A NEW NOMINAL GENUS FOR “PRESTOSUCHUS” CHINIQUENSIS
HUENE, 1938 (TRIASSIC OF SOUTHERN BRAZIL): HUENESUCHUS,
GENUS NOVUS ET COMBINATIO NOVA

EDIO-ERNST KISCHLAT
Divisão de Bacias Sedimentares (DIBASE), Superintendência de Porto Alegre (SUREG-PA),
Serviço Geológico do Brasil (SGB/CPRM). Rua Banco da Província, 105, 90.840-030, Porto Alegre,
Rio Grande do Sul, Brazil. edio.kischlat@sgb.gov.br

ABSTRACT – The nominal genus Prestosuchus Huene was originally proposed comprising two nominal species, but without a valid indication of the type-species. According to the International Code of Zoological Nomenclature, this indication is essential for proposals after the year 1930. Consequently, both nominal species, although valid, have a very uncomfortable situation. Therefore, a new nominal genus, Huenesuchus, is here proposed to correct this nomenclatural situation to be used in the new combination Huenesuchus chiniquensis. In addition, it is noted that two class-group names that have been used lately in the literature are previously occupied. The first, Suchia Krebs, is previously occupied by Simpson. The second, Loricata Merrem, is previously occupied by Schumacher. Therefore, two substitute names are here proposed: Holosuchia for the first and Loricatosuchia for the second.

Keywords: Archosauria, Prestosuchus, Huenesuchus, Santa Maria Formation, Triassic.

INTRODUCTION

Crocodylotarsian archosaurs of the Brazilian Triassic have been the subject of several doctoral/master’s theses (Mattar, 1985; Azevedo, 1991; Kischlat, 2003; Mastrantonio, 2010; França, 2011; Lacerda, 2012; Raugust, 2014; Roberto-da-Silva, 2017; Santos, 2017) and articles (Mattar, 1987, 1989; Azevedo, 2011; Lacerda, 2012; Raugust, 2014; Roberto-da-Silva, 2017; Santos, 2017) and articles (Mattar, 1987, 1989; Azevedo, 1995; Kischlat, 2002; França et al., 2011, 2013; Mastrantonio et al., 2013, 2019; Roberto-da-Silva et al., 2016, 2020; Lacerda et al., 2015, 2016, 2018; Desojo et al., 2020) and Prestosuchus chiniquensis Huene, 1938a, has been at the center of discussion in the presence of new specimens belonging to this taxon. However, the formal availability of this nominal genus has not been investigated until now. The application of the International Code of Zoological Nomenclature (I.C.Z.N., 1999) shows that Prestosuchus Huene, 1938a, is an unavailable genus name. The goal of this paper is to discuss the nomenclatural validity of the nominal genus Prestosuchus Huene, 1938a, as well as some higher order names in the Archosaurian lineage towards the current crocodilians.

MATERIAL AND METHODS

The anatomical terms follow that proposed by the anatomical committees (Baumel et al., 1993; I.C.V.G.A.N., 2012; F.I.P.A.T., 2019) in place of traditional descriptive ones. Concerning archosaurs, the avian nomenclature (Baumel et al., 1993) occupies a central position. For a comprehensive understanding of general terminology, I suggest Collin (2007).

Throughout the body of this paper, the articles of the International Code of Zoological Nomenclature (I.C.Z.N., 1999, hereinafter referred to as the Code) are precisely cited when and where they are relevant. I propose to use the symbol
“G” representing “character”. This symbol was once used for the old Brazilian currency (cruzeiro) and nowadays, this currency is obsolete. Now, this symbol can have a utility.

**Institutional Abbreviations:** CPEZ, Coleção de Paleontologia do Museu Paleontológico e Arqueológico Walter Ilha, São Pedro do Sul, Rio Grande do Sul, Brazil; SNSB-BSPG, Staatliche Naturwissenschaftliche Sammlungen Bayerns (SNSB), Bayerische Staatsammlung für Paläontologie und Geologie (BSPG), München, Germany; UFRGS-PV, Laboratório de Paleovertebrados, Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil; ULBRA-PVT, Coleção de Paleovertebrados, Universidade Luterana do Brasil, Canoas, Rio Grande do Sul, Brazil.

**BACKGROUND: FRIEDRICH VON HUENE AND HIS WORK IN BRAZIL**

Huene’s (1935–42) book, *Die Fossilen Reptilien des Sudamerikanischen Gondwanalandes*, is the start point of the knowledge of the Brazilian Triassic Paleontology. This work has a Portuguese translation published in 1990 by Carlos Burguer Júnior and revised by M.C. Barberena (see Huene, 1990). Huene’s (1935–42) book was published in four parts (Lieferungen). The first one (dealing with Anomodontia) was published on December 1st, 1935. The second one (Cynodontia) was published on October 26th, 1936, and the third and fourth parts (Pseudosuchia and Saurischia, Rhynchosauridae, and the final section – Schlussabschnitt) were published in Spring (Frühjahr) of 1942 (Huene, 1942: v, 1990:7).

There is also a Referate (report) authored by himself published in 1938a in the journal *Forschungen und Fortschritte* where he introduced three new binomina *Stahleckeria potens*, *Belesodon magnificus*, and *Prestosuchus chiniquensis*. Concerning the binomen *Prestosuchus chiniquensis*, it is a nomen nudum (I.C.Z.N., 1999:111) because it was not described nor defined, directly or indirectly by a bibliographic reference (arts. 13.1.1 & 13.1.2).

There is also a Referate (report) authored by himself published in 1938a in the journal *Neues Jahrbuch für Mineralogie, Geologie und Paläontologie*. In his 1938 Referate, he proposed (as a redundant nomenclatural act) the new binomina *Stahleckeria potens*, *Belesodon magnificus*, and *Prestosuchus chiniquensis*. Concerning the binomen *Prestosuchus chiniquensis*, it is a nomen nudum (I.C.Z.N., 1999:111) because it was not described nor defined, directly or indirectly by a bibliographic reference (arts. 13.1.1 & 13.1.2).


**HUAHUESUCHUS NEW NOMINAL GENUS**

Huene (1938a, 1942) introduced the nominal genus *Prestosuchus* including two nominal species: *P. chiniquensis* and *P. loricatus*. He (1938a:146, 1942:161) used the expression “n. g. n. sp.” applied to the first of his two species (*P. chiniquensis*) and, for the second (*P. loricatus*), he used the expression “n. sp.” (Huene, 1938a:147, 1942:185). So, Kuhn (1961a:87) indicated *P. chiniquensis* as the “genotypus” (cf. I.C.Z.N., 1912:45, footnote), followed by Krebs (1976:75, “Typusart”) and Barberena (1978:63, “Type-Species”).

As quoted above, the Code (Art. 13.3) asks that “every new genus-group name published after 1930 […] must […] be
accompanied by the fixation of a type species in the original publication [...]” and the expressions “gen. n., sp. n.” are only valid as original designation if applied before 1931 (Art. 68.2.1). It should also be noted that any later type fixation likewise only applies to a taxon “established before 1931” (Art. 69). As a consequence, neither Kuhn’s (1961a:87), nor Krebs’ (1976:75), nor Barberena’s (1978:63) type indications can be accepted as subsequent type designations.

The absence of a valid original type-species fixation challenges the availability of *Prestosuchus* as introduced by Huene (1938a, 1942). It is not a matter of invalidity of a name, but a matter of availability, and *Prestosuchus* Huene, 1938a *Prestosuchus* can be accepted as subsequent type designations. As a consequence, neither Kuhn’s (1961a:87), nor Barberena’s (1978:63) type indications (Art. 69). As a consequence, neither Kuhn’s (1961a:87), nor Barberena’s (1978:63) type indications could also be done here, with the present date and authorship, but it will raise ambiguity and confusion in the literature.

Reintroducing *Prestosuchus* as a new genus will bring some problems because many authors/readers will not understand these nomenclatural meanders in changing, in practice, only the authorship. *Prestosuchus* is the type-genus of the family-group name (*Prestosuchidae*) and the eponym of the class-group name (*Prestosuchia*). An unusual situation will happen with *Prestosuchus* Huene, 1838 (*nomen nudum*), and the new homonym because both would be also synonyms in having the same species name *chiniquensis* associated. Two names being, at the same time, synonyms, and homonyms of each other will be very confusing. And this would also happen with the coordinated names *Prestosuchidae* and *Prestosuchia*.

Nomenclature is “a system of names, and provisions for their formation and use” (I.C.Z.N., 1999:111). On the other hand, Taxonomy is “the theory and practice of classifying organisms” (I.C.Z.N., 1999:119). Therefore, Taxonomy concerns the discovery/recognition of different taxa and their interrelationships, and Nomenclature refers to rules for a name to be applied to each discovered/recognized taxon.

Currently, there is already ambiguity and taxonomic confusion in applying the binomen *Prestosuchus chiniquensis* in several recent phylogenetic analyses and this subject should be properly raised. Of special interest are the huge dataset and the phylogenetic analysis presented by Ezcurra (2015, 2016) that was iterated by several authors (see below). His coding sequence for “Prestosuchus chiniquensis” does not reflect, nor include the type-material and, as consequence, this binomen is applied to a different taxon. Today nearly almost all the information in the literature, except for the description of the type-material of *P. chiniquensis* in Desojo et al. (2020), refers to this new taxon named preliminarily by Kischlat & Barberena (in Kischlat, 2002) as “Karamuru vorax”. In sum, the binomen *Prestosuchus chiniquensis* is currently taxonomically corrupted and this should be properly fixed. Evaluating the nomenclatural fault discussed above and the current taxonomic corruption, is, therefore, necessary to propose a new generic name to be used in a binomen with the nominal species *chiniquensis* that nowadays only comprises the type-material. Here I propose the new genus name *Huenesuchus* gen. nov., to be used in the new binomen combination *Huenesuchus chiniquensis* (Huene, 1938a).

Concerning the species-group name [*Prestosuchus*] *loricatus* originally associated with *Prestosuchus* Huene, 1838 (*nomen nudum*), it was included in its nominal genus *Abaporu* by Kischlat (2002:501).

**SYSTEMATIC PALEONTOLOGY**

**ARCHOSAURIA** Cope, 1870

**Definition.** “All the descendants of the most recent common ancestor of extant birds and crocodiles” (Gauthier, 1986:8). Recently, Gauthier & Padian (2019:1187) proposed an updated definition as the crown clade containing *Alligator* Cuvier, 1807, and *Campsognathus* Wagner, 1859, but here I continue with my previous definition (Kischlat, 2002:276) as the crown clade containing *Crocodilus* Cuvier, 1807, and *Megalosaurus* Buckland, 1824 (see Appendix 1).

**CROCODYLOTARSI** Benton & Clark, 1988

**Definition.** “Crocodiles and archosaurs closer to crocodiles than to birds” (Gauthier & Padian, 1985:189). Here I continue with my previous definition (Kischlat, 2002:277) as the stem containing *Crocodylus* Laurenti, 1768, but not *Vultur* Linneus, 1758 (see Appendix 1).

**HOLOSUCHIA** (*nomen substitutum*)

**Definition.** The least inclusive clade containing *Aetosaurus* Fraas, 1877, *Rauisuchus* Huene, 1938a, *Huenesuchus* gen. nov., and *Crocodylus* Laurenti, 1768 (updated and simplified from Nesbitt, 2011:195) (see Appendix 1). Suchia Krebs, 1974, is previously occupied by Suchia Simpson, 1937 (*Crocodyliformes*). Therefore, I propose the substitute class-group name *Holosuchia* [cf. Art. 1.2.2, “Articles (…10.6…) also regulate names of taxa at ranks above the family group” which deals with the invalidity of junior homonyms].

**LORICATOSUCHIA** (*nomen substitutum*)

**Definition.** Stem, the most inclusive clade containing *Crocodylus* Laurenti, 1768, but not *Poposaurus* Mehl, 1915, *Ornithosuchus* Newton, 1893, and *Aetosaurus* Fraas, 1877 (simplified from Nesbitt, 2011:200) (see Appendix 1). Loricata Merrem, 1820, is previously occupied by Loricata
Schumacher, 1817 (Mollusca). Therefore, I propose the substitute class-group name Loricatosuchia [cf. Art. 1.2.2, “Articles (…10.6…) also regulate names of taxa at ranks above the family group” which deals with the invalidity of junior homonyms].

HUENESUCHIA new class-group name

**Definition.** Stem, the most inclusive clade containing *Huenesuchus*, gen. nov., but not *Crocodylus* Laurenti, 1768 (see Appendix 1).

**Eponym.** *Huenesuchus* gen. nov.

**Nomenclatural note.** As *Prestosuchus* Huene, 1938a (also in 1942) is an unavailable name (*nomen nudum*, I.C.Z.N., 1999:111), the obscure class-group name *Prestosuchia* Parrish, 1993 (p. 308; also in Parrish, 1994:204) lost its formal eponym. Therefore, I propose Huenesuchia as a new family-group name (cf. analogy to Art. 37.2, which deals with family-group names).

HUENESUCHIDAE new family-group name

urn:lsid:zoobank.org:act:AD764DC2-B33C-48BF-AF41-DD2746A1D83D

**Definition.** Node, necessarily including *Huenesuchus* gen. nov. and, today, *Stagonosuchus* Huene, 1938b; to be formally defined in the future when greater diversity is known.

**Type-genus.** *Huenesuchus* gen. nov.

**Diagnosis.** Today, following the present phylogenetic analysis (see ahead), hueneusichids include *Huenesuchus*, gen. nov., and, *Stagonosuchus* Huene, 1938b; which share the following unambiguous apomorphies: *Ischium* with *Margo ventralis* with an abrupt change in angle between *Extremitas adacetubularis* and *Scapus* (G296.1); *Fibula* in its *Extremitas distalis*, with a fossa on its *Facies medialis* (G422.1).

**Nomenclatural note.** As *Prestosuchus* Huene, 1938a (also in 1942) is an unavailable name (*nomen nudum*, I.C.Z.N., 1999:111), the family-group name *Prestosuchidae* Romer, 1966 (p. 368), turns also to be unavailable (Art. 37.2).

*Huenesuchus* gen. nov.

urn:lsid:zoobank.org:act:E5B41FEA-CF59-4955-9C70-5B72A3CD0792

**Type-species.** *Huenesuchus chiniquensis* (Huene, 1938a), comb. nov.

**Derivatio nominis.** In honor of Friedrich von Huene, who unfortunately proposed the genus-group name *Prestosuchus* in 1938a (repeated in 1942) using a notation for fixation of the type-species that would be suppressed shortly soon, being only valid before the year 1931 (cf. Art. 68.2.1); and *-suchus* (Gr. σοущος, soichtos: crocodile; Bailly, 2020:2124), the name used by ancient Egyptians from Arsinoé (today el-Fayyûm) for crocodiles (Strábonos [Στράβωνοσ], ex Jones, 1967:106).

**Included species.** Only the type-species.

**Lectotype.** SNSB-BSPG AS XXV 1–3/5–6/8–12/28–35, designated by Krebs (1976), comprising a complete *Symphysia mandibulae* with most of the left *Ramus mandibulae* preserved with some teeth, right *Os premaxillare* also with some teeth, and an incomplete postcranial skeleton. Desojo et al. (2020:8) indicated the number of the lectotype as “1–3/5–11/28–41/49”, but this is not correct because they included #7, #36–#41, and #49, and excluded #12, mixing specimens that are not part of the type-material (see Table 1). According to the SNSB-BSPG catalog (see Supplementary file 1) there are sequential numbers that were here abbreviated as 1–3/5–6/8–12/28–35.

**Paralectotype.** An incomplete sacrum and right ilium, part of the last frontal vertebra, and some sacral osteoderms (SNSB-BSPG AS XXV 7), recently described by Desojo et al. (2020).

**Diagnosis.** *Symphysia mandibulae* with both splenials dorsally reaching well rostrally the dental tooth I and, in ventral view, with an extensive *Symphysis* interplenaes reaching caudally well the level of the dental tooth V, possibly reaching the dental tooth VI. *Scapula* with the *Acromion* not developed, with a notch (*Incisura acromialis*) cutting the margin of the *Os coracoidal*; forming an uncination in this bone; *Margo distalis* of *Os coracoidal* convexly curved; *Corpus humeri* probably relatively thin. Absence of *Crista supraacetabularis illii*; *Ischium* with an abrupt change in angle between *Extremitas adacetubularis* and *Scapus*; *Femur* with the *Condylus medialis* (*Norma distalis*) tapering to a point on the medial portion; *Fibula* with a fossa ("lunate fossa") distally, on *Facies medialis*; *Calcaneus* with a short and wide *Tuber*. The paralectotype shows the transition point of the double row of paramedian pair of osteoderms to only a sagittal pair on the first caudal vertebra. (All updated from both Kischlat, 2002, and Desojo et al., 2020).

**Nomenclatural note.** *Prestosuchus* Huene, 1938a (also in 1942) is an unavailable name (*nomen nudum*, I.C.Z.N., 1999:111), so *Huenesuchus* is not a *nomen novum* because it does not replace any available name (Art. 12.2.3). But, in practice, it works as such because the present type-species (i.e., *Huenesuchus chiniquensis* comb. nov.) has the same name-bearing specimen as for the previously proposed type-species (i.e., *"Prestosuchus" chiniquensis*). As an unavailable name, the nominal genus *Prestosuchus* Huene, 1938a (*nomen nudum*), should be always cited under quotation marks when associated with *chiniquensis* in the binomen *"Prestosuchus" chiniquensis*.

**Stratigraphic procedence.** Pinheiro-Chiniquá Sequence, *Dinodontosaurus* Assemblage Zone, Santa Maria Formation, Ladinian/Carnian (Middle/Upper Triassic) (Schultz et al., 2020:5). The correct name for the locality in the Municipality of Candelária (State of Rio Grande do Sul, Brazil), is Pinheiro (29°47'30"S 52°44'25"W), in singular, and not the plural “Pinheiros”, as expressed by several previous authors (e.g., Barberena, 1978:63; Azevedo, 1991:2; Schultz et al., 2020:6). The Brazilian Code of Stratigraphic Nomenclature (Petri et al., 1986:382) asks for the “immutability of consecrated names”, but the name “Pinheiros” was formally listed twice in the Stratigraphic Lexicon of Brazil (Branco, 1984:317;
**Tabela 1.** Original material of *Huenesuchus chiniquensis* listed in SNSB-BSPG catalogue and/or cited in Huene (1942), comprising the lectotype, paralectotype, and referred ones, compared with material described or indicated in Desojo et al. (2020).

<table>
<thead>
<tr>
<th>Specimen</th>
<th>SNSB-BSPG AS XXV</th>
<th>Material</th>
<th>Huene (1942)</th>
<th>Desojo et al. (2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectotypus</td>
<td>#1</td>
<td>“Linker Unterkieferast” Left hemimandible</td>
<td>pages 161-163, fig. 28; pl. 18, fig. 3(a–b)</td>
<td>pages 15-17; fig. 5(1–6)</td>
</tr>
<tr>
<td>#2</td>
<td>“Rechte Scapula&quot; Right scapula</td>
<td>page 171; pl. 18, fig. 4</td>
<td></td>
<td>page 22</td>
</tr>
<tr>
<td>#3</td>
<td>“Letzter Sacralwirbel, Schwanzwirbel I-VI, linkes Ilium und beide Ischia” Last sacral vertebrae, caudal vertebrae I-VI, left ilium and both ischia</td>
<td>pages 168-170, 175-176; pl. 18, figs. 1–6; pl. 19, figs. 2, 4</td>
<td>pages 18, 20, 26; figs. 7(6–8), 11(3–5)</td>
<td></td>
</tr>
<tr>
<td>#5(a–d)</td>
<td>“Bauurchinen (4 Teilstücke)” Abdominal ribs (4 sections)</td>
<td>page 168; pl. 19, fig. 1</td>
<td></td>
<td>page 22, fig. 8(1–2)</td>
</tr>
<tr>
<td>#6</td>
<td>“Beide Pubis ohne Proximalende” Both pubis without proximal end</td>
<td>page 176; pl. 19, fig. 3</td>
<td></td>
<td>page 26; fig. 11(1–2)</td>
</tr>
<tr>
<td>#8</td>
<td>“Kopf einer linken mittleren Dorsalrippe ohne Tuberculum” Head of a left middle dorsal rib without a tubercle</td>
<td>pages 167-168; pl. 20, fig. 1</td>
<td></td>
<td>page 22; fig. 8(3, part as #49)</td>
</tr>
<tr>
<td>#9</td>
<td>“Mitleres Dorsalrippenstueck” Part of a middle dorsal rib</td>
<td>page 168; pl. 20, fig. 2</td>
<td></td>
<td>page 22, fig. 8(3, part)</td>
</tr>
<tr>
<td>#10</td>
<td>“Linker Femur” Left femur</td>
<td>page 177; pl. 20, fig. 3</td>
<td></td>
<td>page 26-27; fig. 12(1–6)</td>
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<tr>
<td>#11(a–l)</td>
<td>“Linke Tibia, Fibula u. FuB” Left tibia, fibula and foot</td>
<td>pages 177-182, figs. 38–39(a); pl. 20, fig. 4(a–b); pl. 21, fig 2(a–b)</td>
<td></td>
<td>pages 27-33; figs. 12(7–18), 13(1–8)</td>
</tr>
<tr>
<td>#12</td>
<td>“Brust-Schultergurtel” Chest-shoulder girdle</td>
<td>pages 170-172; pl. 21, fig 1(a–b)</td>
<td></td>
<td>pages 22-24; fig. 9(1–3)</td>
</tr>
<tr>
<td>#28</td>
<td>“Fragment der rechten Praemaxilla usw.” Fragment of the right premaxilla, etc.</td>
<td>pages 163-164, fig. 29(a–d)</td>
<td></td>
<td>pages 10-15; fig. 4(1–4)</td>
</tr>
<tr>
<td>#29</td>
<td>“Zentrum des letzten Halswirbels” Center of the last cervical vertebra</td>
<td>page 165, fig. 30(a–b)</td>
<td></td>
<td>page 17; fig. 6(1–3)</td>
</tr>
<tr>
<td>#30</td>
<td>“Fragment eines hinteren Halswirbels” Fragment of a posterior cervical vertebra</td>
<td>pages 165-166, fig. 31(a–b)</td>
<td></td>
<td>pages 17-18; fig. 6(4–7)</td>
</tr>
<tr>
<td>#31</td>
<td>“Teile von zwei vorderen Ruckenwirbeln” Parts of two anterior vertebrae</td>
<td>pages 166-167, fig. 32</td>
<td></td>
<td>page 18; fig. 6(8–9)</td>
</tr>
<tr>
<td>#32(a–b)</td>
<td>“Zentrum von distalen Schwanzwirbeln mit Haemapophysen, Schwanzwirbel-Zentrum” Centrum of distal caudal vertebrae with haemapophyses, caudal vertebrae centrum</td>
<td>page 170, figs. 33–34</td>
<td></td>
<td>pages 20, 22; figs. 6(8–9), 7(6–8)</td>
</tr>
<tr>
<td>Specimen</td>
<td>SNSB-BSPG AS XXV</td>
<td>Material</td>
<td>Huene (1942)</td>
<td>Desojo et al. (2020)</td>
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<tr>
<td>Lectotypus</td>
<td>#33</td>
<td>“Oberende des linken Humerus”</td>
<td>page 173, fig. 35</td>
<td>page 24; fig. 10(1~3)</td>
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<tr>
<td></td>
<td></td>
<td>Upper end of the left humerus</td>
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<tr>
<td></td>
<td>#34</td>
<td>“Oberende des rechten Humerus”</td>
<td>pages 173-174, fig. 36</td>
<td>page 24; fig. 10(5~6, as #33)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Upper end of the right humerus</td>
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<tr>
<td></td>
<td>#35</td>
<td>“Distales Fragment des rechten Humerus”</td>
<td>page 174, fig. 37</td>
<td>page 24; fig. 10(4)</td>
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<td></td>
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<td>Distal fragment of the right humerus</td>
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<tr>
<td></td>
<td>#?, only in text</td>
<td>“Atlas”</td>
<td>page 164</td>
<td>not cited</td>
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<td></td>
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<td>Atlas</td>
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<td></td>
<td>#?, only in text</td>
<td>“Stück des vermutlichen Radius-Distalendes”</td>
<td>page 174</td>
<td>not cited</td>
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<td></td>
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<td>Piece of the putative radius distal end</td>
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<tr>
<td></td>
<td>#?, only in text</td>
<td>“Eine Handphalange”</td>
<td>page 174</td>
<td>not cited</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One hand phalange</td>
<td></td>
<td></td>
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<tr>
<td>Paralectotypus</td>
<td>#7</td>
<td>“Oberer Teil des Ilium, beide Sacralrippen, Dornfortsätze beider Sacralwirbel und des letzten Rückenwirbels, dorsale Panzerplatten”</td>
<td>pages 183-185; pl. 19, fig. 5 (a~b)</td>
<td>pages 18, 22; figs. 7(1~5), 8(4)</td>
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<tr>
<td></td>
<td></td>
<td>Upper part of the ilium, both sacral ribs, spinous processes of both sacral vertebrae and the last dorsal vertebra, dorsal armor plates</td>
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</tr>
<tr>
<td>Originally only referred</td>
<td>#36</td>
<td>“eine Klaue [...] dem Fuß”</td>
<td>page 185</td>
<td>not cited</td>
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<tr>
<td></td>
<td></td>
<td>One ungueal from foot</td>
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<td></td>
<td>#37</td>
<td>“Ein distale Fußphalange”</td>
<td>page 185</td>
<td>not cited</td>
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<td></td>
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<td>One distal foot phalange</td>
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<tr>
<td></td>
<td>#38</td>
<td>“Das Proximalende einer gröberen Phalange”</td>
<td>page 185</td>
<td>not cited</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The proximal end of a larger phalange</td>
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<tr>
<td></td>
<td>#39</td>
<td>“gekrümmte Mittelfragment einer Abdominalrippe”</td>
<td>page 185</td>
<td>not cited</td>
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<tr>
<td></td>
<td></td>
<td>Curved middle fragment of an abdominal rib</td>
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<td></td>
<td>#40~41, only catalogue</td>
<td>“[2] Abdominalrippen-Fragm.”</td>
<td>page 185 (?) (as indicated in the catalogue)</td>
<td>not cited</td>
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<tr>
<td></td>
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<td>[2] abdominal rib fragments</td>
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<tr>
<td>Not referred</td>
<td>#49, referred to “P. loricatus” in catalogue</td>
<td>“Dorsalrippenstück”</td>
<td>page not found (not #19, nor #21, both on page 188)</td>
<td>error (see #8)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dorsal rib piece</td>
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</table>
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Hasui & Baptista, 1984:317). Thus, it is convenient to rise this issue for proper evaluation elsewhere.

**Type locality.** “Weg Sanga”, Chiniquá (29°40’1”S 54°22’1”W”), Municipality of São Pedro do Sul, west of Santa Maria City, Rio Grande do Sul, Brazil.

**DISCUSSION**

Huene (1938a:146) introduced the binomen “Prestosuchus chiniquensis” assembling from different localities as the hypodigm (vide Simpson, 1940:418, 1945:30, 1961:185, for this concept). Later, Krebs (1976:76, repeated in Kischlat & Barberena, 1999:53) designated the first more complete specimen (SNSB-BSPG AS XXV 1–3/5–6/8–12/28–35), that which has the mandible, as the lectotype. Consequently, the second specimen (SNSB-BSPG AS XXV 7) turned out to be the paralectotype (Art. 74.1.3). An extraneous third specimen (from Sanga Pascoal, at Pinheiro, UFRGS-PV 156T), described in Barberena (1978), was once considered as the “type” (Azevedo, 1995:61, “tipo”), but this apparent designation is invalid because this specimen is not part of the original type-material (cf. Art. 74.2; Kischlat & Barberena, 1999).

The lectotype has been cited with the number “1–3/5–11/28–41/49” (Nesbitt, 2009:53, 2011:33; Desojo et al., 2020:8), but following the SNSB-BSPG Catalog (Supplementary file 1) this is not correct and should be properly fixed. This Catalog was kindly provided by Dr. Peter Wellnhofer when I visited the Bayerische Staatsammlung in München (November 1997), and it uses the acronym “1933 L” (instead of “AS XXV”) as I have used it before (Kischlat, 2002).

The specimen SNSB-BSPG AS XXV 7 concerns the paralectotype of Huenesuchus chiniquensis, and the specimens SNSB-BSPG AS XXV 36–41 were only originally referred to H. chiniquensis with doubts (Huene, 1942:185, 1990:196; “Prestosuchus chiniquensis (?)”). These are not part of the type-series (cf. Art. 72.4.1). Desojo et al. (2020:8) also did not expressly include specimen #12 in their full number “1–3/5–11/28–41/49”, but they described it as part of the holotype.

Desojo et al. (2020:23, fig. 8.3) figured a proximal rib fragment as being the SNSB-BSPG AS XXV 49. But this same specimen was figured in Huene (1942, 1990, pl. 20, fig. 1) and the SNSB-BSPG Catalog lists it as #8. In this Catalog, the true #49 is indicated as part of a dorsal rib (“dorsalrippenstück”) belonging to “Prestosuchus loricatus”, but I didn’t find its description in Huene’s (1942:185–191) text. On the other hand, the description of three rib fragments (#19 and #21a–b) is present (Huene, 1942:188, “Dorsalrippen”).

Huene (1942:186) hypothesized that the type-material of Prestosuchus loricatus (SNSB-BSPG AS XXV 13–24/26–27/43–48) belongs to a single individual (“einem einzigen Individuum herrühren”). Thus, all material should be called the holotype and not as syntypes, and only syntypes could become lectotype and parallectotype(s) (cf. Art. 73.2.2). Any restriction of this holotype should follow Art. 73.1.5 (“If a subsequent author finds that a holotype [...] is not derived from an individual animal, the extraneous components may, by appropriate citation, be excluded from the holotype”), and Huene (1942:186) expressly indicated that in case of doubt, the species name should be attached to the presacral vertebral remains (“Im Zweifelsfall soll der Speciesname an den Præsacralwirbelresten hängen”). The composite nature of the holotype is still to be demonstrated (although very probable), but if something is Prestosuchus loricatus, the two presacral vertebrae (#13a–b) are the core. Huene (1942:190–191) also referred to additional material (SNSB-BSPG AS XXV 4/25/42) in doubts (“Prestosuchus loricatus (?)”) and these specimens are not part of the type-series (cf. Art. 72.4.1). I didn’t unequivocally find the citation of specimens #46a–l in Huene’s (1942:185–191) text (“Ein isoliert Dornfortsatz?”, p. 189).

Desojo et al. (2020:6) indicated the full number of the “lectotype” (or “holotype”, p. 9) of Prestosuchus loricatus as “1–3/24–26–27/44–48”, excluding specimen #43, which was included in Huene (1942:189). Concerning the purported “parallectotype”, they did not cite expressly any specimen, but according to their dataset it is the additional material (SNSB-BSPG AS XXV 4/25/42) originally referred with doubts to Prestosuchus loricatus. Aside from the fault in not following Art. 72.4.1 (exclusion of doubt specimens from type-series) and Art. 73.2.2 (only syntypes could become lecto- and parallectotypes), these lectotype/parallectotype indications were not done as an express statement (cf. Art. 74.7) and they are not valid (although repeated in Nesbitt et al., 2020:38; Tolchard et al., 2021:597; Butler et al., 2022:4).

The first mention of the lectotype of Prestosuchus chiniquensis concerns a short note made by Huene (1929:54) briefly describing a sketch of the mandible (SNSB-BSPG AS XXV 1) sent to him from Brazil and supposedly identified as a probable belodont (“wahrscheinlich Parasuchier”). Later, Huene (1942:164) gave more information about the material assembled under this binomen explaining that the mandible and some bones were collected in 1923 by Vicentino Prestes de Almeida (on whom the name “Prestosuchus” was based; Beltrão, 1965:20). In his trip to southern Brazil in 1928 (vide Huene, 1930), after some searching, he collected the remaining material. It came from the locality called “Sanga am Wege” or “Weg Sanga” (Huene & Stahlecker, 1931:40, 1968:35; Huene, 1942:161, 1990:171; “Sanga da Estrada” in Portuguese), at the locality of Chiniquá (29°40’1”S 54°22’1”W), Municipality of São Pedro do Sul.

Recently, Desojo et al. (2020:6–7) redescribed all the type-series of *Huenesuchus chiniquensis* and accepted their conspecificity like Huene (1938a, 1942) originally hypothesized. This approach should be accepted as a hypothesis to be tested in the future when better and more complete material comes to hand. The assumption of this hypothesis implies that both lectotype and paralectotype specimens are closely related, representing the same taxon, and all the remaining available specimens described elsewhere (Barberena, 1978; Azevedo, 1991, 1995; Kischlat, 2002, 2003; Mastrantonio, 2010; França, 2011; França et al., 2011, 2013; Lacerda, 2012; Mastrantonio et al., 2013, 2019; Raugust, 2014; Roberto-da-Silva et al., 2016, 2020; Lacerda et al., 2016; Roberto-da-Silva, 2017; Damke et al., 2022) should be compared to them, chiefly to the lectotype. In this way, the specimen from Sanga Pascoal (UFRGS-PV 156T; Barberena, 1978; Azevedo, 1991, 1995) was recognized as being another taxon (Kischlat, 2002, 2003). On the other hand, *Decuriasuchus* (França, 2011:50; França et al., 2011:391, 2013:474) was mainly compared to the specimen from Sanga Pascoal (UFRGS-PV 156T) that was then identified as *H. chiniquensis*.

The lectotype of *Huenesuchus chiniquensis* was individually scored in Parrish’s (1993), Nesbitt’s (2009, 2011), and França’s (2011) datasets. The paralectotype was individually scored in França (2011) and Desojo et al. (2020). The combined type-series (lectotype+paralectotype), as originally proposed by Huene (1938a), was scored in Desojo et al. (2020). And the lectotype and the Sanga Pascoal specimen (UFRGS-PV 156T) were combined and scored in the datasets of Benton & Walker (2002), Benton (2004), Nesbitt (2009, 2011), and Brusatte et al. (2010).

Benton’s (2004) dataset was later iterated by Li et al. (2006). Nesbitt’s (2011) dataset was later iterated by several authors (Butler et al., 2011, 2014, 2018, 2022; Nesbitt et al., 2011, 2013a, c, 2014, 2017, 2018a, b, 2020; Li et al., 2012, 2016; Langer & Ferigolo, 2013; Lecuona, 2013; Nesbitt & Butler, 2013; Sues & Schoch, 2013; Baczko et al., 2014, 2020; Raugust, 2014; Sookias et al., 2014a, b; Lautenschlager & Rauhut, 2015; Zanno et al., 2015; Cabreira et al., 2016; Lacerda et al., 2016, 2018; Lecuona et al., 2016; Lessner et al., 2016; Niedźwiedzi et al., 2016; Roberto-da-Silva et al., 2016, 2020; Nesbitt & Desojo, 2017; Roberto-da-Silva, 2017; Stocker et al., 2017; Müller et al., 2018; Sargüel et al., 2018; García et al., 2019, 2021; Barrett et al., 2020; Desojo et al., 2020; Kamberer et al., 2020; Marsh et al., 2020; Martin & Martin, 2021; DallaVecchia, 2021; Tolchard et al., 2021; Parker et al., 2021; Damke et al., 2022;) and many of them including modifications/corrections and inserting new taxa. With few exceptions (e.g., Li et al., 2012, 2016; Desojo et al., 2020) the combined score of the lectotype plus the Sanga Pascoal specimen (UFRGS-PV 156T) was the standard sequence used in their phylogenetic analyses for “*Prestosuchus chiniquensis*” terminal. This was also the case in Brusatte’s et al. (2010) dataset, with the combined lectotype plus UFRGS-PV 156T as the only available sequence and it was later iterated by several authors (Mastrantonio, 2010; Benton & Walker, 2011; Butler et al., 2011; França et al., 2011; Lacerda, 2012; Lautenschlager & Rauhut, 2015; Nesbitt et al., 2014) also with modifications/corrections and insertions of new taxa.

Finally the binomen “*Prestosuchus chiniquensis*” was used for scoring an assemblage of specimens not including the lectotype (i.e., the name-bearing specimen) by Ezcurra (2015:183, tab. 5.1; 2016:110, tab. 1), which was also later iterated by several authors (Ezcurra et al., 2017, 2019, 2020b, 2021a, b, c, d, 2022; Nesbitt et al., 2017, 2018b; Sengupta et al., 2017, 2022; Stoker et al., 2017; Ezcurra & Butler, 2018; Oliveira et al., 2018; Speikman, 2018; Butler et al., 2019; Pecock et al., 2019; Baczko et al., 2020; Barrett et al., 2020; Bennett, 2020; Foffa et al., 2020, 2022; Maidment et al., 2020; Müller et al., 2020; Scheyer et al., 2020; Sues et al., 2020, 2021; Troughton & Ezcurra, 2020; Wynd et al., 2020; DallaVecchia, 2021; Parker et al., 2021; Ezcurra & Sues, 2022; Kellner et al., 2022; Martinez et al., 2022; Müller & Garcia, 2022; Pretto et al., 2022; Sengupta & Bandyopadhyay, 2022; Simão-Oliveira et al., 2022; Chen & Liu, 2023). Therefore, these scorings don’t reflect, nor include the type-material and, as consequence, they are not representative of *H. chiniquensis*.

As noted above, Kischlat (2002, 2003) considered the Sanga Pascoal specimen (UFRGS-PV 156T) as a different taxon from *Huenesuchus chiniquensis* and the binomen *Karamuru vorax* Kischlat & Barberena in Kischlat, 2002 (cf. Code’s Recommendation 51E) was preliminarily proposed for this new taxon.

Two new nearly complete specimens were discovered after, the first in March 2003 (UFRGS-PV 629T; Mastrantonio et al., 2009) and the second in May 2010 (ULBRA-PVT 2810; Cabreira et al., 2011). For me, at each time of discovery, both specimens showed marked differences in mandibular morphology with that of the lectotype of *Huenesuchus chiniquensis*, and many similarities with the mandible of the Sanga Pascoal specimen (UFRGS-PV 156T). But, as the specimen from Sanga Pascoal was previously identified as “*Prestosuchus chiniquensis*” (Barberena, 1978; Azevedo, 1991, 1995), an obvious conclusion quickly came, and my previous hypothesis was then rejected by all involved. In the literature this rejection was mainly because of nomenclatural problems rather than the recognition of osteological differences to understand that it represents a new taxon (Mastrantonio, 2010:43; França, 2011:20; Lacerda, 2012:29; Raugust, 2014:1:72; Lacerda et al., 2016:3; Roberto-da-Silva, 2017:40; Roberto-da-Silva et al., 2020:993; Desojo et al., 2020:3). In short, these authors confused Nomenclature with Taxonomy and did not conclude what, to me, was obvious (i.e., the presence of two different taxa whatever the names available). Although the binomen “*Karamuru vorax*” (but see Abdala et al., 2009:84) is not available (cf. Arts. 16.1 & 16.4), its formal unavailability does not preclude the discovery/recognition of a new taxon, even if no name was formally proposed. Unfortunately, after 2003 I could not continue my studies on the subject and, with the discovery of these two new specimens (UFRGS-PV 629T and ULBRA-PVT 281), I waited for the conclusions of those involved. Now I feel quite comfortable going back and defending my earlier hypothesis.
Differences in jaw morphology between the lectotype and the new taxon called “Karamuru” are easier to observe using specimen UFRGS-PV 629T than with the others (UFRGS-PV 156T and ULBRA-PVT 281) because in these the mandibles are tightly adpressed to the skulls.

The actual length of the lectotype mandible is unknown because the caudal part is missing, but the preserved part has 49.0 cm (Desojo et al., 2020:11). Otherwise, the complete hemimandible of the specimen UFRGS-PV 629T has 47.19 cm in length (Mastrantonio, 2010:128). Thus, in linear dimensions, the lectotype has a larger mandible and it would represent a larger individual. For comparisons, both mandibles were normalized with the same dimension from the rostral tip of the symphysis to the caudal tip of the ventrocaudal process of the dental bone (Supplementary file 2). The actual dimension of the lectotype mandible is approximately 150% larger than that of UFRGS-PV 629T, so its apparent slenderness does not correspond to a juvenile condition of the lectotype. Thus, the relative height is shorter and the Ramus mandibulae is slenderer. There is a lesser curvature in the Margo oralis and the Eminentia rostralis is more developed under tooth III. The rostral teeth (II–IV) are relatively procumbent when compared to the highly recumbent ones in UFRGS-PV 629T.

These differences should be added to the most important one in the morphology of mandibular symphysis of the lectotype with both splenials dorsally reaching well rostrally the dental tooth I (Figure 1C) (cf. Huene, 1942:161, “Die Splenialia reichen bis an die vordere Spitze der Symphyse”, 1990:171) and, in ventral view, with the Sutura interspleniales reaching

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**Figure 1.** Mandible of the lectotype of *Huenesuchus chiniquensis* (SNSB-BSPG AS XXV 1). A, lateral view. B, dorsal view. C-D, detail of the symphysis in laterorostral and ventral view, respectively. All the pictures from the author except (D) which is modified from Desojo et al. (2020). Scale bars = 50 mm.
caudally well the level of the dental tooth V (Figure 1D), possibly reaching the dental tooth VI (cf. Desojo et al., 2020:17, fig. 5.1–2; cf. Raugust, 2014:44, fig. 21 ed). These differences are certainly connected to the mode of prey, and both were carnivorous archosaurs.

Concerning the morphology of an elongated mandibular symphysis of the lectotype, the ventral extension of the intersplenial suture draws attention to the condition found in *Mambawakale* (Butler et al., 2022:15, figs. 10–11), which shows, basically, the same morphology of the mandible of *H. chiniquensis*, with an elongated *Symphyses mandibula* extending up to dental tooth VIII with a clear and elongated *Sutura interspleniales* rostrally from, at least, tooth II to caudally reaching tooth VIII.

Concerning the *Scapula* (Figures 2A and 3A) of the lectotype, the *Acromion* is not developed, and there is a notch (*Incisura acromialis*) cutting the margin of the *Os coracoidale*, forming an uncination in this bone. In the new taxon, the *Acromion* is well developed and the *Incisura acromialis* is absent (the scapulocoracoid is only preserved in UFRGS-PV 629T and ULBRA-PVT 281; Figures 2B and 3B).

Desojo et al. (2020:35) also gave several characters found in the lectotype *Huenesuchus chiniquensis* (and scored in their dataset) that differentiate it from the specimen UFRGS-PV 629T: absence of *Crista supraacetabularis ilii* (G265.0); *Ischium* with an abrupt change in angle between the *Extremitas adacetabularis* and the *Scapus* (G296.1); *Femur* with the *Condylus medialis* (*Norma distalis*) tapering to a point on the medial portion (G320.0); and, *Fibula* with a fossa ("lunate fossa") distally on *Facies medialis* (G422.1). All these characters are not preserved in UFRGS-PV 156T, but only in UFRGS-PV 629T (G320 also in ULBRA-PVT 281) and they show a different condition (cf. Mastrantonio, 2010; Roberto-da-Silva et al., 2016; Roberto-da-Silva, 2017) from that found in the lectotype of *H. chiniquensis* (cf. Desojo et al., 2020).

On the other hand, the paralectotype shows the transition point between the double row of paramedian pair of osteoderms to only a double sagittal row on the first caudal vertebra (Figure 4). This condition is also found in *Decuriasuchus quartacolonia* (França, 2011:142, fig. 35A), *Postosuchus alisonae* (Peyer et al., 2008:373, fig. 6E), and, apparently, also in *Ticinosuchus ferox* (Krebs, 1965:114). Other taxa, such as *Saurosuchus galilei* (Sill, 1974:349, fig. 10) and *Fasolasuchus tenax* (Bonaparte, 1981:74, fig. 20) also show symmetric osteoderms supposed as from the tail, but they are not preserved articulated. The crocodylomorph *Dromicosuchus grallator* has a double row of paired paramedian osteoderms on the first two caudal vertebrae (Sues et al., 2003:330). The condition found in the specimen UFRGS 629T is that double symmetric sagittal osteoderms are found on both sacral vertebrae and the transition point is between the *Vertebra truncale ultima* (= *truncale XVII*, = *presacrale XXV*) and *Vertebra sacrale I* (Mastrantonio, 2010:159, figs. 84A and 87C; Raugust, 2014:2.84, fig. 41A).

The dataset of Desojo et al. (2020) is an iteration of that of Nesbitt (2019, 2011) plus more characters and taxa. The existence of intersplenial suture is not evaluated and their G160 only concerns its absence or presence rostrally (plesiomorphy) and presence relative to one-third of the lower jaw (apomorphy). This same wording was used by Ezcurra (2015:G251, 2016:G265) and later iterations. The presence

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**Figure 2.** Drawline showing the main differences in scapulocoracoids between the (A) lectotype of *Huenesuchus chiniquensis* (SNSB-BSPG AS XXV 12) and the (B) new taxon (UFRGS-PV 629T, reversed). **Abbreviations:** Cav. glen., glenoid cavity (*Cavitas glenoidale*); Inc. acrom., acromial notch (*Incisura acromialis*); Fae. artic. clav., articular surface for clavicle (*Facies articularis clavicularis*); Synd. coracoscap., coracoscapular syndesmosis (*Syndesmosis coracoscapularis*). [A, modified from Parrish (1993), B, modified from Mastrantonio (2010)]. Scale bars = 50 mm.
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Figure 3. Scapulocoracoids of several Brazilian Triassic specimens (left side) normalized with the approximately horizontal coracoscapular syndesmosis. A, lectotype of Huenesuchus chiniquensis (SNSB-BSPG AS XXV 12) comprising both claviculae, interclavicula, both coracoids, and left scapula (with incomplete dorsal Lamina). B, complete scapula and coracoid of the new taxon (UFRGS-PV 629T). C, holotype of Procerosuchus celer (SNSB-BSPG AS XXV 134) with the coracoid and the fragmentary scapula (only Corpus scapulae preserved). D, Baum Sanga specimen (CPEZ 239b, reversed as left) with the coracoid badly preserved attached with only part of the scapular body. [All the pictures from the author except B which is modified from Mastrantonio (2010)]. Scale bars = 50 mm.

of intersplenial suture in the condition of Huenesuchus (and Mambawakale) was only evaluated in two other expanded iterations of Nesbitt’s (2009, 2011) dataset (Lecuona, 2013:G413.1; Lecuona et al., 2016:G413.1), but the terminal “Prestosuchus chiniquensis” was coded as “?” Another dataset concerning only later crocodylomorphs (Leardi et al., 2017:G83.1) also uses this approach. Evaluating all these datasets (and there are differences in codings that should be investigated), the presence of intersplenial suture was coded for Euparkeria, belodonts, aetosaurs, ornithosuchians, Yonghesuchus as well in several crocodylomorphs.

Kischlat (2002:291, 2003:263) noted that the condition in UFRGS-PV 156T was different from the lectotype of Huenesuchus chiniquensis, but the full medial view of the symphysis was precluded for more accurate observations. Otherwise, the condition in UFRGS-PV 629T (Mastrantonio,
2010:135, fig. 72A; Mastrantonio et al., 2019:189, fig. 17) shows that there isn’t any clear *Facies articularis dentalis* (dental articular face for the other dental bone). So, the contact between both dental bones was not strong, and this suggests that the symphysis was formed by ligaments in a syndesmosis (*cf*. Holliday et al., 2010:1351; *cf*. Holliday & Nesbitt, 2013:556). The condition in ULBRA-PVT 281 is very similar with the dentals (= dentaries) only attached to each other in a probable syndesmotic symphysis (Roberto-da-Silva et al., 2016:983, fig. 5; Roberto-da-Silva, 2017:148, fig. 4).

In the classification of symphysis types, the specimen UFRGS-PV 156T was considered by Holliday & Nesbitt (2013:564, tab. 1) as from Class I, characterized by flat symphyseal plates, conspicuous smooth region, and equally high and deep joint. Otherwise, *Huenesuchus chiniquensis*, with an extensive symphysis, although formed largely by the splenials, appears to be near Class II symphysis, a condition also indicated for *Saurosuchus* (Alcober, 2000:315, fig. 10A; Holliday & Nesbitt, 2013:565, fig. 7c).

I noted previously (Kischlat, 2002:290) that the holotype of *Procerosuchus celer* (SNSB-BSPG AS XXV 131–139), could represent a juvenile of *Huenesuchus chiniquensis* (endorsed by Desojo & Rauhut, 2008:19; and Baczko et al., 2019:14). But I was wrong because there is no evidence that the holotype of *P. celer* could be an ontogenetic miniature of the lectotype of *H. chiniquensis*.


Three remarkable details are present in the holotype of *Procerosuchus celer*. As noted by Huene (1938a:148, 1942:220, 1990:230) the morphology of the humerus shaft is exceptionally thin, resembling the condition of the additional material recently described (Lacerda, 2012:98, f. 53; Lacerda et al., 2016:30, fig. 19) as *Huenesuchus chiniquensis*. This latter specimen (now CPEZ 239b) I personally partially collected in 1994 (but I didn’t find it) in the Baum Sanga locality (Huene & Stahlecker, 1931:39, 1968:35; Beltrão,
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1968:86), mixed with the holotype of Archaeopelta arborensis Desojo et al., 2011. This is the same locality where the dicynodont Stahleckeria potens and the aphanosaur Spondylosoma absconditum were found (Huene, 1933a:129, 1933b:129; 1935:1, 1942:326; 1990:11, 342).

The condition of the humerus in the lectotype of Huenesuchus chiniquensis could not be fully observed because the shaft is not preserved, but it is suggestive of being relatively thin (pers. obs.; Raugust, 2014:104, fig. 52D–E; Desojo et al., 2020:27, fig. 10.4–6).

The second detail is the presence of a notable Incisura acromialis with also a uncinated margin of the coracoid at the joint between coracoid and scapula (Huene, 1942:219, 1990:230, pl. 29.1), which is also found in the lectotype of Huenesuchus chiniquensis (pers. obs.; Huene, 1942:171, pl. 21.1, 1990:182; Raugust, 2014:99, fig. 49, “ent”; Desojo et al., 2020:23, fig. 9, “oi”), but in Procerosuchus celer the acromion is well developed (i.e., both margins of scapula and coracoid have similar cranial limits; Figure 3C). An Incisura acromialis could be potentially present, although the uncination is not clearly preserved, in the additional material (Huenesuchus chiniquensis, probably SNSB-BSPG AS XXV 4/25/42) of “Prestosuchus” loricatus; (5) exclusion of the individual sequences of Pseudolagosuchus major and Lewisuchus admixtus, but using their combined sequence, reflecting a new hypodigm comprising both binomina (Ezcurra et al., 2020a; Agnolín et al., 2021); (6) substitution of the sequence of Rauisuchus tiradentes in the characters 1–412 by the updated sequence given by Lautenschlager & Rauhut (2015), but changing the G75(3→2); (7) substitution of the sequence of Parringtonia gracilis in the characters 1–412 by the updated sequence given by Nesbitt et al. (2018a); (8) inclusion of the sequence of Teratosaurus suevicus given by Lessner et al. (2016) completing characters 413–422 with “?”; and, the most important, (9) the combined sequence of both the lectotype and paralectotype of Huenesuchus chiniquensis, given by Desojo et al. (2020:47), fails in the scores for G412(?→0), G416(=?→1), G417(?→?1), G418(?→1), G419(?→1), G420(?→0), G421(?→?1) and G422(?→?), but all were scored in the lectotype. Except for these modifications, I did not modify/correct any other score. This will be done in an upcoming paper dealing with the proposition of the new taxon using UFRGS-PV 156T as the name-bearing specimen (cf. Kischlat, 2002, 2003).

Mesosuchus browni and Proacerta broomi were used as outgroups, as originally proposed by Nesbitt (2009:403, 2011:185). Instead, he did not implement this composite outgroup because he used the software TNT 1.0 (Goloboff et al., 2003, 2008) for his phylogenetic analyses. So far as I know, TNT software does not work with a composite outgroup like PAUP 4.0, but this is possible as recently shown (Goloboff, 2022:154).

The matrix with 91 taxa (two as outgroup) was analyzed under equally weighted parsimony using P.A.U.P. 4.0β10 (Swofford, 2002) and 4.0a (Swofford & Bell, 2017) and the results were the same. I used a heuristic search and 100 replicates, using a batch procedure (see Appendix 2). This resulted in 79,380 maximum parsimony trees (MPTs). When multistate taxa are interpreted as a variable (polymorphisms and uncertainty, see Swofford & Bell, 2017:105 for differences), the length has 1,476 steps (CI = 0.348; RI = 0.754); when interpreted as all uncertainties the length has 1,456 steps (CI = 0.339; RI = 0.754). The strict consensus tree has a good resolution with a polytomy only at basal Avemetatarsalia and Crocodylomorpha+Teratosauria clades (Figure 5). The majority rule tree (50%) shows these clades with a better resolution inside (see Supplementary file 3). Such results are not different from the results achieved by Nesbitt (2009, 2011) and the later iterations.

The result shows the original hypodigm of Huenesuchus chiniquensis nested with Stagonosuchus myassicus, and, higher in the next clade, the specimen UFRGS-PV 156T nested with Luperosuchus fractus and Saurosuchus galilei.

PRELIMINARY PHYLOGENETIC ANALYSIS

Kischlat (2002, 2003) hypothesized that the Sanga Pascual specimen (UFRGS-PV 156T) was taxonomically different from Huenesuchus chiniquensis. To preliminary test the interrelationships of H. chiniquensis and this possible new taxon, I used Desojo’s et al. (2020) modified dataset. This one was initially taken from Nesbitt (2011), modified by Butler et al. (2014), and later by Nesbitt & Desojo (2017). As Desojo et al. (2020) did not indicate which characters are ordered, I followed Nesbitt & Desojo (2017) ordering characters 32, 52, 121, 137, 139, 156, 168, 188, 223, 247, 258, 269, 271, 291, 297, 328, 356, 399, and 413, with the following modifications: (1) exclusion of the lectotype and paralectotype of Huenesuchus chiniquensis, but using Huene’s (1938a) original hypodigm, expressly endorsed by the authors, and using the combined sequence; (2) exclusion of Vale Verde specimen (UFRGS-PV 152T); (3) exclusion the Baum Sanga specimen (CPEZ 239b); (4) exclusion of the “paralelotype” (sic!, probably SNSB-BSPG AS XXV 4/25/42) of “Prestosuchus” loricatus; (5) exclusion of the individual sequences of Pseudolagosuchus major and Lewisuchus admixtus, but using their combined sequence, reflecting a new hypodigm comprising both binomina (Ezcurra et al., 2020a; Agnolín et al., 2021); (6) substitution of the sequence of Rauisuchus tiradentes in the characters 1–412 by the updated sequence given by Lautenschlager & Rauhut (2015), but changing the G75(3→2); (7) substitution of the sequence of Parringtonia gracilis in the characters 1–412 by the updated sequence given by Nesbitt et al. (2018a); (8) inclusion of the sequence of Teratosaurus suevicus given by Lessner et al. (2016) completing characters 413–422 with “?”; and, the most important, (9) the combined sequence of both the lectotype and paralectotype of Huenesuchus chiniquensis, given by Desojo et al. (2020:47), fails in the scores for G412(?→0), G416(=?→1), G417(?→?1), G418(?→1), G419(?→1), G420(?→0), G421(?→?1) and G422(?→?), but all were scored in the lectotype. Except for these modifications, I did not modify/correct any other score. This will be done in an upcoming paper dealing with the proposition of the new taxon using UFRGS-PV 156T as the name-bearing specimen (cf. Kischlat, 2002, 2003).
Figure 5. Phylogenetic relationships of *Huenesuchus chiniquensis* and the new taxon (Sanga Pascoal specimen, UFRGS-PV 156T) among loricatosuchians archosaurs. Strict consensus tree (some taxa collapsed into larger clades) based on the analysis of Desejo *et al.* (2020) with the modifications explained in the text. The use and definitions of class-group names are also explained in the text. Tree constructed using TreeGraph 2 (Stöver & Müller, 2010).
This preliminary result shows that the specimen UFRGS-PV 156T is a different taxon from Huenesuchus chiniquensis contradicting the opinion of many researchers and supporting my previous hypothesis (Kischlat, 2002, 2003). Huenesuchus chiniquensis is related to Stagonosuchus nyassicus, a result virtually achieved by Desojo et al. (2020). But UFRGS-PV 156T is closer to Luperosuchus fractus and Saurosuchus galilei, as well as all the remaining teratosaurians and crocodylomorphs.

**FINAL REMARKS**

Unfortunately, the universally used nominal genus Prestosuchus Huene, 1938a (nomen nudum), is not available in the light of the Code. As such, the specific name chiniquensis, part of the original Huene’s (1938a, 1942) binomen “Prestosuchus” chiniquensis, turned out to be an orphan. This awkward nomenclatural situation was fixed here.

Huenesuchus chiniquensis was a taxon that reached a large size with a mandible exceeding 50 cm and with a huge femur measuring nearly 45 centimeters. “Prestosuchus” chiniquensis has been used as the iconic taxon representative for Brazilian Triassic, but the specimen usually figured (UFRGS-PV 156T) is not Huenesuchus chiniquensis but represents a new taxon, as noted before (Kischlat, 2002, 2003).

Past errors in the literature were corrected here and I hope that this present contribution can provide a new nomenclatural and taxonomic understanding of the hypercarnivorous crocodylotarsans archosaurs of the Triassic fauna of Rio Grande do Sul (Brazil). The choice of honoring Friedrich von Huene, and his seminal work, introducing the new nominal genus Huenesuchus, should be considered as a tribute that I could not avoid doing, literally calling this already long-known taxon paranomastically as “Huene’s suchus from Chiniquá”.

**ACKNOWLEDGEMENTS**

I am especially grateful to my former advisor (deceased), Dr. Mario C. Barberena, who from our first conversation in 1994 alerted me about the nomenclatural problems of Prestosuchus and the large skull described by him in 1978 (“I stuck it in Prestosuchus, but it’s not Prestosuchus!”). I wish to thank many colleagues that helped me on my trip to Germany (land of my grandfather Ernst-Wilhelm Kischlat) in late 1997: D.J. Gower (British Museum, Natural History, London), E.S. Gafney (American Museum of Natural History, New York), M.W. Maisch (Institut und Museum für Geologie und Paläontologie, Eberhard-Karls-Universität, Tübingen), P. Wellnhofer (Bayerische Staatsammlung für Paläontologie und Geologie, München), R. Wild and R. Schoch (Staatliches Museum für Naturkunde, Stuttgart). Several papers were downloaded from the Wikipedia community and R. Guzman-Gutierrez (Universidad Humanista de las Américas, Monterrey, Mexico) helped me many times. B.L. Horn (project manager here in Serviço Geológico do Brasil, Porto Alegre) and the anonymous reviewers that improved my text, as well the always kind A.M. Ribeiro (Museu de Ciências Naturais, Porto Alegre). A special thanks to F.D. Ross, who helped me on numerous occasions in the first decade of the 2000s, when I had a really troubled time. He gave me the strength to get here. Thank you all.

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Appendix 1. Nomenclatural remarks on binomina and some class-group names.

Binomina used as terminals in the phylogenetic analysis.

Proterosuchus fergusi used by Nesbitt (2009:21, 2011:17) includes three type-specimens which now comprise three (Proterosuchus fergusi, P. alexanderi, and P. goweri) different taxa (Ezcurra & Butler, 2015). So, here it was renamed as Proterosuchus spp.

Lagosuchus talampayensis Romer, 1971, and Marasuchus lilloensis (Romer, 1972b) are now considered as representing the same taxon (Agnolin & Ezcurra, 2019), which the former binomen has a preference (cf. Art. 23.1).

Lewisuchus admixtus Romer, 1972a, and Pseudolagosuchus major Arcucci, 1987, were suspected as representing the same taxon (Arcucci, 1997, 1998, 2005), and this hypothesis gained support. Today they are now considered (Ezcurra et al., 2020a; Agnolin et al., 2021) as representing the same taxon, which the former binomen has a preference (cf. Art. 23.1).

Nesbitt (2009:95, 2011:54) noted that the type-material of Plateosaurus engelhardtii Meyer, 1837, is not diagnostic and indicated the specimens from Trossingen (SMNS 13200 and AMNH FR 6810) as the source of his codings. A recent decision of I.C.Z.N. (2019) designated Plateosaurus troossingensis Fraas, 1913, as the type-species of the nominal genus Plateosaurus Meyer, 1837. As SMNS 13200 is the holotype of Plateosaurus troossingensis Fraas, 1913 (Galton, 2012:205) and AMNH FR 6810 was referred to this species (Fernández & Werneburg, 2022:775, although improperly calling it as “sylotype”), the valid name for the taxon is Plateosaurus troossingensis Fraas, 1913.

Ornithosuchus woodwardi Newton, 1893, was resurrected by Baczko & Ezcurra (2016:203) from its junior synonym with Dasygnathus (= Dasygnathoides Kuhn, 1961b:79) longidens Huxley, 1877. As noted by Baczko & Ezcurra (2016:204), Nesbitt’s (2009, 2011) scorings were based on the type-material of Ornithosuchus woodwardi.

The nominal genus Lagerpeton Romer, 1971, came from ἕρπετον (herpeton, reptile; Bailly, 2020:1011) which has neuter gender. In gender agreement (Arts. 31.2, 34.2, & 50.3.2) the correct spelling will be Lagerpeton chanarense (not “chanarensis”, as originally in Romer, 1971:1).

The original binomina Baroquosuchus haughtoni Busbey & Gow, 1984, and Stagonosuchus nyassicus Huene, 1938b, were used instead of Proutosuchus haughtoni and “Prestosuchus” nyassicus. A genus, as a taxon per se, is only a mental construction (Hennig, 1966:78) and not a natural entity, and two paleospecies sharing the same genus is a subjective convenience, based on the shared morphology and an alleged some kind of stratigraphic correlation/continuation. A genus name is only part of a Latin binomen, which is a tradition in Nomenclature (I.C.Z.N., 1999).

Class-group names used in Figure 5.

Every nominal genus has type-species, there is no need to repeat the species name. Any phylogenetic definition could be simplified with this in mind.

In the past, the genus-name Crocodilus Cuvier, 1807 (type-species C. vulgaris Cuvier, 1807, cf. Fitzinger, 1843:35), was widely used instead of Crocodylus Laurenti, 1768 (type-species C. niloticus Laurenti, 1768; cf. Hay, 1902:512), which has the preference, and this is implicit in the usage of the class-group names Crocodylia Owen, 1842, and Crocodylia Loveridge, 1946. But in the following definitions, I preserved the original nomenclatural context of usage of Crocodylus Cuvier, 1807, as a specifier, in analogy to Art. 67.1.2 (Recommendation 67B).

“Passer domesticus Linnaeus, 1758” has been used as a reference taxon in phylogenetic definitions (e.g., Nesbitt, 2011:191; Ezcurra, 2016:293). Actually, Linnaeus (1758:183) introduced Fringilla domestica, and Brisson (1760:72) transferred the species name to the nominal genus Passer Brisson, 1760, which has Fringilla domestica Linnaeus, 1758, as the type-species (cf. Amadon et al., 1962:8). According to Art. 51.3 this binomen should be written as Passer domesticus (Linnaeus, 1758), but this can be abbreviated as only Passer Brisson, 1760, in phylogenetic definitions without losing the information. On the other hand, the first avian nominal genus introduced by Linnaeus (1758:86) is Vultur, which the type-species is V. gryphus Linnaeus, 1758 (cf. Peters, 1931:189).


Archosauriformes Gauthier et al., 1988, was defined with Crocodilus Cuvier, 1807, as a specifier because I assume the coordination with Archosauromorpha Cope, 1870.

Europodopoda Ezcurra, 2016, should be a subset of Crocrodopoda Ezcurra, 2016, which means “crocodile-foot” (Ezcurra, 2016:385). Europodpods are the “noble crocopods” (Gr. εὖ, eu: noble, well; Bailly, 2020:1208). If anyone owns a typical crocodile-foot, this certainly is Crocodylus. So, both names are coordinated with each other and should have Crocodylus Laurenti, 1768, as a primary specifier in their definitions. Although Ezcurra (2016:293) used Crocodylus Laurenti, 1768, in the definition of his Europodopoda, this was not the case in the definition of Crocrodopoda (p. 284).
I used *Vultur* Linnaeus, 1758, instead of *Passer* Brisson, 1760, in Ornithodira Gauthier, 1986 (Nesbitt, 2011:206) and corrected my previous mistake (Kischlat, 2002:278) in using the fake eponym *Pterosaurus* Fitzinger, 1843, a squamate agamidae (= *Draco* Linnaeus, 1758), as a pterosaurian name.

Benton & Clark (1988:315, fig. 8.1) when converting Crocodylomorpha Walker, 1970, to a clade name, did not include *Postosuchus* Chatterjee, 1985, but Nesbitt’s (2011:203) stem definition and phylogenetic context included it. Thus, I prefer my previous sense excluding *Postosuchus* (Kischlat, 2002:277).

In Nesbitt’s (2009, 2011) matrix and later derivative iterations, Rauisuchia is always paraphyletic. A monophyletic Rauisuchia was only recovered in Brusatte et al. (2010) and later derivative iterations (see Tolchard et al., 2019). In the present phylogenetic hypothesis (Figure 4), which is very similar to that original in Nesbitt (2009, 2011) and in all derivative iterations, this definition results in a paraphyletic assemblage. On the other hand, there are several older class-group names available to be used instead of Rauisuchia Bonaparte, 1975, which is the youngest of all of them. Although Rauisuchia has potential redundancy with the older Teratosauria (see next), it might have some utility if applied in a broad, informal sense (“rauisuchians”).

Teratosauria Colbert, 1970, can be applied to *Teratosaurus* Meyer, 1861, and its kins (*Rausuchus* Huene, 1838a, and *Postosuchus* Chatterjee, 1985), defined as the stem comprising all taxa more related to *Teratosaurus* Meyer, 1861, than to *Crocodilus* Cuvier, 1807.

Poposaura Nopcsa, 1923, can well be applied and defined as the stem comprising all taxa more related to *Poposaurus* Mehl, 1915, than to *Crocodilus* Cuvier, 1807. Of course, the usage of class-group names instead of family-group names (e.g., Poposauroidae Nopcsa, 1928) is a personal choice (see Nesbitt et al., 2013b:244).

Belodontia Brauns, 1890, discussed in Kischlat (2022a), should be used instead of Parasuchia Huxley, 1875, and Phytosauria Baur, 1894. It was defined as a stem including *Belodon* Meyer, 1842, in the exclusion of *Crocodylus* Laurenti, 1768. Now I correct this definition using *Crocodilus* Cuvier, 1807.

Aetosauria Marsh, 1884, was defined (simplified herein) by Nesbitt (2011:196) as a stem including *Aetosaurus* Fraas, 1877, in the exclusion of *Revueltosaurus* Hunt, 1989, and *Crocodilus* Cuvier, 1807.

Erpetosuchia was introduced by Walker (1968:13) to accommodate *Erpetosuchus* Newton, 1893, and *Dyoplax* Fraas, 1867, and this class-group name could be well defined as a stem including *Erpetosuchus* Newton, 1893, in the exclusion of *Aetosaurus* Fraas, 1877, and *Crocodilus* Cuvier, 1807.

Gauthier & Padian (1985:189) noted the “corruption” of the original sense of the class-group name Pseudosuchia Zittel, 1890 (cf. Woodward, 1891, for publication year), and defined it as a stem comprising “the crocodiles and all archosaurs closer to crocodiles than to birds”. Later, Benton & Clark (1988:307) proposed Crocodylotosauri to receive this definition. It is not a substitutive name for Pseudosuchia Zittel, 1890, as considered by Brochu (1997:448), but a new name to receive Gauthier & Padian’s (1985) stem definition in the corrupted sense.

Pseudosuchia was introduced by Zittel (1890:644) including two aetosaurians (*Aetosaurus* Fraas, 1877; and *Typothorax* Cope, 1875) and *Dyoplax* Fraas, 1867, which has been considered as related to *Erpetosuchus* (Huene, 1920:484; Walker, 1961:183, 1968:13; Maisch et al., 2013:360). Recently this kinship was positively tested (Ezcurra et al., 2017:1480, fig. 3). Thus, the original Zittel’s (1890) sense, Pseudosuchia can be now recovered with Aetosaurus and Erpetosuchus as sister clades. Thus, I propose to use Pseudosuchia Zittel, 1890, in the original sense, tied to a phylogenetic hypothesis comprising the lineage of aetosaurians and erpetosuchians in the exclusion of the lineage towards crocodiles (“the Pseudosuchian Hypothesis”). I define this clade as a stem comprising *Aetosaurus* Fraas, 1877, and *Dyoplax* Fraas, 1867, in the exclusion of *Crocodilus* Cuvier, 1807. This definition also recovers the etymology of Pseudosuchia (Gr. ψευδής, *pseudēs*: false; Bailly, 2020:2573) which means false suchians, which should not include the true suchians (e.g., *Crocodilus* Cuvier, 1807).

Suchia Krebs, 1974, was defined as a node by Nesbitt (2011:195). As it is previously occupied by Suchia Simpson, 1937, I propose Holosuchia (Gr. ὅλος, *hólos*: whole, entire, complete; Bailly, 2020:1661; “all the suchians”) as a substitute name (Art. 1.2.2).

Loricata Merrem, 1820, was defined as a stem by Nesbitt (2011:200). As it is previously occupied by Loricata Schumacher, 1817, I propose Loricatosuchia as a substitute name (Art. 1.2.2).

**Definition synopsis.**

Aetosauria Marsh, 1884:69. Stem, the most inclusive clade containing *Aetosaurus* Fraas, 1877, but not *Revueltosaurus* Hunt, 1989 [nor Rutiodon Emmons, 1856; nor *Gracilisuchus*
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Aphanosauria Nesbitt et al., 2017:485. Stem, the most inclusive clade containing Teleocrater Nesbitt et al., 2017 [and Yarasuchus Sen, 2005], but not *Passer* Brisson, 1760, nor *Crocodylus* Laurenti, 1768 (simplified from Nesbitt et al., 2018b:143).


Belodontia Brauns, 1890:202. Stem, the most inclusive clade containing Belodon Meyer, 1842, but not *Aetosaurus* Fraas, 1877, nor *Crocodilus* Cuvier, 1807 (corrected from Kischlat, 2002:283).


Erpetosuchia Walker, 1968:13. Stem, the most inclusive clade containing Erpetosuchus Newton, 1893; but not *Aetosaurus* Fraas, 1877, nor *Crocodilus* Cuvier, 1807 (herein).

Erythrosuchia Watson, 1957:379. Stem, the most inclusive clade containing Erythrosuchus Broom, 1905; but not *Crocodilus* Cuvier, 1807 (corrected from Kischlat, 2002:279).

Etocrocopoda Ezcurra, 2016:293. Stem, the most inclusive clade containing Crocodylus Laurenti, 1768; but not *Proterosuchus* Broom, 1903, nor *Erythrosuchus* Broom, 1905 (simplified from Ezcurra, 2016:293).


Huenesuchia (new class-group name). Stem, the most inclusive clade containing Huenesuchus, gen. nov., but not *Crocodylus* Laurenti, 1768 (herein).


Ornithosuchia Huene, 1908:395. Stem, the most inclusive clade containing *Ornithosuchus* Newton, 1893; but not *Crocodilus* Cuvier, 1807 (corrected from Kischlat, 2002:285).

Poposauria Nopcsa, 1923:126. Stem, the most inclusive clade containing *Poposaurus* Mehl, 1915; but not *Crocodilus* Cuvier, 1807 (herein).

Proterochampsia Bonaparte, 1971:420. Stem, the most inclusive clade containing Proterochampsia Reig, 1958, but not *Crocodilus* Cuvier, 1807 (corrected from Kischlat, 2002:279).

Proterosuchia Broom, 1906:600. Stem, the most inclusive clade containing *Proterosuchus* Broom, 1903, but not *Crocodilus* Cuvier, 1807 (corrected from Kischlat, 2002:278).

Pseudosuchia Zittel, 1890:644. Stem, the most inclusive clade containing Aetosaurus Fraas, 1877, and Dyoplax Fraas, 1867; but not *Crocodilus* Cuvier, 1807 (herein, the “Pseudosuchian Hypothesis”).


Teratosauria Colbert, 1970:26. Stem, the most inclusive clade containing Teratosaurus Meyer, 1861; but not *Crocodilus* Cuvier, 1807 (herein).
Appendix 2. The following batch was introduced in Kischlat (2022b) and it is slightly modified here. It is inserted in the PAUP BLOCK of the nexus file for the phylogenetic analysis. The “K:\Matrix\Output\” string must be changed accordingly to each user’s path (see Swofford, 2002:9).

BEGIN PAUP;
log /replace=yes file=K:\Matrix\Output\HuenesuchusMatrix.paup.log;
log start;
set autoclose=yes;
set outroot=monophyl;
set taxlabels=full;
set InitSeeds=1;
set increase=auto [no];
set mstaxa=variable;
assume ancstates=standard;
outgroup 1-2 /only;
constraints ANCESTOR=((1,2));
}
hsearch enforce=yes nchuck=1 chuckscore=1477 addseq=random nreps=100 swap=tbr;
 savetrees /replace=yes file=K:\Matrix\Output\HuenesuchusMatrix.paup.trees;
 gettrees /mode=3 warntree=no storeBrlens=no file=K:\Matrix\Output\HuenesuchusMatrix.paup.trees;
 pscores 1 /TL CI RI RC HI;
 set mstaxa=uncertain;
 pscores 1 /TL CI RI RC HI;
 set mstaxa=variable;
 showmatrix;
 contree /replace=yes majrule=yes treefile=K:\Matrix\Output\HuenesuchusMatrix.paup.tre;
 gettrees /mode=3 warntree=no file=K:\Matrix\Output\HuenesuchusMatrix.paup.tre;
 descriptrees 1 /apolist=yes opt=acctran;
 descriptrees 1 /apolist=yes opt=deltran;
log stop;
ENDBLOCK;

SUPPLEMENTARY FILES

Supplementary file 1.
SNSB-BSPG Catalog.pdf

Supplementary file 2.
Comparisons between the mandibles (left side, lateral view) of the new taxon, represented by the specimen UFRGS-PV 0169T (above, from Mastrantonio et al., 2019), and the lectotype of Huenesuchus chiniquensis SNSB-BSPG AS XXV 1 (below, from Desojo et al., 2020). Both mandibles normalized to the same dimension, from the rostral symphyseal tip to the caudal tip of the ventrocaudal process of the dental bone. Abbreviations: an, Os angularis; d, Os dentalis; dIII, dVII, dXI, dental teeth 3, 7 and 11; fo, foramen; pvc den, Processus ventrocaudalis dentalis; sa, Os supraangularis. Scale bar equals 5 cm.

Supplementary file 3.
Dataset.rar
Nexus input data file: HuenesuchusMatrix.paup.nex
Output text file: HuenesuchusMatrix.paup.log
Annotated pdf from the above: HuenesuchusMatrix.paup.log.pdf
Output strict consensus plus majority rule trees: HuenesuchusMatrix.paup.tre