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THE CURRENT SITUATION OF *Rhamdia* BLEEKER, 1858 (SILURIFORMES: HEPTAPTERIDAE) – GATHER AVAILABLE INFORMATION, DEFINE A ZERO POINT, AND START ALL OVER AGAIN

La situación actual de Rhamdia Bleeker, 1858 (Siluriformes: Heptapteridae) – reunir la información disponible, definir un punto inicial y empezar desde cero.

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Abstract. The taxonomy of *Rhamdia* is one of the most confuse among South American catfishes. Reasons are the poorly defined species, including its type-species *R. sebae*, some old description from the 18th and 19th centuries, and a weak set of characters used to diagnose species. The situation is further complicated by the high number of species synonymized to *R. quelen*, and the fact that five of them: *Pimelodus quelen*, *Pimelodus namdia*, *Pimelodus sebae*, *Heterobranchus sextentaculatus*, and *Silurus rivularis* share the same neotype specimen. To facilitate access to the information on these species, originally written in Latin, German, or French, the original texts and their respective translations into English, and relevant figures, are provided.

Key words. Heptapteridae, *Rhamdia*, synonyms, neotype.

Resumen. La taxonomía de *Rhamdia* es una de las más complejas entre los bagres sudamericanos. Esto se debe a que las especies del género están mal definidas, incluida la especie tipo *R. sebae*, y se basan en descripciones antiguas de los siglos XVIII y XIX, y las características útiles para distinguir las especies son débiles. Esta situación se complica aún más por la gran cantidad de especies sinonimizadas con *R. quelen*, y el hecho de que cinco de ellas: *Pimelodus quelen*, *Pimelodus namdia*, *Pimelodus sebae*, *Heterobranchus sextentaculatus* y *Silurus rivularis* comparten el mismo neotipo. Con el objetivo de acceder a la información sobre estas especies, originalmente escrita en Latín, Alemán o Francés, se proporcionan aquí los textos originales y sus respectivas traducciones al inglés, y se proporcionan algunas figuras relevantes.

Palabras clave. Heptapteridae, *Rhamdia*, sinonimos, neotipo.

INTRODUCTION

The title of this note may look surprising, but actually that is exactly what needs to be done when working on the taxonomy of *Rhamdia*. *Rhamdia* is a genus with 27 valid species, with a poorly defined type species, *Pimelodus sebae* Cuvier, 1829, and no suitable set of characters to differentiate species.

The taxonomic situation of *Rhamdia* was further complicated by the fact that Silfvergrip (1996), in the only taxonomic revision of the genus to date, synonymized 47 nominal species into *Rhamdia quelen* (Quoy & Gaimard, 1824). This action established a very broad geographic distribution for the species, from Yukatan in southern Mexico to central Argentina. The diagnosis of *R. quelen* proposed by Silfvergrip (1996), however, is too general to be useful and embraces several different morphotypes, suggesting that a large proportion of the genus diversity is masked under that single name.

Subsequent authors revalidated some of the species synonymized with *R. quelen* by Silfvergrip (1996), *Rhamdia guatamalensis* (by Espinosa-Pérez *et al.*, 1993), *R. cinarascens* (by Perdices *et al.*, 2002), *R. saijaensis* (by Hernández *et al.*, 2015, who also presented additional evidence on the validity of the previous two species), and *R. branneri* and *R. voulezi* (by Garavello & Shibatta, 2016). In addition to those revalidations, seven new species have been described after the revision of Silfvergrip (1996), five of which from the area of distribution of the expanded *R. quelen*, making *Rhamdia* one of the most taxonomically complex heptapterid genera.

In addition to lumping nearly four dozens of taxa in the synonymy of *Rhamdia quelen*, Silfvergrip (1996) also assigned

a single specimen (NRM 16091) from the Amazon basin in Loreto, Peru, as a common neotype for *Pimelodus quelen* Quoy & Gaimard, 1824, *Pimelodus namdia* Cuvier, 1829, *Pimelodus sebae* Cuvier, 1829, *Heterobranchus sextentaculatus* Agassiz in Spix & Agassiz, 1829, and *Silurus rivularis* Larrañaga, 1923.

In order to make the statement from the title of the present paper possible, we believe that the descriptions of the oldest species considered to be members of the genus *Rhamdia* must be available in English. Therefore we herein provide some original texts and their respective translations. This compilation is the initial contribution of a series of papers on *Rhamdia* taxonomy currently in preparation.

HISTORICAL LITERATURE ACCOUNTS ON THE SYNONYMS OF *Rhamdia quelen* THAT SHARE THE SAME NEOTYPE

Most historical texts regarding the first information and details on species of *Rhamdia* were written in Latin, French, or German. Translations to these early works are provided in order to facilitate access to such old information. The original descriptions have been translated as far as possible literally, without introducing interpretations, and maintaining the original meanings. Comments from the translators or the authors or words missing in the source text are included in square brackets. As it can never be guaranteed that translations reflect the source texts precisely, especially giving the old age of such writings, the original texts are also offered as transcriptions.

The translations below should make

future research easier as before any progress on the diversity within *Rhamdia* can be investigated, the 'old' species need to be defined properly. Extracts from some later works originally published in English are provided as transcriptions if these present comments on the early authors or information on the distribution of the species. Where available, figures published with the original texts are included and, if necessary, have been treated graphically for improvement.

1. Markgraf (1648)

Original text (pages 149-150; figure 1). Nhamdia Brasiliensibus, *Bagre do Rio* vocatur à Lusitanis, piscis corpore oblongo, obeso, ventre molli, versus posteriora angustiori. Capite compresso & ore parabolicae figurae & denticulis minimis praedito. Est autem corpus duodecim aut quatuordecim digitos longu, duos & semis altum, ubi altissimum. Oculi parvuli, paululum protuberantes, rotundi, pupilla nigra, circulo ex auro & umbra mixto. Branchiae satis amplae, & barba sex filis constans duobus supra & quatuor infra os: eorum quae supra os versus latus stant quodlibet crassitiem habet fili quo literae obsignantur, quinque digitos longum & post cujusque exortum fovea est oblonga, in quam barbae initium incumbit, vertendo illam postica parte, ut semper facit: quatuor inferiorum quodlibet exterius duos & semis digitos longum, interius sesquidigitum; suntque inferiora fila barbae non ita crassa ut superiora. Pinnas habet septem & octava est pro cauda: nimirum post quamlibet branchiam unam oblongam, firmissima & acuta spina munitam (quemadmodum & in exortu ipsius post branchiam os durum est triangulare) ad medietatem corporis ante

anum duas junctas oblongas, in extremitate circinatas: versus caudam in inferiore ventre unam fere quadratum & in extremitate circinatum in summitate dorsi magnam quadratam multis spinis suffultam, & post illam unam longam angustam, cute carnosa constantem, qua & corpus est tectum. Cauda bisecta est & quaelibet pars in exitu circinata. Cute tegitur non squamis. Caput dura testa tectum, osque superius totum umbrae coloris: dorsum & latera cinerei cum pauxillo caeruleo mixti : venter albus : pinna dorsalis prior prope exortum ejusdem coloris, caetera in totum nigri, spinis cinereis : posterior ejusdem coloris cum dorso & lateralibus : pinnae postbranchiales totae nigrae : barba nigra, uti & pinnae ventris & cauda, licet in exortu paululum ruffae. A summitate branchiarum per quodlibet latus tendit in medio linea rubra usque ad caudae initium.

Translation. Nhamdia of the Brazilians, called Bagre do Rio by the Lusitanians [Portuguese], fish with an elongate, fat body, a smooth belly becoming thinner posteriorly, a flat head, an arched mouth equipped with minute denticles. Moreover the body is 12 or 14 fingers long and two and a half, where it is highest. Small eyes, slightly protruding, roundish, black pupil with a golden brown ring. Gill [openings?] quite large, the barb consisting of six threads [barbels], two of which above and one below the mouth, each of those [barbels] positioned laterally above the mouth has roughly the thickness of a thread with which letters are sealed, five fingers long, and where it originates an elongate pit is seen, in which the initial part of the barb lies, while permanently moving the posterior part of it. More outward [each] of the four lower [barbels] is two and a half finger long, more inward one and a

half. The lower threads are not as thick as the upper ones. It [the fish] has seven fins, the eighth is the tail; i.e. after each gill an elongated [fin], armed with a very strong and pointed thorn (as there is also a hard, triangular bone at its base behind the gill), in the middle of the body in front of the anus two elongated, and interconnected [fins] with rounded ends, on the highest part of the back a large rectangular [fin] supported with many spines, and after this a long narrow [fin] consisting of fleshy skin, with which also the body is covered. The tail is bipartite and each part is rounded at the end. The skin is scale-free. The head is covered by a hard shell and the entire upper mouth is darkened. Back and sides ash-gray mixed with a little blue, belly white, the anterior dorsal fin near the base of the same color; all the rest completely black, spines ash-gray, the posterior dorsal fin together with back and sides of the same color. The fins behind the gills quite black, the barb black, as well as the pelvic fins and the tail, although with a little red at the base. In the middle of the body on each side a red line runs from the upper end of the gills to the beginning of the caudal fin.

2. Gronow (1754)

Original text (pages 34-35). 83. *Mystus cirris sex longissimis*; pinna dorsi secunda longissima a priore ad caudam extensa.

Mystus cirris sex longissimis, appendice dorsi a pinna ad caudam extensa. Arted. mss. ad Sebam.

1-Corpus oblongum, cathetoplateum, alepidotum; ad pinnas pectorales crassissimum, fere trigonum; a quibus sensim angustius evadit ad caudam usque.

2-Caput corporis latitudinem aequans, ad branchias cathetoplateum; a dorso admodum declive, inerme.

3-Os in apice capitis situm, obtusum; semilunare; Rictus angustus.

4-Maxilla Inferior superiore parum brevior.

5-Cirri in universum sex, quorum Duo praelongi in maxillae superioris margine ante oculos siti; in maxilla praeterea inferiore Quatuor adhuc conspiciuntur, prioribus multo minores; Horum utrinque exterioris sunt majores, interiores minores.

6-Dentes in utrisque maxillis, minimi, conferti, vix sensibiles.

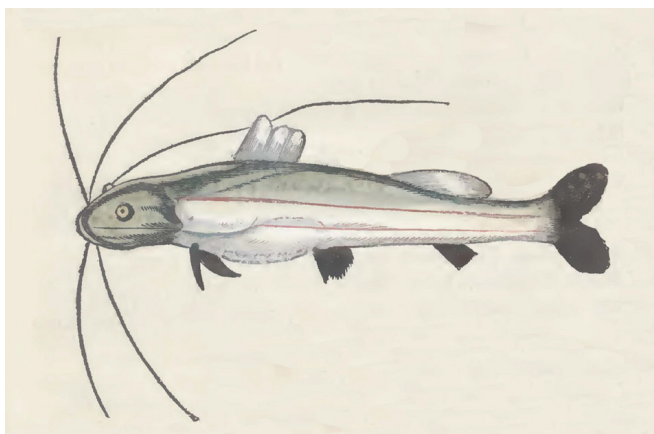


Figure 1 - Markgraf's catfish showing the red lateral line mentioned in the text.

tae, a parte anteriore cirrorum maximorum (§. 5) sitae.

8-Oculi in summis lateritibus capitis siti, prominentes, convexi, satis magni, cute capitis communi tecti.

9-Opercula Branchiarum satis aperta.

10-Membrana Branchiostega ossiculis utrinque quatuor instructa, quorum duo superiora latissima sub operculis latent.

11-Dorsum in aciem contractum, angustum, elevatum, dipterygium.

12-Latera ad pinnam dorsi primam latissima, versus caudam angustissima.

13-Pectus & Venter rotundo-plana, latissima ad pinnas pectorales, ante anum vero multo contractius est Abdomen.

14-Squamae in toto corpore nullae, verum Cutis alepidota laxa corpus ambit.

15-Linea Lateralis admodum conspicua, mox supra Branchiarum Opercula orta, parum versus pinnas ventrales declinans, inde recta corpus percurrit; in ortu dorso est proxima, dein in mediis lateribus.

16-Pinnae in toto pisce octo, nimirum duae Dorsales, totidemque Ventrales, & Pectorales, unica Ani & Caudae.

17-Pinna Dorsi Prior in summo dorso parum a capite dissita, ossiculorum septem tenuium, ramosorum, primo excepto simplici aculeato.

18-Pinna Dorsi Posterior admodum humilis, mox post pinnam anteriorem dorsalem orta, ad caudam ferme usque extensa, nullis ossiculis vel cartilagineis vel osseis instructa, sed adiposa.

19-Pinnae Pectorales duae, unica utrinque, mox post opercula branchiarum in infimis lateribus sitae, ossiculis sussultae novem ramosis & inermibus, except primo simplici, crassissimo, acutissimo, in lateribus uncinulis armato; quemadmodum in *Aspredine* descripsi pag. 8. N. 26. §. 18.

20-Ventrales Pinnae duae, in lateribus ventris mox ante anum sitae, ossiculorum sex

ramosorum, excepto primo simplici, etiam inermi.

21-Pinna Ani medio fere, inter anum & caudam sita, parva, ossiculorum undecim inermium, ramosorum, primis duobus exceptis simplicibus, etiam inermibus.

22-Cauda admodum bifurca, ossiculorum novemdecim subramosorum.

23-Locus Brasilia, atque Surinama, ubi in fluviis habitat.

Translation. 83. *Mystus* with six very long barbels; a very long second dorsal fin extending from the head to the tail

Mystus with six long barbels, with a dorsal appendix extending from the fin to the tail. Message from Artdi to Seba.

1-Longish body, laterally compressed, without scales; at the pectoral fins very strong (the body), nearly triangular; from there to the tail it becomes gradually slender.

2-Head as broad as the body, in the area of the gills laterally compressed; a very sloping back, unarmed.

3-Terminal mouth, obtuse, crescent-shaped; throat narrow.

4-Lower jaw a little shorter than the upper one.

5-A total of six barbels, two of which are very long and situated on the edge of the upper jaw in front of the eyes; another four are still seen on the lower jaw, much smaller than the former; of these the outer ones are larger on both sides, the inner ones are smaller.

6-Teeth in both jaws, very small, densely packed; hardly noticeable.

7-Nares on each side provided with a single opening, located in the anterior part of the largest cirri.

8-The eyes are located on the upper sides of the head, protrude, are convex, relatively large, covered by the common skin of the head.

9- Gill covers are relatively large.

10-Branchiostegal membrane provided with four ossicles on each side, of which the two upper and widest are hidden under the opercula.

11-Edge of the back constricted [?], narrow, elevated, bi-finned [two dorsals].

12-[Body] sides at the first dorsal fin widest, towards the tail narrowest.

13-Chest and abdomen round-flat, widest at the pectoral fins, in front of the anus, however, the abdomen is much narrower.

14-The entire body without scales, but a scale-free loose skin encloses the body.

15-Lateral line clearly visible, rises above the gill covers, with a small bend towards the ventral fins, from there it runs in a straight line on the body; in the beginning very close to the back, then in the middle of the sides [of the body].

16-Overall, the fish has eight fins, of course, two dorsal fins, and just as much pelvic and pectoral fins, a single anal fin and a caudal fin.

17-The anterior dorsal fin at the highest point of the back slightly far from the head with seven delicate, branched ossicles [fin

rays], with the exception of the first, which is simple and pointed.

18-The posterior dorsal fin, however, is low, originates behind the anterior dorsal fin, extending almost to the tail, without ossicles either cartilaginous or osseous, but is fat.

19-Two pectoral fins, one on each side, behind the gill covers at the bottom of each side, nine branched and unarmed and raised ossicles, except the first simple, very thick and very pointed, armed with small lateral hooks; as I have described for *Aspredo* pag. 8. N. 26. §. 18.

20-Two pelvic fins, located on the sides of the abdomen in front of the anus, with six branched ossicles, with the exception of the first one, simple and unarmed as well.

21-Anal fin almost in the middle, between anus and tail, small, with 11 unarmed branched ossicles, with the exception of the two first ones [which are] simple [unbranched], but also unarmed.

22-Tail completely bilobed, with 19 moderately branched bones.

23-Occurrence: Brazil and Surinam, where it inhabits rivers.



Figure 2 - Seba's catfish No. 5, isolated from the remaining drawings on plate 29.

3. Seba (1759)

Original text (Latin, page 84; figure 2).

Num. 5. *Mystus cirris* sex longissimis & appendice dorsi a pinna ani ad caudam extensa.

Testa capitis nequaquam, uti in proxime praegressis, ad initium usque pinnae dorsalis pertingit. Corpus, venter, os, pinnae ventrales, &c. uti in tertia specie se habent: sed maxillae fere sunt aequales, vel superior saltem paulo longior inferiore. Cirrorum situs & longitudo eadem est, ac in praecedente num. 4. Ita & denticuli sese habent. Corpus flavescit: pinnae vero albescunt. Os claviculae, quam in prioribus, minus est. Pinna dorsi ossiculis constat 7, quorum primum est aculeus teres, non serratus, multoque minor & gracilior, quam in praecedentibus: reliqua mollia sunt & in apice ramosa. Appendix dorsi longa, & satis alta, a pinna dorsali ad caudam fere usque porrigitur. Pinnae pectorales ossiculis constant 10, ut in praecedente Num. 4, comparatis, nisi quod aculei primi dentes sint minores. Ani pinna ossiculis constat 12 vel 13 mollibus. Cauda bifurca ossiculis 17 longioribus gaudet: inferius autem caudae segmentum superiore majus est. Longitudo descripti 4 est unciarum, & linearum 9.

Translation (of Latin text). No. 5. A *Mystus* with six very long barbels and a dorsal fin that extends from the anal fin to the tail.

The covering of the skull does not extend to the beginning of the dorsal fin as in the just previously treated [specimens], body, belly, mouth, pelvic fins, etc are as in the third species: but the jaws are almost identical, however, the upper is at least a little longer than the lower one. Position and length of the barbels are just as in the preceding Nr. 4. The small teeth behave exactly in the same way.

The body is yellowish pale, but the fins are white. The clavicle is insignificant as with the earlier [specimens], the dorsal fin consists of seven ossicles, the first of which is a round spine, not serrated, and much smaller and more delicate than in the preceding [specimens]: the remaining [ossicles] are flexible and distally branched. The dorsal appendage is long and rather high, and extends from the dorsal fin almost to the tail. The pectoral fins consist of 10 ossicles comparable to the previous number 4, except that the teeth of the first spine are smaller. The anal fin consists of 12 or 15 flexible ossicles- The bifurcated tail has 17 longer ossicles. The lower lobe of the caudal fin is larger than the upper one. The length of the described [specimen] is four inches and nine lines.

Original text (French, page 84). N°. 5.

Barbeau à six barbillons xtraordinairement longs, avec l'appendice du dos étendue depuis la nageoire de l'anus jusqu'à la queue.

Dans celui-ci le tégument de la tête ne s'étend point, comme dans les Barbeaux qui précèdent, jusqu'au commencement de la nageoire du dos, mais il ressemble au Barbeau du N°. 3 par le museau, le corps, le ventre, & les nageoires du ventre; cependant ses mâchoires sont presque égales, sinon que la supérieure semble un peu plus longue. Il ne differe point du N°. 4, pour la situation & la grandeur des barbillons, ni pour son ratelier de petites dents. Son corps est jaunâtre, & ses nageoires blanches. Sa clavicule est plus petite que dans les autres Espèces décrites ci-dessus. Le premier éguillon des sept arrêtes qui forment la nageoire de son dos, est aussi beaucoup plus petit, plus mince, du reste rond, & sans denture. Les autres arrêtes de cette nageoire sont flexibles, & rameuses au bout. L'appendice du dos est longue, assez

élevée, presque étendue depuis sa nageoire jusqu'à la queue. Les ailerons de la poitrine sont fortifiés de dix arrêtes semblables à celles du Poisson précédent, hormis que la dentelure de la première arrête est moins entaillée. La nageoire de l'anus en a douze ou treize toutes molles; sa queue fourchue dix-sept grandes; la fourche inférieure de la queue palse plus loin que la supérieure. Ce Poisson a quatre pouces neuf lignes de longueur.

Translation (of French text). No. 5. Barbeau [actually 'barb', but here a catfish] with six extraordinary long barbels, with the appendix [adipose fin] of the back extending from the anal to the tail. In this one [the fish] the tegmentum of the head doesn't reach, as in the preceding barbs [catfishes], the origin of the dorsal fin, but resembles to Barbeau of no 3 on behalf of the snout, the body, the belly and the fins of the belly [ventrals]; its jaws, however, are nearly equal, if not the upper one seems a bit longer. It doesn't differ at all from no 4, regarding the place and the size of the barbels, neither regarding the denture of small teeth. Its body is whitish yellow, and its fins [are] white. Its clavícula [cleithrum] is smaller than [those] of the other above described species. The first sting of the seven bones that form the dorsal fin is also much smaller, thinner, and round by the way and without teeth. The other bones of this fin are flexible, and branched at the end. The appendix [adipose fin] of the back is long, quite high, nearly extending from the fin to the tail. The fins of the chest [pectorals] are strengthened by six bones [which are] similar to those of the preceding fish, except that the teeth development of the first bone is less notched. The fin of the anus [anal fin] has twelve or thirteen of them [rays] [which are] very soft; its forked tail

[has] seventeen big ones. The lower lobe of the tail reaches further than the upper one. This fish has four inches and nine lines [4x25.4 + 9x2.26; approx. 122 mm] in length.

4. Lichtenstein (1822)

Original text (pages 282-283). Nhamdia. Auf den ersten Anblick erkennt man in der Beschreibung und Abbildung einen Pimelodes, und wird die geringen Widersprüche, die sich zwischen beiden finden, z. B. die unnatürlich steif gezeichneten Cirrhen, nur der Abbildung zur Last legen, mithin im Text nichts finden, das Verdacht an seiner Richtigkeit erregen könnte. Die noch vorhandene Original-Abbildung (L.P.I. pag. 575.), wo aber der Fisch Guiri genannt wird, steht mit der Beschreibung im vollkommensten Einklang und beweiset, daß der Holzschnitt zwar in den Umrissen treu, doch in Nebensachen, wie eben in der Länge der Cirrhen, von dem Künstler willkürlich entstellt sei. Indessen bleibt bei der großen Zahl ähnlicher Fische dieser Gattung, die sich in den südamerikanischen Flüssen finden, in der ganzen weitläufigen Schilderung nichts wahrhaft charakteristisch, als die bedeutend lange Fettflosse auf dem Hinterrücken. Wir kennen nur eine einzige Art, mit welcher hierin dieser Fisch verglichen werden kann, nämlich die in unserem Museum unter dem Namen *P. macropterus* aufgestellte, welche aus Brasilien stammt. Aber bei ihr nimmt diese Fettflosse einen noch weit größern Raum ein, als ihr auf den Abbildungen gegeben ist, und es bleibt mithin immer mißlich, beide für einerlei zu erklären, wiewohl die Worte des Textes eine solche Deutung allerdings entschuldigen könnten.

Translation. Nhamdia. At first sight one

recognizes a pimelodid in both, text and figure, and will only blame the slight differences, for example the unnaturally stiff barbells, to the figure and find nothing in the text that could create doubts in its correctness. The still existing original figure (L.P.I. pag. 575), in which the fish is called Guiri, is in complete accord with the text and proves that the xylography shows the true profile, but in minor matters, as in the length of the barbels, has been disfigured arbitrarily by the artist. Yet, taking in consideration the huge number of similar fishes of this genus, except the extraordinary long adipose, there is nothing in the ample description that could be considered really distinguishing. We only know a single species to which this fish could be compared, namely the one exhibited in our museum under the name *P. macropterus*, which originates from Brazil. But in that one the adipose is taking even more space than shown in the figures and it would be awkward to just declare both to be the same, although the wording of the text would excuse such an interpretation.

5. Quoy & Gaimard (1824)

Original text 1 (pages 228-229; figures 3 and 4). Pimélode Quélen - *Pimelodus Quelén*. N. Planche 49, fig. 3 et 4.

Pimelodus, pinnâ dorsali inermi, posticâ adiposâ prolixâ; cirris senis; duobus maxillaribus longissimis; plurimis transversis lineis; caudâ bifidâ.

B. 7. D. 7. A. 11. P. 9. V. 6. C. 18.

Ce pimélode a la tête aplatie en avant, la nuque élevée et le corps comprimé sur les côtés; les mâchoires arrondies; la supérieure un peu plus avancée que l'inférieure; six barbillons, don't les deux supérieurs, plus grands, s'enfoncent à leur origine dans une rainure qui ne dépasse pas les yeux, et

arrivent jusque près de l'anale. Ils égalent probablement la longueur du corps chez quelques individus. La bouche est grande, arrondie, la langue large et obtuse; les dents petites, en cardes et très-nombreuses, les os pharyngiens en sont aussi munis. Les narines ne nous ont offert qu'une seule ouverture de chaque côté; les yeux sont ovalaires; les ouïes grandes et soutenues par sept rayons. L'opercule, très-mobile sur le préopercule, présente des stries rayonnées en forme de triangle.

La plaque de la nuque a trois pointes seulement indiquées; elle est recouverte d'une peau épaisse et ciselée. Ce poisson se fait remarquer par sa première nageoire dorsale, qui manque du fort aiguillon dentelé dont ce genre est ordinairement pourvu; elle a sept rayons branchus. Les pectorales en ont neuf, le premier très-gros, osseux, et dentelé des deux côtés. Les ventrales et l'anale sont sans aiguillons : les premières prennent naissance où finit la dorsale; elles ont six rayons : l'anale, couchée en arrière, en compte onze. L'adipeuse, peu élevée, mais très-longue, commence derrière la dorsale et finit à l'extrémité de la queue, dont la nageoire est médiocrement fourchue, et les lobes égaux.

La ligne latérale décrit d'abord une courbe au-dessus des pectorales, et se continue ensuite à droite. L'anus a deux ouvertures distinctes aussi grandes l'une que l'autre.

La couleur générale est brune, plus foncée sur les nageoires; celle du dos offre une tache demi-circulaire qui en occupe le tiers inférieur. Le corps présente des teintes rougeâtres, et les muscles se dessinent en bandes transversales qui se réunissent à la ligne latérale comme sur un raphé.

La mâchoire inférieure, et le thorax en-dessous, sont d'un gris sale légèrement argentin.

Ce poisson porte le nom de M. l'abbé de

Quélen, chanoine titulaire du chapitre royal de Saint-Denis et aumônier de l'expédition, à qui nous l'avons dédié.

Il provient du Brésil, et a des rapports avec le pimélode nhamdia; mais il en diffère par sa première dorsale, qui a un plus grand nombre de rayons. Sa longueur est de huit pouces, sa hauteur de dix-sept lignes, et son épaisseur de huit lignes.

Translation. Pimélode Quélen - *Pimelodus Quelen*. N.
plate 49, figures 3 and 4.

Pimelodus, dorsal fin unarmed [without spine], posterior adipose prolonged, the two jaws very long; many transversal lines, caudal fin forked

B. 7. D. 7. A.11. P. 9. V. 6. C. 18.

The front of the head of this pimelode is flattened, the neck elevated and the body pressed together at the sides [compressed laterally]; the jaws rounded; the upper a little bit protruding over the lower; six barbules, the uppermost and bigger ones of which are implanted at their base in

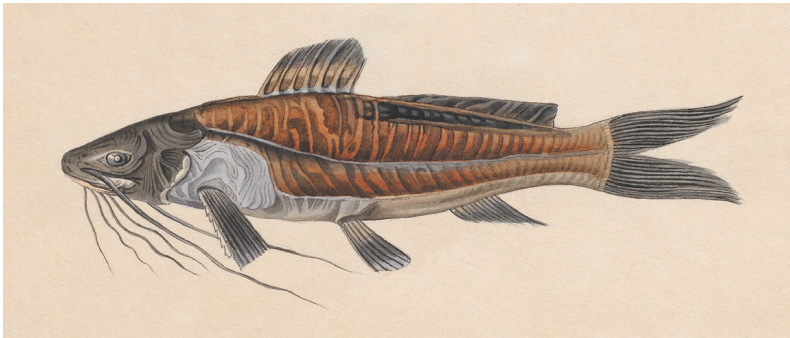


Figure 3 - Quoy & Gaimard's *Rhamdia quelen*, lateral view.



Figure 4 - Quoy & Gaimard's *Rhamdia quelen*, front view.

a groove which doesn't exceed the eyes and which just closely reaches the anal. In some individuals, they might be as long as the body. The mouth is big, rounded, the tongue long and obtuse; the teeth small, in rows and very numerous, covering also the pharyngeal bones. The nostrils have shown us only one opening at each side; the eyes are oval; the big gills are supported by seven rays. The opercle, very mobile against the preopercle, shows radiated striations of triangular form.

The plate of the neck has only three pointed tips; it is covered by a thick and chiselled skin. This fish is remarkable by its first dorsal fin which has no denticulated strong first spine of which this genus is usually provided; it has seven branched rays. The pectorals have nine of them, the first one very thick, osseous, and denticulated on both sides. The ventrals and the anal are without spines: the first begin where the dorsal ends; they have six rays; the anal, lying behind, counts eleven of them. The adipose, not very high, but very long, begins behind the dorsal and ends at the end of the tail, the fin of which is moderately forked, and the lobes equal.

At its beginning, the lateral line forms a slight bend above the pectorals and then continues straight. The anus has two distinct openings of the same size.

The general colour is brown, darker on the fins; the one on the back shows a semicircular spot which covers the lower one-third. The body shows red hues, and the muscles emerge in transversal bands which unite at the lateral line as on a ridge.

The lower jaw, and the thorax below, are of a dirty grey slightly silver [or: slightly argentinean grey].

This fish carries the name of Monsieur L'Abbé de Quélen, titular canon of the royal chapter of Saint-Denis and chaplain of the

expedition, to whom we have dedicated it.

It comes from Brasil, and shares similarities with the pimelode nhamdia; but it differs from that by its first dorsal which has a greater number of rays. Its length is of eight inches [203 mm], its height of seventeen lines [38 mm], and its thickness of eight lines [18 mm].

Original text 2 (table des matieres, page 701). Pimélode Quélen, espèce nouvelle de poisson, de la baie de Rio de Janeiro; ses rapports avec le nhamdia, 228, pl. 49, fig. 3.

Translation. Pimelode Quelen, new species of fish, from the bay of Rio de Janeiro [Guanabara Bay]; it shows similarities with the rhamdia, 228, pl. 49, fig. 3.

Original text 3 (atlas, table explicative des planches, page 3). 3. Pimelode quelen, de la baie de Rio de Janeiro
4. Le même, vu de face.

Translation. 3. Pimelode quelen, from the bay of Rio de Janeiro [Guanabara Bay]
4. the same, front view.

6. Cuvier (March 1829)

Original text (footnote on page 294). *Pim. namdia*, N., Margr., 149; *Pim. sebae*, N., Seb. III, xxix, 5

7. Spix & Agassiz (June 1829)

Original text (page 28; figures 5 and 6). XI. *Heterobranchus sextentaculatus* Spix. Tab. XI.

Visis claris. Spixii tabulis, illustrissimus Cuvier dubitat, hunc pisces ad Heterobranchi genus pertinere; num jure, affirmare nequeo, quum specimen unicum Musei

Monacensis male conservata cutis tantum sit; lamellae branchiales quidem adsunt, sed appendices earum fasciculatos in tertio et quarto arcu branchiali observare non licuit, quamquam cutem per plures menses in spiritu vini emolliverim. Donec quisquam naturae scrutator in recentem hunc piscem inquisiverit, dubium manet, num revera ad *Heterobranchum* referendus sit, vel potius ad *Pimelodum*, strictiore sensu, post novissimas scilicet generis restrictiones, cujus externos characteres exhibet. Dentes elongati, conferti, per fascias in ossibus intermaxillaribus et mandibularibus inserti sunt; vomer edentulus. Caput scuto rugoso tectum, pro corporis mole parvum, supra planissimum, latera perpendicularia fere, ita ut sectio transversalis per oculos planum fere quadratum exhiberet. Oculi laterales, ad marginem scuti capitalis, ovals. Nares quatuor, fere per quadratum dispositae. Cirrhi maxillares lateraliter ad medium inter nares prodeuntes, ad pinnas ventrales usque producti. Operculi scutum rugosum. Truncus cylindraceus, omnino

nudus, cauda compressa. Linea lateralis in medio inferne subarcuata. Pinnae pectorales acutae, radio primo crasso, osseo, externe serrato; ventrales elongatae, apice rotundatae, sub fine pinnae dorsalis anterioris, quae per totam suam latitudinem aequae alta est, radio antico simplici. Pinna adiposa latissima, fibrillosa videtur, forsitan ob exsiccationem; pinna analis sub ejus medio, parva,

rotundata. Pinna caudalis profunde incisa, lobis angustis elongatis, acutis. Totus piscis fuscus, inferne sordide albidus.

Pinna pectoralis radiis 11, ventralis 6, analis 9, praeter 2 anteriores minores, caudalis 17, praeter 3-4 minores laterales utrinque sub cute conditos, dorsalis anterior 7, antico radio simplici. Membrana branchiostega radiis 7.

In Museo Monacensi specimen unicum siccum servatur, longitudine 12".

Habitat in Brasiliae aequatorialis fluviis.

Translation. For clarification, the very famous Cuvier doubts that this fish on the plates of Spix belongs to the genus

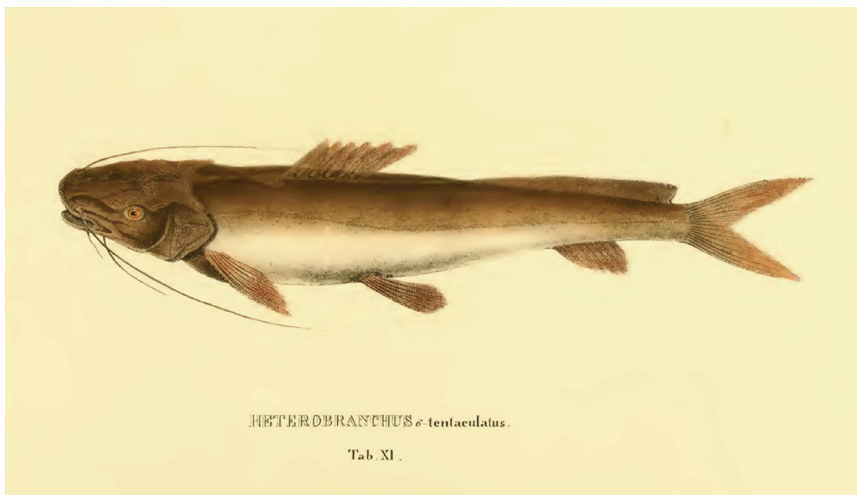


Figure 5 - *Heterobranchus 6-tentaculus* Agassiz in Spix & Agassiz, 1829.

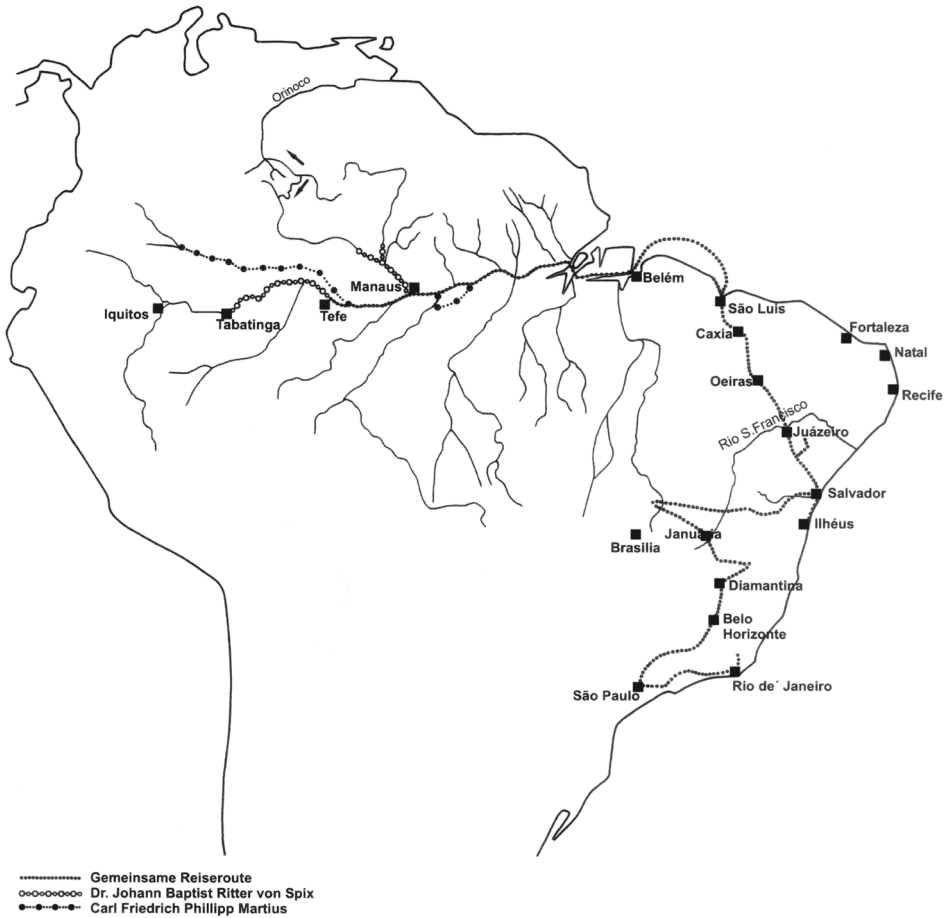


Figure 6 - Travel routes of Spix and Martius, together and separated, in Brazil (from Schoenitzer, 2011).

Heterobranchus; I cannot confirm, whether this is correct, because the only specimen of the Munich collection is only a poorly preserved skin. However, the lamellas of the gills are present, but one cannot see their tufted appendages [gill filaments?] on the third and fourth branchial arch, although I have softened the skin in spirit of wine [alcohol] for many months. As long as any naturalist has studied this fish anew, there remains a doubt whether it should really be assigned to *Heterobranchus* or rather to *Pimelodus*, in a narrower sense, of course, according to the latest restrictions

of the genus, whose external features it [the examined specimen?] shows. Teeth elongated, densely crowded, are inserted by ligaments in premaxillary and mandibular bones; vomer toothless; Head covered with a wrinkled shield, small compared to the mass of the body, very flat at the top, the sides almost vertical, so that a transverse section through the level of the eyes shows almost a square. Lateral eyes, at the edge of the head shield, oval. Four nostrils, positioned to form almost a square. Maxillary barbels emerge laterally midway between the nostrils extending

up to the pelvic fins; Gill cover rough, trunk cylindrical, completely naked, tail compressed. Lateral line in the middle of the lower half a little bit arching. Pectoral fins pointed with thickened first ray, osseous, serrated on the outside, pelvic fins prolonged, ends rounded, below the end of the anterior dorsal fin, which has the same height over its entire width, with a simple first ray. Adipose fin very broad, appears fibrous, possibly due to dehydration. Anal fin centered below it [the adipose fin], small, rounded. Caudal fin deeply incised with narrow, elongated and pointed lobes. The whole fish brown, off-white on the underside.

Pectoral fin with 11 rays, pelvic fin with 6, anal fin with 9, except for two smaller ones in front, caudal fin 17, except for 3-4 smaller lateral ones embedded on each side under the skin, the anterior dorsal fin 7 with a simple first ray. Branchiostegal membrane 7 rays

The Museum Munich stores a single dry specimen, length 12''.

8. Valenciennes (1840)

Original text (pages 169-176). Le Pimélode de Seba (*Pimelodus Sebae*, nob.¹)

Un naturaliste qui s'est occupé avec quelque soin de la distribution géographique des poissons, est toujours étonné lorsqu'il voit affirmer par des hommes tels que Linné, et répéter sans examen par une infinité d'autres, que la même espèce peut se trouver dans les rivières de l'Amérique et dans le Nil; mais, pour peu qu'il recherche sur quelles autorités reposent de pareilles assertions, il s'aperçoit bientôt qu'elles ne résultent que de la négligence avec laquelle on a accumulé des synonymes incompatibles. Ainsi, lorsqu'on remonte

aux éléments dont se compose dans Linné l'espèce du *silurus clarias*, on trouve qu'il a réuni sous ce nom au moins deux ou trois poissons très-différens.

1.° Le *scheilan* du Nil, décrit par Hasselquist, p. 369, d'une manière très-reconnaissable, et qui est l'espèce de *schal* encore nommée ainsi en Egypte, le pimélode *scheilan* de M. Geoffroy. C'est aussi cette espèce que Linné même paraît avoir décrite dans la II^e partie du Musée d'Adolphe Frédéric, p. 98; mais ce synonyme est précisément celui qu'il ne rappelle pas. Il a appliqué à ce poisson le nom de *clarias* (corrompu de *callarias*), parce que Belon l'avait déjà employé pour un poisson du Nil, mais d'une autre espèce, et, autant que l'on peut en juger par sa description, pour le Harmouth.

2.° Un poisson de Gronovius, Mus. I, 83, lequel, par sa description et par le renvoi qu'il fait à une phrase d'Artemi appartenant au 3.° volume de Seba alors encore manuscrit, se trouve être une espèce de Surinam à adipeuse basse et longue, représentée dans Seba, III, pl. XXIX, fig. 5, et aussi différente qu'il soit possible de celle du Nil.

C'est probablement celle-là que Linné décrit dans son Voyage en Scanie, puisqu'il lui attribue des barbillons de la longueur du corps et une adipeuse longue [*secunda longior*].

3.° Quant à celle qu'il décrit dans la I.^{re} partie du Musée d'Adolphe Frédéric, p. 73, c'est à peine si l'on peut croire qu'elle soit même semblable aux autres, puisqu'il lui compte seize rayons à l'anale, tandis que celui du Voyage de Scanie, celui de Gronovius et celui d'Hasselquist n'en ont respectivement que onze ou douze.

4.° A ces espèces, confondues par Linné, Bloch, tout en copiant aveuglément les citations contradictoires du naturaliste

suédois, en ajoute une quatrième, aussi d'Amérique. Son *silurus clarias*, pl. XXXV, fig. 1, qui a l'adipeuse courte et triangulaire, n'est pas, comme il le croit, le n.° 83 de Gronovius cité par Linné sous *clarias*; il serait bien plus voisin du n.° 84 du même auteur, lequel, d'après la phrase correspondante d'Artedi est l'espèce représentée dans Seba (tom. III, pl. XXIX, fig. 4). Mais ce n.° 84 de Gronovius où se trouve citée cette figure de Seba, diffère encore du *clarias* de Bloch, parce qu'il n'a pas les barbillons si longs; il forme donc une cinquième espèce.

Ni Shaw ni Lacépède n'ont fait toutes ces distinctions; ils se sont bornés à copier Bloch. Mais comme nous avons aujourd'hui à la fois au moins quatre de ces poissons sous les yeux, nous pouvons en indiquer avec détail les caractères, en réservant l'épithète de *clarias* à celle d'Hasselquist, à la seule qui soit du Nil, au *scheilan*, enfin; nous en donnerons d'autres à celles de l'Amérique, qui en diffèrent, comme on voit, même par le genre.

Ici nous entendons décrire l'espèce comprise sous le n.° 83 de Gronovius, et représentée dans Seba, pl. XXIX, fig. 5; et nous lui donnons le nom de ce célèbre collecteur. Elle nous paraît répondre mieux qu'aucune autre au *rhamdia* ou *bagre de Rio* de Margrave, p. 149.

C'est un poisson répandu dans toutes les parties de l'Amérique méridionale. Nous l'avons de Surinam par M. Levaillant, et de Cayenne par M. Poiteau et par M. Frère. Le Musée royal de Leyde l'a aussi reçu de Cayenne. Son nom français, dans cette colonie, est *Barbe la roche*.

M. Ménestrier nous l'a envoyé de Rio-Janéiro, où il l'a entendu appeler *Luvier*. M. d'Orbigny nous l'a envoyé de Buénos-Ayres sous le nom espagnol de *bagre negro*, qui lui est commun avec d'autres espèces, et sous

celui de *mandii hu*, qui en est la traduction en guarani; et nous ne voyons aucun moyen de le distinguer du *pimélode Quélen*, pris à Monté-Vidéo par MM. Quoy et Gaimard, et qu'ils ont décrit et représenté dans le Voyage de M. Freycinet (Zool., p. 228 et pl. XLIX, fig. 3 et 4). Enfin, nous ne pouvons douter que ce ne soit le même poisson qui est représenté dans l'ouvrage de Spix, pl. XI, sous le nom de *heterobranchus sextentaculatus*. Les traits dont le dessinateur avait couvert l'adipeuse auront fait illusion et passé pour des rayons: aussi le texte, p. 28, rédigé seulement sur un individu sec, mal conservé, n'a-t-il pu donner le nombre de ces prétendus rayons.

Nous voyons aussi par les individus rapports de Guyaquil par MM. Eydoux et Souleyet, que cette espèce se trouve même répandue dans les eaux douces qui descendent du versant occidental de l'Amérique du sud.

Sa tête, mesurée jusqu'à l'ouïe, est cinq fois ou un peu plus dans sa longueur totale; elle a de moins en largeur toute la longueur de l'opercule ou le tiers de sa longueur. Sa production interpariétale y ajoute un quart en sus. Cette production est deux fois et demie aussi longue que large, et sa moitié antérieure seulement est ridée et se montre au travers de la peau. Elle ne se joint pas au bouclier, qui est fort petit, triangulaire, pointu en avant, et à peu près entièrement caché sous la peau. Le casque a en largeur quatre septièmes de sa longueur; il est ridé plutôt que grenu. La solution de continuité va jusques entre les bords postérieurs des yeux, qui sont au milieu de là longueur de la tête, dirigés obliquement en dehors, du sixième de sa longueur en diamètre, et à deux diamètres et demi l'un de l'autre. Les narines sont deux très-petits trous: l'un, près de la lèvre, un peu en dedans du barbillon maxillaire, a un petit lambeau à peine visible; l'autre, au-dessus, à un tiers

de la distance du premier à l'oeil, n'a qu'un léger rebord. La bouche occupe le travers du devant du museau, et n'entame pas la longueur de la tête de plus d'un sixième. Les mâchoires sont à très-peu près égales, ou si l'une dépasse l'autre, c'est la supérieure. Les dents sont en fin velours sur des bandes assez étroites. Le barbillon maxillaire atteint au bout de l'anale ou au deuxième tiers de l'adipeuse, et même quelquefois au-delà; le sous-mandibulaire externe, au bout de la pectorale, et l'interne, à sa base. L'opercule est ridé en rayons; il y a huit rayons aux ouïes.

La pointe humérale est aiguë, plus longue que large, fortement striée; l'os a au-dessus une échancrure marquée. L'épine pectorale est assez forte, striée, à dents serrées au bord interne, et du dixième de la longueur totale. Le premier rayon dorsal est grêle et sans dentelures; sa pointe est molle. Cette nageoire est coupée carrément, et des deux tiers ou des trois quarts de la hauteur du corps. Sa longueur a plus d'un quart en sus, et est du septième de la longueur totale. L'adipeuse, qui commence presque immédiatement après, est trois fois aussi longue et trois fois plus basse. L'anale commence sous le milieu de l'adipeuse, et a à peine le neuvième de la longueur totale en longueur et en hauteur. La caudale est à peu près du cinquième; elle est fourchue jusqu'à moitié; son lobe inférieur est un peu plus long et plus large.

B. 8; D. 1/6; A. 12; C. 17 et quelques petits; P. 1/7; V. 6.

Le dessus de ce poisson est d'un brun plus ou moins noirâtre, varié de petits nuages plus foncés. Le dessous est blanchâtre; la dorsale a sur sa base une bande noirâtre, et ses deux tiers supérieurs ont les intervalles des rayons plus ou moins remplis par des taches noirâtres, qui sont quelquefois continus, et ne laissent alors qu'une bande

blanche entre les deux parties foncées. Les autres nageoires sont brunes ou noirâtres, plus pâles vers leurs bases.

L'examen de ses viscères nous a montré un foie assez épais, divisé en deux lobes plurilobés; une petite vésicule du fiel, un estomac arrondi et grand, un intestin sinueux et d'un diamètre assez grand. Les laitances sont composées de houppes; la vessie aérienne est grande et ovale, et arrondie en arrière; les reins médiocres.

Nous en avons des individus depuis six jusqu'à quinze pouces. C'est à peu près, selon M. d'Orbigny, le terme de l'accroissement de l'espèce. Sa couleur est d'autant plus foncée qu'elle vit davantage dans des eaux stagnantes ou bourbeuses. Les rides ou granelures de son casque et de son épaule sont d'autant plus fortes qu'elle est plus âgée. On la rencontre en abondance dans la rivière de la Plata et dans ses affluens, dans les eaux courantes aussi bien que dans les lacs et les marais, surtout dans les endroits couverts d'herbes aquatiques. Les individus vivent isolés et paisibles au fond des eaux, se nourrissant de petits vers, et ne venant jamais d'eux-mêmes à la surface. Ils ne se prennent

que la nuit à la ligne, et rendent, lorsqu'on les tire de l'eau, les mêmes sons que les autres espèces du genre. Les Indiens de l'intérieur sont presque les seuls qui en mangent.

¹ Linné et ses successeurs le confondent avec le *clarias*.

Translation. Seba's pimelod (*Pimelodus Sebae*, nob. [nobis = by us] ¹)

A naturalist who has been concerned quite carefully with the geographic distribution of fishes is always very amazed if he sees it affirmed by men like Linné and repeated without examination by a very big number of others, that the same species

can be found in the rivers in America and in the Nile; but, when he researches on which authorities such assertions are based on, he soon remarks that they only result from the negligence with which we have accumulated incompatible synonyms. For example, if one goes back to the elements of which the species *silurus clarias* in Linné is composed, one finds that he has united under this name at least two or three very different fishes.

1. The *scheilan* of the Nile, described by Hasselquist, p. 369, in a very recognizable way, and which is the *schal* still called like that in Egypt, the *pimelode scheilan* of M. Geoffroy. It is also the species that Linné himself seems to have described in the 2nd part of the Museum of Adolphe Frédéric, p. 98; but this synonym is precisely that which he doesn't mention. He has applied the name of *clarias* (corrupted as *callarias*) to this fish, because Belon had already used it for a fish from the Nile, but for another species, and, as far as one can judge by his description, for the Harmouth.

2. A fish of Gronovius, Mus. I, 83, which, by its description and by the reference he makes to a sentence of Artedi which belongs to the 3rd volume of Seba when it was still a manuscript, seems to be a species from Suriname with a low and long adipose, shown in Seba, III, pl. XXIX, figure 5, and is as different as possible to that one from the Nile.

It is probably that one that Linné describes in his Voyage en Scanie, since he attributes to it barbels of the length of the body and a long adipose [secunda longior].

3. As to which he describes in the 1st part of the Museum of Adolphe Frédéric, p. 73, one can barely believe that it might be even similar to the others, because he has counted sixteen rays in the anal, whereas that one of the Voyage de Scanie, that one

of Gronovius and that one of Hasselquist only have eleven or twelve respectively.

4. To these species mistaken by Linné, Bloch, by simply copying blindly the contradictory citations of the Swedish naturalist, has added a fourth, also from America. His *silurus clarias*, pl. XXXV, figure 1, which has a short and triangular adipose, is not, as he believes the no. 83 of Gronovius cited by Linné as *clarias*; it would be much closer to no. 84 of the same author, who, according to the corresponding sentence of Artedi, is the species represented in Seba (vol. III, pl. XXIX, fig. 4). But this no. 84 of Gronovius, where we find this figure of Seba cited, differs on top of it from the *clarias* of Bloch, because it hasn't got so long barbels; it therefore forms [is] a fifth species.

Neither Shaw nor Lacepède have made all these distinctions; they have contented themselves by copying Bloch. But as we have today at once at least four of these fishes under the eyes, we can show in detail their characteristics, reserving the name of *clarias* for that of Hasselquist, as the only one from the Nile, for the *scheilan*, after all; we will give others to those from America, which differ, as one sees, even by the genus. Here, we want to describe the species comprised under no. 83 of Gronovius, and represented in Seba, pl. XXIX, figure 5; and we give him the name of this famous collector. It seems to fit better than all others to *rhamdia* or *bagre de Rio de Margrave*, p. 149.

It is a fish that is distributed in all parts of South America. We have it from Suriname from M. Levaillant, and from Cayenne from M. Poiteau and from M. Frère. The Royal Museum of Leiden has got it also from Cayenne. Its French name, in this colony, is *Barbe la roche*.

M. Ménestier has sent it to us from Rio

Janeiro, where he has heard it being called *Luvier*. M. d'Orbigny has sent it to us from Buenos Aires under the Spanish name of *bagre negro*, which it shares with other species, and under that of *mandii-hu*, which is the translation of it in Guarani; and we don't see any possibility to distinguish it from the *pimelode Quelen*, caught in Montevideo by MM. Quoy and Gaimard, and which they have described and shown in the Voyage of M. Freycinet (Zool., p. 228 et pl. XLIX, fig. 3 et 4). Finally, we cannot doubt that it is the same fish which is represented in the paper of Spix, pl. XI, under the name of *heterobranchus sextentaculatus*. The lines with which the draftsman had covered the adipose will have led to the illusion of and been taken for rays; also the text, p. 28, based on a dry individual only, not well preserved, could not give the number of these allegedly rays.

We also see by the individuals added from Guayaquil by MM. Eydoux and Souleyet that this species even finds itself prevalent in the fresh waters which descend the western slope of South America.

Its head, measured up to the gills, is five times or a little bit more in its total length; its width is at least the length of the opercle or a third of its length. Its interparietal production [supraoccipital process?] adds another quarter of it. This production is two and a half times as long as wide, and only its front half is wrinkled and can be seen through the skin. It isn't connected with the shield, which is very small, triangular, pointed in front, and nearly completely hidden under the skin. The width of the helmet is four seventh of its length; it is more wrinkled than granulated. The solution of the continuity [?] reaches between the posterior margins of the eyes, which are in the middle of the length of the

head, directed obliquely outside, a sixth of its length in diameter and half the one from the other. The nostrils are two very small holes; the one, close to the lip, a little bit in the barbel of the maxillary, has a little flap of skin which is barely visible; the other, above, at a third of the distance of the first to the eye, has only a slight rim. The mouth occupies the width of the front of the snout, and doesn't reach more than a sixth of the length of the head. The jaws are nearly equal, or if one surpasses the other, it is the upper. The teeth are in fine velours on rather tight bands. The maxillary barbel reaches the end of the anal or the second third of the adipose, and sometimes even further; [that one of] the outer lower jaw [reaches] the end of the pectoral, and [that one of] the inner at its base. The opercle is wrinkled by grooves; there are eight gillrakers.

The tip of the cleithrum is pointed, longer than broad, strongly striped; above, the bone has a marked incision. The pectoral spine is very strong, striated, with close teeth at the inner edge, and of one tenth of the total length. The first dorsal ray is thin and not denticulated; its tip is soft. This fin is clearly cut, and of two thirds or three quarters of the height of the body. Its length is more than a quarter more, and one seventh of the total length. The adipose, which begins almost immediately behind, is three times as long and three times lower. The anal begins below the middle of the adipose and measures barely the ninth of the total length in length and height. The caudal measures more or less the fifth [of the total length]; it is forked to the half; its lower lobe is a bit longer and larger. B. 8; D. 1/6; A. 12; C. 17 and some small ones; P. 1/7; V.6.

The upper side of this fish is a kind of brown more or less dark, with small darker clouds. The bottom side is whitish pale; the dorsal has a blackened band at its base, and

its upper two thirds have the interspaces between the rays more or less filled with blackened dots, which sometimes are continuous, and which therefore only leave a white band between the two dark parts. The other fins are brown or blackened, paler at their base.

The examination of its guts has shown us a quite thick liver, divided into two lobes [each] with many lobes; a small gallbladder, a stomach rounded and big, a winded intestine with a big diametre. The milt is composed of tassels; the swimbladder is big and oval, rounded behind; the kidneys are mediocre.

We have individuals from six to fifteen inches. That is, more or less, according to M. d'Orbigny, the size that the species can get. Its colour is darker the more it lives in stagnant or muddy water. The grooves or granulations of its helmet and its shoulder are stronger the older it is. One finds it in abundance in the Rio de la Plata and its affluents, in flowing waters as well as in lakes and swamps, above all in places which are covered with aquatic plants. The individuals live alone and peaceful at the bottom of the water, feeding from little worms, and never come to the surface by themselves. They can only be caught at night by fishing line, making, when you pull them out of the water, the same noise as the other species of the genus. The indians of the inner [parts of the continent] are nearly the only ones who eat them.

¹ Linné and his followers mistake it for the *clarias*.

9. Kner (1858)

Original text (pages 417-418). 7. Art *Pim. Sebae* Val.

Von dieser ohne Zweifel der vorigen

zunächst stehenden Art gebe ich in Fig. 19 blos die Ansicht der Hoden eines Männchens in etwas verkleinertem Massstabe und füge noch hinzu, dass die Eiersäcke der Weibchen zur Laichzeit die ganze Länge der Bauchhöhle einnehmen und mit durchaus grossen Eiern erfüllt sind. Dieser Art fehlt ein *Porus Pectoralis*, und der Seitencanal bildet kein verzweigtes Netz. - Unsere bis über 1 Fuss langen Exemplare stammen aus Marabitanos, wurden von Natterer als *Silurus sapipoca* unterschieden und mit den Provinznamen: *Bagre das Lagoas* und *Mandii chorão* bezeichnet.

Translation. 7. Art *Pim. Sebae* Val.

Of this species, which without doubt is closed to the previous [6. Art. *Pim. sapo* Val.], in fig. 19 I only provide the view of the testis of a male in a slightly reduced scale and add, that the ovaries of the female during the reproduction period occupy the complete length of the abdominal cavity and are filled with fairly big eggs. The species lacks a *Porus Pectoralis* and the lateral channel does not form a ramified net. - Our specimens, up to more than 1 foot long, originating from Marabitanos [today São Gabriel da Cachoeira, Amazonas state, Brazil], have been differentiated by Natterer as *Silurus sapipoca* and called by their vernacular names *Bagre das Lagoas* and *Mandii chorão*.

10. Hyrtl (1859)

Original text (page 16, table). Osteologische Tabelle der Siluroiden

Pimelodus sebae.

Bauchwirbel 11, Übergangswirbel 2, Schwanzwirbel 26, Gesamtzahl der Wirbel 39, Strahlen der Brustflossen 7, Strahlen der Bauchflossen 8, Strahlen der Rückenflosse 7, Strahlen der Afterflosse 19, Strahlen der

Schwanzflosse 12/12, Kiemenstrahlen 9, Zahl der Copulae 2

Translation. Osteological table of the Siluroids

Pimelodus sebae.

Ventral vertebrae 11, transition vertebrae 2, caudal vertebrae 26, total vertebrae count 39, rays in pectoral fins 7, rays in ventral fins 8, rays in dorsal fin 7, rays in anal fin 19, rays in caudal fin 12/12, branchial rays 9, number of copulae 2 [urohyal?]

11. Guenther (1864)

Original text (page 119)

8. *Pimelodus sebae*.

Seba, iii. pl. 29. fig. 5.

Mystus, sp., Gronov. Mus. Ichth. i. p. 34. no. 83, and Zoophyl. p. 125. no. 384.

Pimelodus sebae, Cuv. & Val. xv. p. 169

Kner, Sitzgsber. Acad. Wiss. Wien, xxvi. p. 417

Hyrtil, Denkschr. Acad. Wiss. Wien, 1859, xvi. p. 16.

D. 1/6. A. 12. P. 1/8. V. 6. Vert. 13/26.

Head covered with a very thin skin above, or almost naked; occipital process triangular, much longer than broad, not reaching the basal bone of the dorsal spine. Adipose fin very long, its length being contained twice and a third in the total (without caudal); it commences immediately behind the dorsal fin. Maxillary barbels extending on to the caudal, the outer ones of the mandible nearly to the ventral. The height of the body is a little less than the length of the head, which is one-fifth of the total (without caudal); the lower jaw scarcely shorter than the upper; the band of intermaxillary teeth is about eight times as broad as long. The diameter of the eye is one-half of the width of the interorbital space. Dorsal fin with

the spine very feeble, as long as high, or, in young specimens, rather higher than long. Pectoral spine serrated along both edges, as long as the head without snout. Caudal fin cleft to the base. Coloration uniform, dorsal fin blackish, with a white band across the basal portion.

South America.

a, b, c. Young. Demerara. Presented by Dr. Hancock.

d. Half-grown. British Guiana. From the International Exhibition 1862.

e. Adult. not good state. Brazil. Purchased of Mr. Frank.

f. Adult. South America. Presented by Sir R. Schomburgk.

12. Eigenmann & Fisher (1917)

Original text (pages 396-397).

5. *Rhamdia sebae* (Cuvier and Valenciennes).

7262a-h, C. M., 67-221 mm., Entre Rios, Rio Parahyba, June 1, 1908. Haseman.

7267a, C. M., 210 mm., Campos, Rio Parahyba, June 14, 1908. Haseman.

7269a, C. M., 90 mm., Barra da Pirahy, Rio Parahyba, July 12, 1908. Haseman.

7286a-c, C. M., 42-104 mm., Jacarehy, Rio Parahyba, July 15, 1909. Haseman.

7008a, C. M., 130 mm., Rio das Velhas, May 13, 1908. Haseman.

7270a, C. M., 121 mm., San Joaquin, Sept. 4, 1909. Haseman.

7265a-b, C. M., 175-234 mm., Pará, Dec. 24, 1909. Haseman.

The specimens referred to *R. sebae* are from Entre Rios, Campos, Barra da Pirahy, Jacarehy, all in the Parahyba Basin, and from the Amazon basin. In all but two from Entre Rios the dorsal is I,6. In the exceptions it is I,7. The maxillary barbel extends beyond base of caudal in the young

from San Joaquin, Rio das Velhas, Jacarehy, and Barra da Pirahy, to the second third of the adipose in the largest from the Rio Parahyba, beyond the middle in the largest from Para. In specimens of equal size the barbels seem to be a little shorter in the specimens from the Parahyba. Adipose 2.25-3 times in the length. Pectoral spine 2.5-1.66 times in the length, much longer in the adult than in the young. Eye 5-6.5 in the head.

6. *Rhamdia quelen* (Quoy & Gaimard).

This species is represented by specimens from localities on the coastal streams from the Rio Sao Francisco to Paranagua as follows:

7264a-g, C. M., 50-168 mm., Rio Coité, into R. Sao Francisco. Nov. 6, 1907. Haseman.

7278a, C. M., 145 mm., Rio Sao Francisco, June 10, 1909. Haseman.

7272a-b, C. M., 126 mm., Raiz da Serra, Rio Mogy, into Santos Bay. July 26, 1908. Haseman.

7274a-c, C. M., 79-115 mm., Cubatao, 7 miles west of Santos, August 1, 1908. Haseman.

7266a-b, C. M., 59-95 mm., Aqua Quente, Ribeira da Iguape, Nov. 27, 1908. Haseman.

7268a-c C. M., 31-174 mm., Iporanga, Ribeira da Iguape, Dec. 1, 1908. Haseman.

7310a-c, C. M., 40-54 mm., Xiririca, Dec. 5, 1908. Haseman.

7288a-c, C. M., 30-155 mm., Morretes, near Paranagua, Jan. 4, 1908. Haseman.

The specimens from localities in the Paraguay basin are as follows:

7271a, C. M., 219 mm., Sapucay, April 5, 1909. Haseman.

7279a-f, C. M., 70-138 mm., Corumbá, May 2, 1909. Haseman.

7281a, C. M., 149 mm., Puerto Suarez, May 6, 1909. Haseman.

7284a-f, C. M., 95-121 mm., Villa Hays, April 13, 1909. Haseman.

7273a-b, C. M., 110-150 mm., San Matias, June 8, 1909. Haseman.

From the Tieté basin we have twelve specimens.

7263a-l, C. M., 53-175 mm., Mogy das Cruzes, Rio Tieté, July 19, 20, 1908. Haseman.

In the specimens from the coastal streams, the Sao Francisco, Rio Coité, Parahyba, tributaries of Santos Bay, and Riberao, the dorsal is uniformly I,6, the maxillary barbel extends to below some portion of the adipose.

In the specimens from the Paraguay basin the dorsal is I,6 in sixteen specimens, I,7 in but one from Corumbá. The maxillary extends to the origin of the adipose in the Sapucay specimen and in one from San Mateo, to below some part of the posterior half of the adipose in the rest.

In the specimens (No. 7263), from the Parana basin at Mogy das Cruzes, the dorsal is uniformly I,6. The maxillary is unusually short, reaching little beyond the origin of the dorsal in the next to the largest specimen, and little beyond the origin of the adipose in any of them. Interorbital 3-3.33 in the head. There is in all of these much variation in color.

13. *Larrañaga* (1923)

Original text 1 (page 376). *Silurus ribularis*

- pinna dorsali postica adiposa, lunata, ani radiis 9, cirris 6, spinis pectoralibus serratis. (B. de arroyo). Pedalis - dilute ciner. immac.^s sub-albus. cauda bifida.

B. 8, D. 7, P. 1/10, V. 6, A. 9. C. 16.

Translation. *Silurus ribularis* – the posterior dorsal fin is an adipose, semilunar, 9 anal fin rays, 6 barbels, spines of pectoral fins serrated. (Stream Catfish [‘bague de arroyo’

as a local name]). One foot long – light ash-grey, untainted, whitish pale. caudal fin forked.

B. 8, D. 7, P. 1/10, V. 6, A. 9. C. 16.

Original text 2 (page 385). 2.^a Sp. *Silurus 9-radiatus* - pinna dorsali postica adiposa, ani radiis 9, cirris 6, spinis pectoralibus serratis. Sp. n. cauda bifida.

B. 8, D. 1/7, P. 1/10, V. 6, A. 9, C. 16.

Habitat: communis in aquis dulcibus rivulorum pedalis, dilute cinereus, immaculatus. Bagre de arroyo.

Translation. 2nd Sp. *Silurus 9-radiatus* - the posterior dorsal fin is an adipose, 9 anal fin rays, 6 barbels, spines of pectoral fins serrated. New species. Caudal fin forked.

B. 8, D. 1/7, P. 1/10, V. 6, A. 9, C. 16.

Occurrence: common in the freshwater of rivulets. Light ash-grey, untainted. Stream Catfish ['bagre de arroyo' as a local name].

14. Boeseman (1972)

Original text (page 300-301). *Pimelodus sebae* Valenciennes, 1840: 169

Actually, this is not a new species but merely a new name for *Pimelodus quelen* Quoy & Gaimard, 1824. About the present species Valenciennes (1840: 173) states: "nous ne voyons aucun moyen de le distinguer du pimélope Quelen, pris à Monté-Vidéo par MM. Quoy et Gaimard", and one may wonder why most authors ever since have considered *sebae* and *quelen(i)* as different species.

Among the material listed, all of which should be considered syntypical for *sebae*, Valenciennes records the Leiden Museum to have received the species from Cayenne, omitting any information on number or size. It seems clear that Valenciennes actually

refers to material sent from Surinam by Dieperink. In the Leiden collection are nine examples from that source, three of which (cf. remarks by Temminck on the invoice, see introductory paragraphs) should be considered syntypes: reg. nos. RMNH 3064, 1 ex., 255 (315) mm; RMNH 3065, 1 ex., 175 (222) mm; RMNH 3066, 1 ex., 140 (153) mm; RMNH 3067, 4 ex., 162 (197) mm, 168 (206) mm, 180 (222) mm, and 228 (280) mm; and RMNH 3068, 2 ex., 112 (140) mm and 167 (202) mm.

Some of these examples have been recorded by Bleeker (1864: 77), all by Van der Stigchel (1946, 1947: 50), without any remarks on a typical status.

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