigned the catalog numbers reported here. It is hoped that the entire collection will be inventoried, catalogued, and made accessible for scientific research.

#### DESIGNATION OF LECTOTYPES AND NEOTYPES

None of the 17 new species-level taxa (16 new species and 1 new subspecies) proposed by NGUYEN & DOAN (1969) has had a type specimen designation. Here the specimens utilized in the original descriptions are regarded as syntypes. These specimens are deposited in the fish collection of RIAH No 1 (Research Institute for Aquaculture, in Hanoi). All of the new species were illustrated, and all but two of the illustrations are extant and have been reproduced in the preceding paper (NGUYEN, V.H. 2007). Lectotypes are hereby designated for 14 of the 17 nominal taxa. Whenever possible the specimen originally figured has been identified and designated as the lectotype. Neotypes are designated for two nominal taxa for which no specimens are extant in the RIAH collection, *Crossocheilus namlenensis* and *Erythroculter pseudobrevicauda macrothalmus*. By these designations they become, respectively, objective junior synonyms of *Neolissocheilus benasi* (Pellegrin & Chevey 1936) and *Archerythroculter daovantieni* (Banarescu 1969). The only nominal species of NGUYEN & DOAN (1969) for which neither lectotypes or neotypes are designated here are *Lissochilus brevispinis* and *Varicorhinus argentatus*. Although no specimens of either of these are extant in the RIAH fish collection, the figures published in the preceding paper (NGUYEN, V.H. 2007) should permit their eventual identification, after which neotypes may be designated for them also.

*Laichowcypris dai*. Lectotype RIAH 1016, 239 mm, Thi Lai Chow, 26 Jan. 1965.

This is the specimen figured (NGUYEN, V.H. 2007: fig. 1). There are a number of other specimens that should be regarded as secondary type specimens. The pharyngeal jaws and teeth and the first gill arch of the right side illustrated in the original drawing of *L. dai* are in the bottle with the lectotype.

*Nicholsicypris dorsohorizontalis*. Lectotype RIAH 1041, 71.5 mm, Cam Son, Bac Giang, 15 Sept. 1964.

The original account mentions 5 specimens of body length 49–74 mm, but only 2 specimens, 71.5 and 75.6 mm SL, were present in the RIA Hanoi fish collection in 1998. These are the only specimens of this taxon found in the RIAH fish collection in 1999. The 71.5-mm specimen from Cam Son, bearing a cloth tag numbered 11 64. 0344 and now catalogued as RIAH 1041, looks like it might be the specimen figured (NGUYEN, V.H. 2007: fig. 2).

*Paradaniops macropterus*. Lectotype RIAH 1036, 80.4 mm, Phong Tho, Lai Chau, 26 Jan. 1965.

The original paper mentions 5 specimens with body length of 74–80 mm. This 80.4-mm specimen, a mature male, highly tuberculate, with enlarged dorsal, pelvic, and anal fins, and breeding coloration, apparently is the specimen figured (NGUYEN, V.H. 2007: fig. 3). The original drawing has the locality “Nam Mu, Phong Tho.”

*Daniops nammuensis*. Lectotype RIAH 1036, 80.4 mm, Phong Tho, Lai Chau, 26 Jan. 1965.

The original paper mentions 2 specimens with body lengths of 60 and 80 mm. No specimens were found labeled with this name in 1999 and the figure (fig. 4 in the original publication) is missing. This nominal species has been interpreted by MAI (1978) and KOTTELAT (2001) as based upon the female of *P. macropterus*. In the absence of any evidence contraindicating their conclusion, the specimen designated as lectotype of *Paradaniops macropterus* also has been selected as the lectotype of *D. nammuensis*.

*Crossocheilus namlenensis*. Neotype MNHN 1935-0338 or 0339, "Laokay" (specimen illustrated in PELLEGRIN & CHEVEY, 1936: 226, fig. 4).

The original account of *C. namlenensis* mentions 3 specimens, body length 40–50 mm. These specimens had been missing for a long time already by 1999 (Nguyen Van Hao, pers. comm., Jan. 1999). Given the strong likelihood that this nominal species is the same as *Neolissochilus benasi* (Pellegrin & Chevey 1936) (see discussion below) the illustrated syntype of that species is hereby designated as lectotype of *C. namlenensis*.

*Lissochilus longibarbis*. Lectotype RIAH 1078, 194 mm, Ngoi Bo, Lao Cai, 20 Nov. 1963.

Many specimens of 143–390 mm are mentioned in the original account but the only specimen found at RIAH in January 1999 is RIAH 1078, 194 mm. This specimen bears a cloth label with "63.0348 Ngo". It apparently is the specimen drawn (NGUYEN, V.H. 2007: fig. 6). The standard length of the specimen drawn, calculated from the scale bar, is 192 mm.

*Lissochilus brevispinis*. No lectotype designated.

The original account indicates 3 specimens, body length 96–137 mm. No specimens were located found in the RIA Hanoi fish collection in 1999.

*Lissocheilus laocaiensis*. Lectotype RIAH 173, 38.7 mm, Trinh Quen, Lao Cai, 21 Feb. 1962.

*Lissocheilus laocaiensis* is treated as a valid species under this name by Mai (1978: 93) and by T. Nguyen (1997: 2; paper cited by Kottelat, 2001: 119, not seen by us). Kottelat (2001: 119) tentatively treats the species as a junior synonym of *Acrossocheilus clivosius* (Lin 1935) (type locality Kweiping, Kwangsi, China). We note a long history of taxonomic confusion and synonymization among several apparently closely related and perhaps synonymous nominal species including but not limited to *Acrossocheilus iridescens* (Nichols & Pope 1927) (type locality Hainan); *Cyclocheilichthys microstoma* Pellegrin & Chevey 1936 (type locality Ba Mun, Nam So, of the rivièrè Noire R., Tonkin, Vietnam [=Muang So, Nam Saw?, the same as that for *L. laocaiensis*?]); and *Acrossocheilus longipinnis* (Wu 1939) (type locality Li-kiang, Nan basin, South China (see Eschmeyer, 2007, and references cited therein). We suspect that this uncertainty about the number of species and their identification is due largely to the striking but poorly understood change in coloration as the juveniles grow to adulthood (figs. 4–5). The biological significance of this change apparently has not been investigated previously. Our investigations indicate it is linked to stages in sexual maturation, and that there are at least two species of *Acrossocheilus* in the Red River basin. The identifications of these species remain to be





Figure 4. *Acrossocheilus* sp. or spp. a, 63 mm, Nam Saw at Muong So, Red River basin, Vietnam, color pattern corresponding to type specimen of *A. laocaiensis*; b, Lai Chau market, 141 mm, mature female (?).

determined. Should it turn out that the Red River is inhabited by a single endemic species of this group, the name *A. microstoma* would have priority over *A. laocaiensis*.

*Garra laichowensis*. Lectotype RIAH 1052, 79.0 mm, Phong Tho, Lai Chau, 26 Jan. 1965.

The lot RIAH 1052 includes 3 specimens, 69.2–79.0 mm. The standard length calculated from the drawing and its scale bar is 79 mm. The 79.0-mm specimen appears to be the one drawn (NGUYEN, V.H. 2007: fig. 9). The locality written on the drawing is Nam Mu, Phong Tho.

*Puntius takhoaensis*. Lectotype RIAH 140, 91.0 mm, Nam Lay, Lai Chau, 29 Nov. 1965.

The lot RIAH 140 includes nine evidently conspecific specimens, 46.8–92.0 mm. The standard length of the drawn specimen, calculated from the scale bar on the drawing, is 92.6 mm. The 91 mm specimen, however, appears to be the specimen actually drawn (NGUYEN, V.H. 2007: fig. 10).

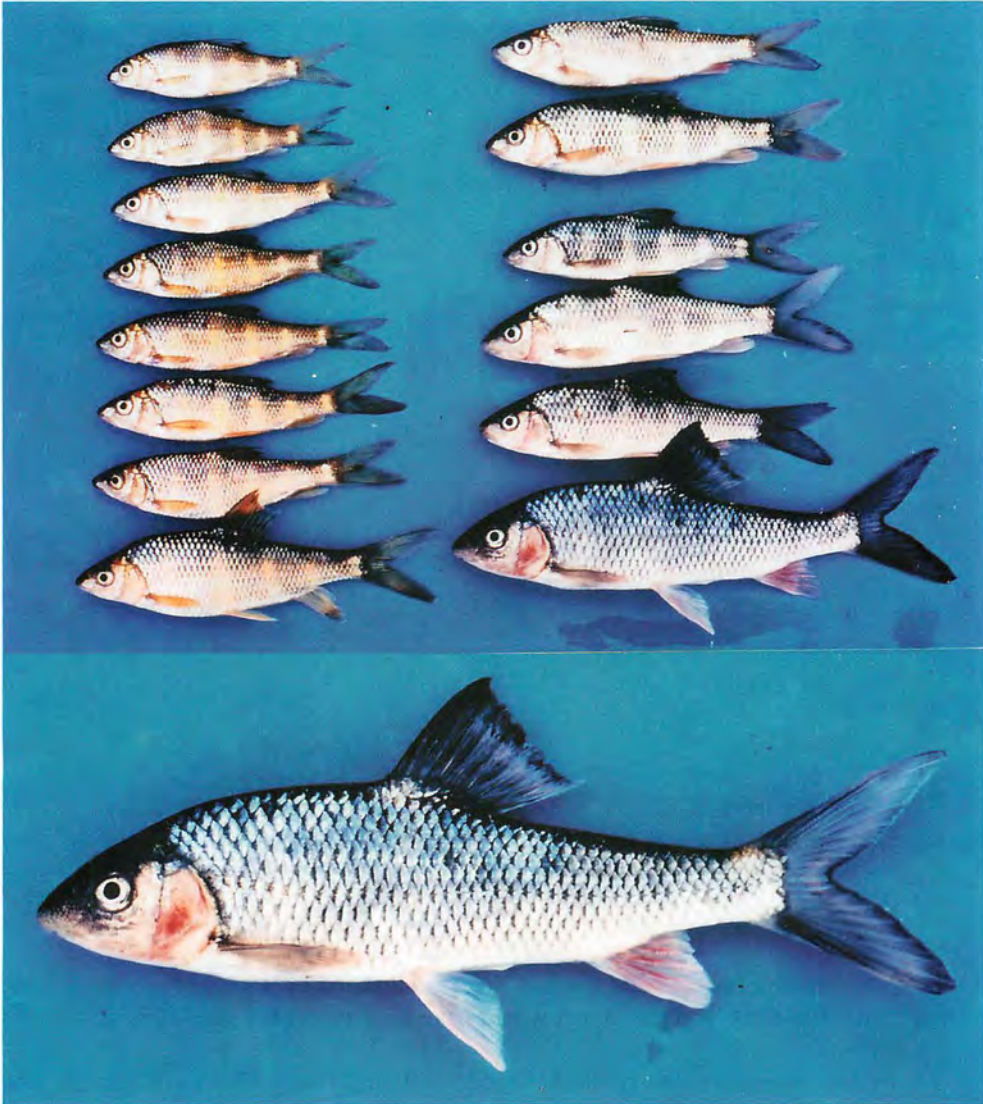


Figure 5. *Acrossocheilus* sp from Nam Sap, a tributary of Black River, Red River basin, 85 km SE from Son La on road to Moc Chau. This is our best sample illustrating the change in color pattern with sexual maturation (determined by examination of the gonads in the freshly caught specimens). Upper left row, late juveniles and sexually active females, 65.5–98.5 mm; upper right row, sexually active males, 85.0–157 mm. Below, the largest male, 157 mm.



*Varicorhinus argentatus*. Lectotype RIAH 67, 147 mm, Suoi Rut.

two specimens 72.6–147 mm with a label “*Scaphiodontichthys/Varicorhinus/argentatus*” (RIAH 67, Suoi Rut, 20 Nov. 1965). The 147-mm specimen apparently is the specimen drawn (NGUYEN, V.H. 2007: fig. 11). Based on the scale bar the SL should be 137 mm. The 72.6-mm specimen is not the same species.

*Varicorhinus erythrogenys*. Lectotype RIAH 1068, 141 mm, Suoi Rut, Hoa Binh, 20 Nov. 1965.

The lot RIAH 68 includes 2 specimens, 141–146 mm. The 141-mm tuberculate male appears to be the specimen drawn (NGUYEN, V.H. 2007: fig. 12). The standard length of the figured specimen calculated from the scale bar on the drawing is 139 mm.

*Varicorhinus microstomus*. Lectotype RIAH 1070, 131 mm, Suoi Rut, Hoa Binh, 20 Nov. 1965.

RIAH 70 comprises 4 evidently conspecific specimens with standard lengths of 98.7, 118.5, 122.5 and 131 mm. The standard length of the specimen drawn calculated from the scale bar should be 124 mm, but the 131-mm specimen appears to be the one illustrated (a blotchy spot near the middle of the body in the figure is an individual color feature present only in the 131-mm specimen) (NGUYEN, V.H. 2007: fig. 13).

*Onychostoma brevicephalus*. Lectotype RIAH 1087, 209 mm, Nam Na, Lai Chau, 10 Mar. 1965.

This appears to be the specimen drawn (NGUYEN, V.H. 2007: fig. 14). The standard length of the specimen figured, calculated from the scale bar, is 210 mm.

*Onychostoma microcorpus*. Lectotype RIAH 1405, 115 mm, Ban Trang, Lai Chau, 26 Oct. 1965.

This 115-mm specimen, in a jar that was labelled *Scaphiodontichthys microcorpus*, appears to be the specimen drawn (NGUYEN, V.H. 2007: fig. 15).

*Hemibarbus longianalis*. Lectotype RIAH 132, 116 mm, Muong Tung, Lai Chau, 18 Mar. 1965.

The lot RIAH 132 includes four evidently conspecific specimens with standard lengths 104, 116, 119, and 120 mm. The 116-mm specimen, with an upwardly directed caudal peduncle, apparently is the one that was drawn (NGUYEN, V.H. 2007: fig. 16). The length of the specimen drawn, calculated from the scale bar, is 116 mm.

*Erythroculter pseudobrevicauda macrothalmus*. Neotype: IBTS 626, holotype of *Erythroculter hypselonotus daovantieni* Banarecu 1967, collected in the Boi R., North Vietnam.

The unpublished original drawing of this taxon is missing. No specimens labelled with this name were found in the RIAH fish collection. The species was identified, without having seen either the figure or the specimen, as *Erythroculter hypselonotus daovantieni* by MAI (1978: 151). This identification is substantiated by the present designation, by which *Erythroculter pseudobrevicauda macrothalmus* Nguyen & Doan 1969 becomes an objective junior synonym of *Ancherythroculter daovantieni* Banarecu (1967).

## CURRENT SYSTEMATIC STATUS AND BIOLOGICAL OBSERVATIONS

*Laichowcypris* and *L. dai*.—Mai Din Yen referred to this species as *Laichowcypris day* (MAI, 1978: 29). T. T. NGUYEN *ET AL.* (1999) referred to it as *Cyprinus day* (paper cited by KOTTELAT, 2001: 21, 70; not seen by us). A similar conclusion was reached by KOTTELAT (2001: 21).

Whatever its generic status, *L.* or *C. day* or *dai* (the original spelling), with an unusually deep body and boldly striped color pattern similar to those in some other Southeast Asian Cyprininae generally assigned to *Cyprinus*, is a distinctive and impressive species. Individuals up to 6 kg were observed (Nguyen van Hao, pers. comm. 1998). Efforts by the authors to collect additional specimens were unsuccessful. The species reportedly was never observed in the huge reservoir formed by the Hoabinh Hydroelectric Dam built by the Soviets and completed in the 1960s. Apparently no specimens have been collected since 1971.

The fish surveys conducted by RIAH in the early 1960s obtained at least 10 specimens of this striking taxon. The original description mentions 10 specimens body length 49–60 cm, but this evidently is an error for 49 mm to 60 cm. In 1998 only 6 specimens could be located. In addition to the 239-mm lectotype designated above, there is a slightly larger fish of 287 mm from Suoi Tac Nghia Lo, with the date 11 November 1971. If this is the true date of collection, the specimens could not have been utilized in the original description, and hence could not be considered as a potential neotype. Such a simple interpretation is complicated however by the fact that the excised pharyngeal arch drawn with the 239-mm fish are from this specimen, and the drawing is dated “III 1969.”

A much smaller fish, kindly presented by Nguyen Van Hao to the fish collection of the California Academy of Sciences, is CAS 218795, 59.7 mm, Lai Chau Prov., 26 Jan. 1961 (date of collection possibly incorrect) (Fig. 1). This probably is the only specimen of *L. dai* in any museum collection other than RIA No. 1 in Hanoi. A radiograph of it shows 21+19=40 vertebrae.

*Nicholsicypris dorsohorizontalis*.—The species is recognized by Maurice Kottelat as potentially valid if NGUYEN & DOAN, 1969 is considered as a published work (KOTTELAT, 2001: 116–117). We have not researched the problem of whether *N. dorsohorizontalis* is congeneric with *N. normalis* (NICHOLS & POPE, 1927), the type species of *Nicholsicypris* Chu 1935.

*Paradaniops*, *P. macropterus*, and *P. nammuensis*.—*Paradaniops* is a junior synonym of *Opsarius* McClelland 1839 (type species *Opsarius maculatus* McClelland 1839). KOTTELAT (2001) pointed out, that *P. nammuensis* and *P. macropterus* are probably female and male of the same species, and selected *P. macropterus* as the senior synonym. He also suggested that *P. macropterus* might be a junior synonym of *Opsarius pulchellus* (Smith 1931). A freshly collected male specimen of *O. macropterus* in breeding condition is shown in Fig. 2. This differs sufficiently from breeding males of *O. pulchellus* to indicate that it probably is not conspecific with that species.

*Crossocheilus namlenensis*.—This name does not appear in MAI (1978) and apparently did not occur in print again until KOTTELAT (2001). Having seen neither type specimens nor original figure, the latter could only leave the species in *Crossocheilus*. From the original figure (NGUYEN, V.H. 2007: fig. 5) the species is clearly a *Neolissochilus*, and probably a

junior synonym of *N. benasi* (Pellegrin & Chevey 1936), a species originally described in *Crossocheilus* although it does not belong in the same subfamily. *Crossocheilus* is in Labeoninae, *Neolissochilus* in Barbinae. *Neolissochilus benasi* currently is recognized as a valid species (ESCHMEYER, 2007).

*Lissochilus brevispinis*.—This species was not mentioned by Mai Din Yen (1978) or apparently by any other author since its original description until KOTTELAT (2001), who indicated that it does not belong in *Lissochilus*. It is recorded in the online version of Eschmeyer's "Catalog of Fishes" (as of 9 Oct. 2007) as *Acrossocheilus brevispinus* with the (undocumented) remark "placed in *Acrossocheilus* based on current status of *Lissochilus*". A more likely generic identification is *Poropuntius*. There seem to be 2 or 3 otherwise undescribed species of this genus in the Red River basin of northern Vietnam (pers. obs.). *Poropuntius* species are often subject to intraspecific trophic polymorphism (ROBERTS, 1998). The resulting morphs differ strikingly in lips and horny jaw sheaths so that different individuals of the same species have mouth-parts resembling cyprinid genera such as *Acrossocheilus* and *Lissochilus*. If NGUYEN & DOAN (1969) is recognized as a published work, then *P. brevispinus* probably is a valid species without a type specimen designation.

*Lissocheilus laocaiensis* was treated as a valid species under this name by MAI (1978: 93) and by T. Nguyen (1997: 2; paper cited by KOTTELAT, 2001: 119, not seen by us). KOTTELAT (2001: 119) tentatively treated the species as a junior synonym of *Acrossocheilus clivosius* (Lin 1935). The latter species apparently is present in the Nan River basin but perhaps not in that of the Red River in northern Vietnam. The Red River has a smaller but very distinct species clearly distinct from *A. clivosius*.

This species undergoes changes sex and coloration as it grows. Small fish less than 50–60 mm SL with undeveloped gonads have six thin black vertical bars on a yellow body. Medium-sized fish lose this coloration. The narrow dark bars are replaced by wider and paler bars. Fish with this coloration well developed may have ripe ovaries. The largest individuals have no vertical bars at all. Instead the body has an overall pale bluish tint and the dorsal fin acquires a black margin. These fish are males. These observations, based mainly on two small population samples, documented by preserved specimens and photographs (figs. 4–5), indicate that this species is a progynous hermaphrodite. Individuals pass through three distinct color phases related to their sexual physiology: non-reproductive juveniles, reproductive females, and then reproductive males.

Further collections and study are needed on *Acrossocheilus* in the Red River basin. Meanwhile the name *A. laocaiensis* may be used for the species smaller than *A. clivosius* just mentioned that might be endemic to the Red River basin.

*Lissochilus longispinis* is based upon a subadult specimen of the species now generally known as *Paraspinibarbus macracanthus* (Pellegrin & Chevey 1936) (KOTTELAT, 2001: 34, fig. 43). The latter nominal species, however, is a junior synonym of *Barbus alloiopterus* Vaillant 1893 (holotype MNHN 1892–261, 132 mm, examined by the first author in Paris). Henceforth the species should be known as *Paraspinibarbus alloiopterus* (Vaillant 1893).

*Garra laichowensis* is not a *Garra*. It apparently belongs in the genus *Placocheilus* Wu (in Wu, Lin, Chen, Chen & He 1977: 382). The type species of *Placocheilus* is *Discog-*

*nathus caudofasciatus* Pellegrin & Chevey, 1936: 223, figs. 1–2 (type locality Song Da at Lai Chau).

*Puntius takhoaensis* should be referred to *Systemus*.

*Varicorhinus argentatus*, *V. erythrogyenis*, *V. microstomus*, *Onychostoma brevicephalus*, and *O. microcorpus* are all referable to the Asian genus *Onychostoma* Günther 1896 (type species *Onychostoma laticeps* Günther 1896). The genus *Varicorhinus* Rüppell 1835 (type species *Varicorhinus beso* Rüppell 1835) is African.

*Hemibarbus longianalis* Nguyen and Doan 1969, preoccupied by *Hemibarbus longianalis* Kimura 1943, is permanently invalid.

*Erythroculter pseudobrevicauda macrothalmus*, following designation of a neotype (see above), is an objective junior synonym of *Ancherythroculter daovantieni* (Banareescu 1967). For more information about this species see KOTTELAT, 2001: 18, fig. 13).

#### ACKNOWLEDGMENTS

Nguyen Van Hao kindly agreed to the preparation and publication of an English language version of his paper with coauthor Doan Le Hoa (1969). He made the only existing set of original figures available and gave permission for them to be copied photographically. He helped to identify the type specimens in the RIAH No. 1 fish collection and accompanied the authors on a trip to collect fresh specimens at some of the type localities.

Although the first author heard about Nguyen and Doan's 1969 paper during an initial visit to Hanoi in 1992, he was unable to obtain a copy of it then. Neither Nguyen Van Hao or Mai Dinh Yen had it. Nguyen Tuong Anh finally located a copy and sent it from Saigon in 1998.

As on several other occasions, the first author is indebted to Imre Csavas, former Senior Advisor in Aquaculture to the FAO regional Office in Bangkok, for facilitating my work in an Asian country. Through his good offices I was welcomed to the Research Institute for Aquaculture No. 1 in Hanoi and enabled to examine specimens of endemic Red River basin fish taxa available only in the RIAH fish collection. Museum work at RIAH and field work in northern Vietnam was supported by grants from the Smithsonian Tropical Research Institute and the California Academy of Sciences.

Final editing of text and figures for this and the three articles on Nguyen and Doan 1969 preceding it was done in the Faculty of Environment and Resource Studies, Mahidol University (Salaya campus).

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