

TREASURY DEPARTMENT
UNITED STATES PUBLIC HEALTH SERVICE

HYGIENIC LABORATORY BULLETIN No. 145

MARCH, 1927

THE NOMENCLATURE
FOR MAN, THE CHIMPANZEE, THE
ORANG-UTAN, AND THE
BARBARY APE

BY

CH. WARDELL STILES and MABELLE B. ORLEMAN



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON

1927

ADDITIONAL COPIES
OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
20 CENTS PER COPY

ORGANIZATION OF HYGIENIC LABORATORY

HUGH S. CUMMING, Surgeon General,
United States Public Health Service

ADVISORY BOARD

Col. J. F. Siler, United States Army; Lieut. Commander J. R. Phelps, United States Navy; Dr. John R. Mohler, Chief, United States Bureau of Animal Industry; and Surg. George W. McCoy, United States Public Health Service, *ex officio*.

Prof. William H. Welch, Johns Hopkins University, Baltimore; Prof. Simon Flexner, Rockefeller Institute for Medical Research, New York; Prof. Victor C. Vaughan, American Medical Association, Chicago; Prof. Reid Hunt, Harvard University, Boston; Prof. M. P. Ravenel, University of Missouri, Columbia, Mo.

LABORATORY CORPS

Director.—Surg. George W. McCoy.
Assistant director.—Surg. R. E. Dyer.
Executive assistant.—E. K. Foltz.
Chief pharmacist.—W. G. Beucler, Ph. G.
Artist.—Inez M. Demonet.
Librarian.—Carrie Myers.

DIVISION OF PATHOLOGY AND BACTERIOLOGY

In charge of division.—Surg. George W. McCoy.
Chief, section of nutritional diseases.—Surg. Joseph Goldberger.
Chief, section of infectious diseases.—
Chief, section of pathology.—Surg. G. C. Lake.
Assistants.—Surgs. Edward Francis, Norman Roberts, Lawrence Kolb, R. R. Spencer, R. E. Dyer, W. T. Harrison, Charles Armstrong, Passed Asst. Surgs. R. D. Lillie, K. F. Maxcy, L. M. Rogers.
Pathologist.—William Charles White, M. D.
Associate bacteriologists.—Ida A. Bengtson, Ph. D., Alice C. Evans, M. S.
Assistant pharmacologist.—Thomas F. Probey, B. S.

DIVISION OF ZOOLOGY

Chief of division.—Ch. Wardell Stiles, Ph. D.
Laboratory aids.—Gordon Thomson, A. B., Mabelle B. Orleman, A. B., Clara E. Baker, A. B., Lucy Reardon, M. A.

DIVISION OF PHARMACOLOGY

Chief of division.—Carl Voegtlin, Ph. D.
Senior pharmacologist.—M. I. Smith, M. D.
Assistant pharmacologist.—W. T. McClosky, A. B.
Chemist.—James M. Johnson, Ph. D.
Assistant chemist.—John W. Thompson, M. S.

IV

DIVISION OF CHEMISTRY

Chief of division.—William Mansfield Clark, Ph. D.

Senior chemist.—Harry D. Gibbs, Ph. D.

Chemists.—Elias Elvove, Phar. D., Ph. D., Barnett Cohen, Ph. D.

Associate chemist.—Max Phillips, Ph. D.

Assistant chemists.—Charles G. Remsburg, M. S., Alice T. Merrill, Ph. D., Wallace L. Hall, A. B.

Biochemist.—M. X. Sullivan, Ph. D.

SPECIAL DETAIL

Special experts.—Julius Stieglitz, Ph. D., Russell L. Cecil, M. D., John N. Force, Gr. P. H., M. D., Frederick P. Gay, M. D., James Denton, M. D. Atherton Seidell, Ph. D.

Consulting dermatologist.—Henry H. Hazen, M. D.

Consulting pathologist.—Ludvig Hektoen, M. D.

Assistant bacteriologist.—Dorothy Rhoades, B. S.

CONTENTS

	Page
Summary.....	1
Abbreviations.....	2
Historical data.....	3
A. Names published prior to 1758.....	3
Gesner 1551; Tulpus 1641; Aldrovandus 1645; Tyson 1699 (1751); Bontius 1718; Linnaeus 1748a.	
B. Names published in 1758.....	7
Linnaeus 1758a; Edwards 1758.	
C. Names published after 1758.....	11
Hoppius 1760; Houttuyn 1761; Lecat 1765; Linnaeus 1766a; Buffon 1766; Visme 1770; Mueller 1773; Schreber 1775, etc.; Erxleben 1777; Blumenbach 1779; Forster 1781; Boddaert 1784; Gmelin 1788a; Buffon 1789; Kerr 1792a; Geoffroy & Cuvier 1795; Cuvier 1798; Lacépède 1799 (1803); Audebert 1799; Bechstein 1799; Cuvier 1800; Turton 1802; Desmarest 1804; Duméril 1806; Tiedemann 1808; Illiger 1811; Geoffroy 1812; Buffon 1812; Fischer 1813; Oken 1816; Goldfuss 1820; Leach 1820; Desmarest 1820; Cuvier 1825; Schreber 1826; Lesson 1827; Griffith 1827; Billberg 1828; Brookes 1828; Burnett 1828; Geoffroy 1829; Cuvier 1829a; Voigt 1831; Krueger 1832; Rafinesque 1832; Jardine 1833; Donovan 1834; Geoffroy 1834; Milne-Edwards 1834; Owen 1836; Blainville 1838 (1839); Sénéchal 1839; Wagner 1840; Lesson 1840; Gloger 1842; Lesson 1842; Gray 1843; Schinz 1844; Reichenbach 1847; Jardine 1848; Carpenter 1851; Haime 1852; Buffon 1854; Mayer 1856; Reichenbach 1863; Haeckel 1866; Cope 1868; Gray 1870; Salisbury 1873; Cope 1879; Trouessart 1879c; Leunis 1883a; Claus 1885a; Flower & Lydekker 1891a; Forbes 1894; Thomas 1894; Selenka 1896; Trouessart 1897c; Selenka 1898; Sherborn 1902a; Palmer 1904a; Matschie 1904; Rothschild 1904; Lydekker 1911; Thomas 1911; Elliot 1913; Matschie 1913; 1914; Allen 1916; Thomas 1916; Allen 1925; International Commission 1925.	
Vernacular names.....	43
Chimpanzee; <i>Homo silvestris</i> ; <i>Homo sylvestris</i> ; Jocko; Orang; Orang-utan; Pongo; Pygmaeus; Pygmy; Satyrus.	
The confused generic names <i>Simia</i> and <i>Pithecus</i>	45
The generic name <i>Simia</i> Linn., 1758.....	45
Type designations.....	46
The generic name <i>Pithecus</i>	49
Summary of generic and specific names for—	
Man.....	50
Chimpanzee.....	51
Orang-utan.....	54
Barbary ape.....	56
Conclusions.....	59

VI

	Page
General analysis of causes of confusion	59
Causes of present confusion	59
How could the present confusion have been prevented?	60
What can be done under present circumstances. A proposition to suspend the rules	61
How can similar confusion be inhibited in the future? A plan to teach nomenclature to students	63

THE NOMENCLATURE FOR MAN, THE CHIMPANZEE, THE ORANG-UTAN, AND THE BARBARY APE*

By CH. WARDELL STILES, *Professor of Zoology*, and MABELLE B. ORLEMAN, *Laboratory Aide, Hygienic Laboratory, U. S. Public Health Service, Washington, D. C.*

SUMMARY

The nomenclature for Man, the African Chimpanzees, the Malayan Orang-utans, the Barbary Ape, and the Macaques is in an extremely confused status, not only in general literature but also (except for *Homo sapiens*) in that of systematic mammalogy, medical zoology, bacteriology, and public health. Specialists in mammalogy have referred the complications to the International Commission on Zoological Nomenclature for special action under "Suspension of the Rules," but the data submitted were not complete. The present article reviews the subject from 1551 to date; and the conclusion is reached that the premises present not only a very confused condition in systematic zoology but also one which potentially involves the possible loss of human life—because of the danger of erroneous application of experimental data in bacteriological and serological literature.

Under our interpretation of the International Rules (a) the correct specific name of the chimpanzee is *satyrus* Linn., 1758; (b) under one interpretation *Simia* 1758 is the correct generic name for the chimpanzee, while *Macaca* 1799 is the generic name for the Barbary ape, and *Silenus* 1820 for the macaques (not including the Barbary ape); (c) under another interpretation, *Simia* 1758 should be used for the Barbary ape, while the chimpanzee should be known either as *Theranthropus* 1828 (a sale catalogue name) or as *Chimpansee* 1831; (d) *Pongo pygmaeus* 1760 is the correct name for the Malayan orang-utan now usually known as *Simia satyrus*.

Obviously, the case should be reopened by the International Commission to decide between (b) and (c) at least.

The confusion of *Simia*, *Simia satyrus*, and *Pithecus* is so extreme in systematic zoology and in medical publications that we despair of any outlook to make their use uniform; and we are persuaded that zoologists should not assume the responsibility for what might result in bacteriological, serological, and public-health work if these cases are judged solely as questions to be settled under the law of priority. We agree with specialists in mammalogy that an application of the rules will "produce greater confusion than uniformity"; but we are persuaded that the proposition advanced by the mammalogists would result in preserving ambiguous names and would not meet the desiderata for public-health laboratories.

We offer an alternative proposition which appears to us to obviate all chances of ambiguity, namely, that (1-5) under the "plenary power" lodged in the International Commission—

1. The technical systematic names *Simia*, *Simia satyrus*, and *Pithecus* be declared suppressed and as eliminated from further use in connection with any genus or species in zoology;

2. *Theranthropus* 1828 be suppressed because of inevitable difference of opinion as to its availability;

* Manuscript submitted for publication Mar. 1, 1926.

3. *Chimpansee* 1831 be adopted as official generic name for the African chimpanzees, and the name be included in the "Official List";

4. The species *chimpanse* 1856 be declared type species of *Chimpansee* 1831, thus giving a tautonymic combination similar to *Gorilla gorilla*;

5. The generic name *Macaca* 1799, type *inuus=sylvanus* 1758, be declared valid and be inserted in the Official List of Generic Names;

6. Finally, that the generic name *Pongo* 1799, type *borneo=pygmaeus* 1760, be inserted in the Official List of Names as correct name for the Malayan orang-utans under the rules.

In analyzing the causes of the confusion in zoological nomenclature, the primary and most important factor, in our opinion, is the lack of proper instruction in the principles and practices of nomenclature (i. e., the grammar of science). Students too often have to flounder around amid a chaos of technical names without being taught why these names are used or how to use them. The remedy consists in teaching the grammar of science to persons who later have to speak and write the language of science.

Confucius [K'ung tsze] (550 or 551–478 B. C.), the famous sage of China, was once asked by a disciple "what he would consider the first thing to be done if intrusted with the government of a state. His reply was, '*The rectification of names.*' When told that such a thing was wide of the mark, he held to it, and indeed his whole social and political system was wrapped up in the saying."—Legge, 1910, *Encycl. Brit.*, v. 6, p. 909.

The authors of the present paper have more than once wished that Confucius were here to rectify the names of the primates.

In classifying the zooparasitic infections of the chimpanzee, of the orang-utan, and of the Barbary ape, with special reference to the congeneric and conspecific identity of these infections in man, we have come into intimate relation with a serious problem in nomenclature which has caused considerable difficulty in mammalogy. The viewpoint of two authors in a field other than mammalogy appears to us to have a bearing on the subject, and we venture to invite the attention of mammalogists to our premises and conclusions.

Abbreviations.—In this discussion, abbreviations are used as follows:

Art.=Article number —, the International Rules of Zoological Nomenclature.

^d=Dead name; it should be eliminated from future literature except in direct quotation or historical data, such as reviews and tables of synonymy.

^e=Emendation of name originally printed with some other spelling.

^h=Homonym, hence dead name; see also ^d.

^j=Name or systematic position is *sub judice* for this species or other unit quoted.

^l=Name used in a broad taxonomic sense (*sensu lato*), as of earlier authors, especially prior to 1870.

^m=Obvious misprint; see ^d.

mt.=Type by monotypy, i. e., only one definite species was cited at time of original publication of generic name, Art. 30c and e.

^o=Objective (absolute) synonym, as in case of renaming a genus or species, or the genus has the same type species as an earlier-named genus.

^r=Name used in restricted taxonomic sense (*sensu restricto*), as of later authors, especially since 1900.

^s=Subjective synonym, generally admitted as such, or at least by some authors.

s.=Seu, or synonym.

So. or so.=Synonym of.

Syn.=Synonym.

^t=Type species of genus, or type locality.

Tat. or tat.=Type by absolute tautonymy, Art. 30d.

Tod. or tod.=Type by original designation, Art. 30a.

Tpd. or tpd.=Type by present designation, Art. 30g.

Tsd. or tsd.=Type by subsequent designation, Art. 30g.

HISTORICAL DATA

A (B; C). NAMES PUBLISHED PRIOR TO JANUARY 1, 1758.—These names have no available nomenclatorial status under the Rules of Nomenclature (see Art. 26), but the references have, of course, a bibliographic value.

1551: GESNER, 1551, *Quadrupeda*,² Liber I, 957–979, gives a discussion of *Simia* which is exceedingly important from a historical point of view. A difference of interpretation (in regard to a certain portion of this work) between Oldfield Thomas and the Secretary of the International Commission is fundamental in applying the International Rules to the generic name *Simia*, as will be explained below (p. 48). Gesner (p. 957) heads a chapter “De Simia,” and states:

“Simiae dicuntur, ut grammatici annotant, quòd simae sint & naribus depressis, vel quasi mimae & imitatrices. Simiae nomen Graecum, id est pressis naribus: unde simias dicimus eò quòd huius modi sint, & facie foeda, Isidorus.”

On p. 957 he figures the

Barbary Ape (see our fig. 1). Under “B” to “H” (pp. 958–966) he discusses the subject in a manner which shows that he uses *Simia* as a general name, referring to primates in various countries, with numerous references to early Greek and Latin writers. He discusses—

p. 966. *De simiis diversis*. Simiarum genus omnino multiplex est, hoc quidem omnibus còmune, humani corporis speciem aliquo modo referre, posterioribus cruribus erigi, ad omnia dociles & imitatrices esse. Differunt autem inter se, cauda & barba, quod aliae habeant, aliae careant. (Simiarum genera hominis figurae proxima, caudis inter se distingu-

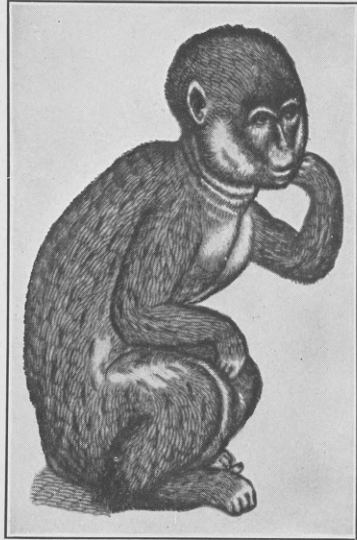


FIG. 1.—Barbary Ape, *Simia sylvanus* L., 1758.—After Gesner, 1551, p. 957

² Of the three editions of this work, we have access to only one.

untur, Plinius.) Deinde magnitudine, colore. Item faciei figura, quae vel hominem, vel canem, vel porcum repraesentant. Primae simpliciter simiae dicuntur, alterae cynocephali, tertiae *CHOEROPITHECI*, id est simiae porcariae, ut Gaza apud Aristotelem vertit: Qui uno tantum in loco hoc animal nominat, chamaeleontē scribens rostrum ei simillimum habere. Differunt autem inter se simiae, non solum ut nominibus distinctae sunt, ut simpliciter dictae simiae, de quibus iam scripsimus: cercopitheci, cepi, callitriches, cynocephali, satyri, sphinges, de quibus deinceps scribam, sed etiam quae unius sunt generis & nomen commune habent, non omnes sunt similes, nam ex simpliciter dictis simiis, aliae sua facie hominem, aliae canem magis referunt, &c. ut supra ex Galeno exposui in Simia B. Sunt & cynocephalorum diversa genera, nec unum genus caudatarum. Recentiores simiarum generi animalia quaedam non recte adscribunt, ut Albertus chimaeram, quae non revera animal, sed poëtarum figmētum est, de quo pluribus egi in Capra a. Idem de animalibus 7. 1. 6. PYGMAEOS genus quoddam simiarum esse putat, non homines, sed homini figura tantum & statura erecta similes, & actionibus tum aliis tum pugna adversus grues, quasi ex deliberatione, ut Niphus inquit. Circa paludes supra Aegyptum unde Nilus profluit, Pygmaei pugnare dicuntur cum gruibus, non enim id fabula est, sed certe genus tum hominum, tum etiam equorum pusillum, ut dicitur, est, deguntque in cavernis, Aristot. de hist. anim. 8. 12. Ubi Niphus, Pygmaei (inquit) homines non sunt: Primò quia non habent rationis usum perfectum: deinde quia nec verecundiam, nec honestatem, nec iustitiam reipub. exercent. Sed quia in multis imitantur homines, adeò ut loqui possint, ideo creduntur homines: non sunt autem, quia locutionem imperfectam habent. Ad haec non videntur homines esse, cum careant religione: est enim religio, ut Platoni placet, propria homini, & soli & omni homini conveniens, Haec ille. Sunt quidem in genere simiarum nonnullae canina specie & parvis hominibus similes, ut dicam in cynocephalis n. sunt & satyri, & alia simiarum genera, humana ferè forma. Vitae etiam longitudo, anni circiter octo, ut Albertus refert, & corporis proceritas, pygmaeos simiis potius quàm hominibus coniungit. Sed veterum nullus aliter de pygmaeis scripsit, quàm homunciones esse, &c. necque recentiores quicquam aliud praeterquam ex veterum scriptis, de eis cognoverunt. Pygmaeorum & pugnae ipsorum cum gruibus meminit Homerus Iliados tertio: cuius versus Strabo etiam citat libro I. Pygmaeos meridianam oram Oceani incolere scribens. Idem libro 2. asserit scriptores rerum Indicarum, praesertim Deimachum & Megasthenem tum alia falsa prodidisse, tum quae de Pygmaeis ante ipsos Homerus fabulatus erat. Et libro 15. ex Onesicrito: Homines in India (inquit) quosdam trium, quosdam quinque dodrantum esse ait, quorum nonnulli naso careant, solis spirandi foraminibus facie supra os insigni. Cum illis quorum proceritas trium dodrantum est, grues pugnare, item perdicēs anserum magnitudine. Illos gruum ova legere atque abolere: nam ibi nidificare grues, nec alibi earum ova nidosque reperiri. Saepe etiam gruem cadere quae aeneum spiculum habeat, quo scilicet in pugna vulnerata fuit. Item libro 17. In locis quibusdam, ubi calor (aut frigus) excedit, pecora parva sunt: ut oves, caprae, & boves. Canes quoque pusilli, asperi tamen & pugnaces. Et fortassis ab animalium istorum parvitate, homines quoque Pygmaei conficti sunt: neque enim fide dignus quisquam ceu testis oculatus eorum meminit. Pygmaeorum & latrantium (ἐλακτόνων: hos alii cynocephalos vocant) gentes in Aethiopia pariter

& India reperiuntur, Philostratus. *Γυγανῆς*, *πυγολίαις*. est autem gens ante Aegyptum pusillorum hominum, Varinus. Vide *Γυγμῆς* apud eundem.

"Raphaël Volaterranus mantichoram quoque & erocutam simiarum genera esse putat, nullo autore, nullis argumentis: quanquam Albertus quoque alicubi maricomorion (corrupto vocabulo mantichorae) simiarum generis esse scribit, Ego sententiam meam de duabus istis bestiis, statim post Hyaenam supra exposui."

p. 967. "De *Cercopitheco*," figure inserted. "*Cercopithecus* vocabulum Graecum, Latinè ad verbum simiam caudatam sonat: cercos enim caudam significat.

p. 969. "De Cepo. *Cepus* . . . , genus simiae caudatae . . ."

p. 969. "De *Callitriche* simia caudata barbataque." "*Callitriches* toto penè aspectu differunt (à caeteris simiis:) barba est in facie, cauda latè fusa priori parte.

p. 970. "De *Simiis* sive *Cercopithecis* prasiensis et aliis magnis." "In Prasiensis Indorum regione Megasthenes simias scribit, maximis canibus non inferiores esse magnitudine, quinque cubitorū (sic & Volaterranus transtulit: & praeterea comameis humanam esse) caudam habere, tum ex earū fronte comas propendere, easdemque barbam promittere: tum facie alba esse, & vero corpus nigrum spectari, necque malitia caeteris simiis ingenta, sed mansuetudine & humanitate imbutas esse, Aelianus" . . .

"Est & formae rarae cercopithecus, magnitudine & forma hominis: curibus siquidem, virili membro, facie, dicas hominē agrestem, quia totus est pilo obsitus. nullum animal perseverat plus stando illo, homine solo excepto. amat pueros & mulieres, non secus ac homines suae regionis, conaturque cum vincula effugerit palàm cum his concumbere, quod nos vidimus. Caeterum animal tamen ferum est, sed talis industriae, ut homines aliquos minus ingenio valere dicas, non quidem è nostris sed barbaris, qui inclementes coeli regiones habitant, velut Aethiopes Numidaeque quidam & Lapones, Cardanus: Nos infra satyrorum etiam & quos pilosos vocant recentiores, similem tum formam tum libidinem commemorabimus. Eiusdem generis fuerit simia ista cuius imaginem hīc adiecimus, ex Germanico quodam libro descriptionis Terrae sanctae mutuati."

p. 971. "De *Cynocephalo*." "*Cynocephali* & ipsi sunt è numero simiarum, Aristot. Plinius, Solinus & alii. Nomen ex eo trahunt quòd canino praediti sunt capite, caetera membra humana habent, Aelianus. Gaza apud Aristotelem canicipites transtulit. Quidam Gallicè, Germanicè, & Illyricè interpretantur babion. Babuino (Italicè) species simiae, sed minor, (Aristoteles cynocephalum simia maiorem esse scribit, sed dici potest, multa cynocephalorum genera esse, Arriano teste,) Arlunnus. Angelicè babons."

p. 974. "De *Satyro*."

p. 979. "De *Sphinge* simiarum generis." "Sphingas fusco pilo, māmīs in pectore geminis, Aethiopia generat, multaue alia monstro similia, Plin."

1641: *Satyros indicus* TULPIUS,³ 1641 (also 1650), Obs. med., Lib. 3, Cap. 56, 274-279, pl. 14 (p. 275); 1652, 283-291, pl. 14 (p. 284); 1672 (also 1685; 1716; 1739), 270-277, pl. 14 (p. 271); 1740, 370-379, pl. 14 (p. 371).—

³ There are eight editions of this work in the Library of the Surgeon General's Office, U. S. A., at Washington, D. C.

Whatever complex of animals Tulpus may have had in mind, the picture he published clearly shows a chimpanzee (see our fig. 2) from Angola, as several authors have recognized, and it is to this animal that his article should be restricted. Art. 30n and 31.

LINN., 1748a, 3 (so. *Simia satyrus*); 1758a (1760a), 25 (so. *Simia satyrus*); 1766a, 34, under *S. satyrus* (but indicates it is a distinct species).—HOPPIUS, 1760 (1763), 69–70, fig. 3 ([*Simia Satyrus Tulpii*). The source of the illustration, fig. 3, in Hoppius (see our fig. 8) has not been definitely traced by us, but is said to be Scotin, 1738 or 1739; the picture represents a chimpanzee but obviously it is not a direct copy of the illustration by Tulpus.—GMEL., 1788a, 27 (so. *Simia troglodytes*).—AUDEBERT, 1799, 19 (same as Jocko, of Borneo).—HUXLEY, 1863, 7–8, fig. 2 (“It is plainly a young chimpanzee”).

- 1641: *Homo sylvestris* TULPIUS, 1641, pl. 14, p. 275. “Orang-outang” (India), “quoias morrou” (Africa), “boschmensch.”—Identical with *Satyrus indicus* TULPIUS, 1641 (1650; 1652; 1672; 1685; 1716; 1739; and 1740). Not used as technical name but in Latin texts: “vocatur Indis orang-outang, sive homo sylvestris, uti Africanis quoias morrou.”

- 1645: *Cercopithecus formae rarae* ALDROVANDUS, 1645, v. 9, 245, 249, 1 fig.—The figure (see our fig. 7) is either a product of artistic imagination, perhaps a combination (upper part) of a freak human being (cf. Bontius’s fig. on p. 84), with (lower part) a baboon, or the representation of a freak, caudate, pilose, hirsute, woman; hands do not reach to knees (cf. *Homo*); great toes are distinctly unusual (cf. apes). We here take the cephalic half of the figure, including arms and hands, as the type, thus interpreting the illustration as *Homo sapiens*.

LINN., 1758a, 24, refers to this figure under “*Homo caudatus hirsutus*,” together with Bontius, 1718, p. 85 [last paragraph].—HOPPIUS, 1760 (1763), 70–72, fig. 2, cites Aldrovandus, 1645, 219, as [*Simia*] *Lucifer Aldrovandi*, and copies his figure as fig. 2.

- 1699: Orang-outang, sive *Homo sylvestris*, or Pygmie TYSON, 1699 (1751), Anat. Pygmie, 1–108, figs. 1–14.—LYDEKKER, 1910, Eb, v. 6, 166 (reexamined the skeleton and pronounced it that of a baby chimpanzee).—HUXLEY, 1863, figs. 3–4 (reexamined the skeleton and says it is “a veritable *Troglodytes niger*, though still very young”).—This is clearly a chimpanzee, see our fig. 3. TYSON copies *Satyrus indicus* Tulpus (as fig. 15), *Homo sylvestris* Bontius (as fig. 16), and *Cercopithecus formae rarae* Aldrovandus (as fig. 17).

- 1718: Ourang Outang sive *Homo sylvestris* BONTIUS, 1718, Hist. Nat. & Med., 84–85, [1] fig. [p. 84].—Bontius discussed an animal which lives in Java. The presumption would be that he had in mind the animal known to-day as the Orang-utan, and this presumption may be correct. The only anatomical characters, however, upon which a zoological determination can be based are found in the figure given on p. 84 (which is copied by Tyson, 1699, fig. 16, and therefore dates prior to 1718). This picture (see our fig. 4) shows hands and feet which are distinctly human and apparently represents a freak pilose and hirsute woman.

LINN., 1748a, 3, cites “Pont. ind. 85.” Apparently this refers to the “Bont. ind.” but as the figure on p. 84 is not quoted, it is at least doubtful whether this figure is included in the reference.—LINN., 1758a, 24, quotes “*Homo sylvestris* Orang Outang Bont[ius], 1718], “iau. 84, t. 84” under *Homo troglodytes*, and “Bont. iau. 85” [cf. Linn., 1748a, 3] under *Homo caudatus hirsutus*.—HOPPIUS, 1760 (1763), 72–73, fig. 1, quotes Bontius [1718], 84 and the figure on p. 84 (“Bontius in

Java insula depinxit illos"; . . . "Bontius jav. 84 de hac specie"; ". . . [Simia] Troglodyta Bontii"); but if fig. 1 of Hoppius is supposed to be a copy of the illustration given by Bontius the artist has taken considerable liberty in his redrawing.

- 1748:** 1. *Simia Satyrus* LINN., 1748a, Syst. Nat., 6. ed., 3. Based on *Satyrus indicus* Tulpius, [1641; 1739, etc.] obs. [pl. 14, p.] t. 271, and "Pont. ind. 85."—As of this date (1748) the name is of importance only as a bibliographic reference to clear up Linn., 1758a, 25 (see Art. 26). This species is clearly based upon two bibliographic references, namely, (a) *Satyrus indicus* Tulpius (a chimpanzee, see above 1641), and (b) "Pont. ind. 85." This second reference presents a slight difficulty in interpretation; probably a typographical error has occurred and the reference is intended for Bont. ind. 85. Even with this interpretation the difficulty is not entirely solved; on page 84, as shown above, Bontius pictures a human being under the name "Ourang-Outang"; on page 85, one paragraph refers to "*homines montani caudati*" in Borneo and this appears to be the reference quoted by Linn., 1758a, 24, under *Homo caudatus hirsutus* (see below). At the top of page 85, however, a reference to the "Ourang-Outang" gives rise to a suspicion that Bontius may have had the true Orang-utan also in mind; but as anatomical characters are not given, an unconditional, zoological determination in this sense appears to be subject to question. The conservative conclusion therefore seems to be indicated that the species *Simia satyrus* 1748, is to be restricted to the chimpanzee.—LINN., 1758a, 25, quotes Linn., 1748a, 3, under the species *Simia satyrus*.—THOMAS, 1911, PZSL, restricts *Simia satyrus* 1748a, 3, to the "common chimpanzee."

3. *Simia ecaudata*, clunibus tuberosis. Alp. aegypt. 241. t. 16. Apa. [= *S. sylvanus*].

B (A; C). NAMES PUBLISHED IN 1758.—These names are to be considered as to availability in connection with the nomenclatorial problems in question.

- 1758:** LINNAEUS, 1758a, Syst. nat., 10 ed., accepted the genus *Homo* (p. 20), rejected the genus *Troglodytae* (p. 24), and accepted for apes and monkeys the genus *Simia*, which he divided into three subgenera, namely, *Simia* (*Simia*), with two species (*satyrus* and *sylvanus*), *Simia* (*Papio*), with two species (*sphinx* and *apedia*), and *Simia* (*Cercopithecus*, *tsd. diana*), with 17 species. His species *sapiens*, *troglodytes*, and *sylvanus* come into consideration in the present discussion.

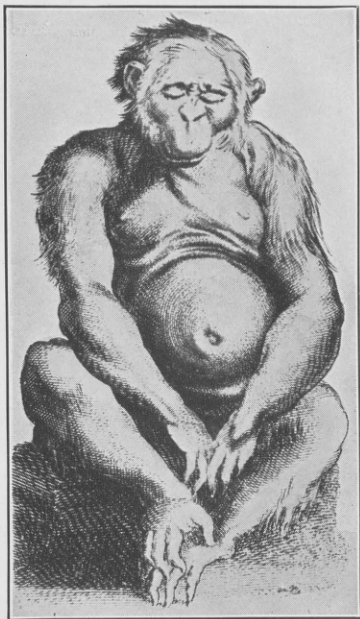


FIG. 2.—*Satyrus indicus*, *Homo sylvestris*, Orang-Outang, etc., from Angola, Tulpius, 1641, pl. 14, p. 275.—Used by Linn., 1758a, as basis for *Simia satyrus*, i. e., a chimpanzee

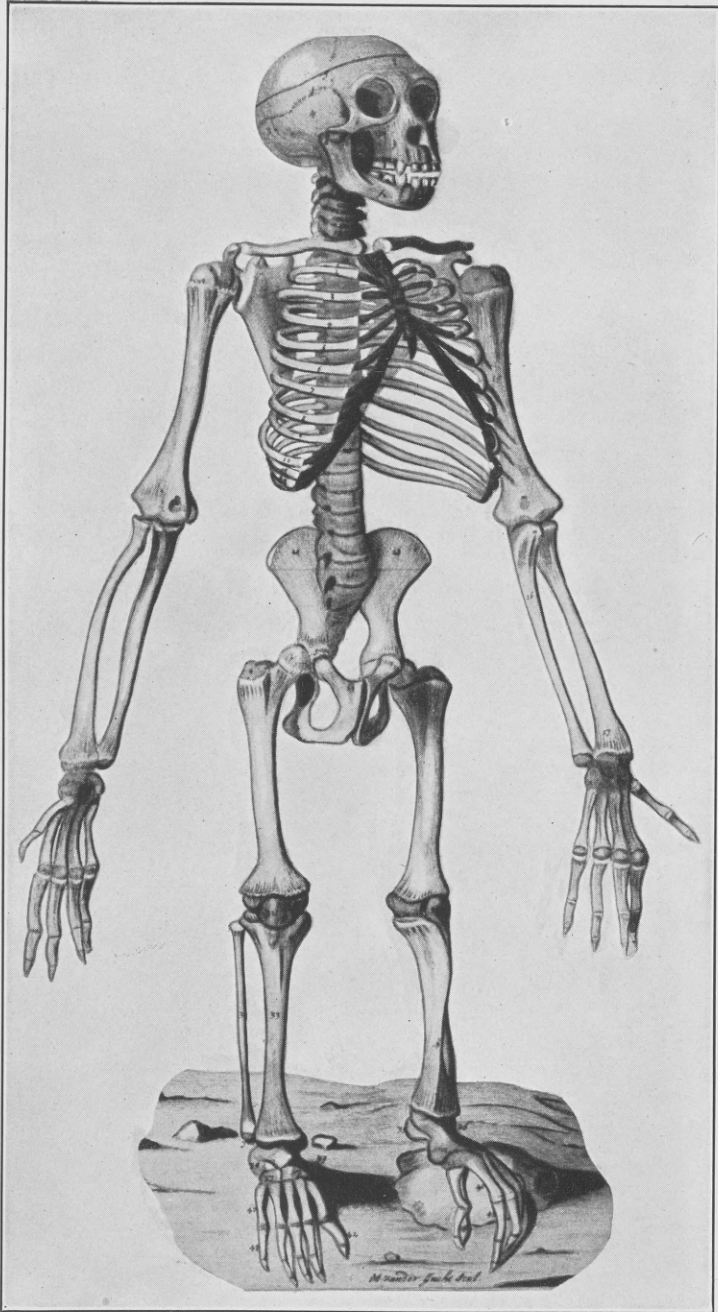


FIG. 3.—Orang-Outang, sive *Homo sylvestris* or Pigmie Tyson, 1699, fig. 5. A young chimpanzee. See the 13 ribs

1758: Genus *Homo* LINN., 1758a, 20.—Clearly based upon *Homo sapiens*, which is type by the Linnaean rule, 1751a (Art. 30n), by subsequent designation (Art. 30g), and by subsequent suppression of the second species *troglydytes*.

1758: *Homo sapiens* LINN., 1758a, 20.—“*Homo diurnus*”—Man, considered as a single species.

1758: *Homo troglodytes* LINN., 1758a, 24.—This name is based upon 3 bibliographic references, namely:

- (1) *Homo sylvestris* [i. e., *silvestris*].—Orang Outang. Bontius, 1718, iau. p. 84 [–85], t. [fig. p.] 84.—As shown above (see 1718), this is anatomically a human being (see our fig. 4), as the hands do not reach to the knees.
- (2) Kakurlacko. Kiôp. itin. c. 86. [Not available to us.]
- (3) Dalin. orat. 5. [Not available to us.]

Whatever doubt may exist in the interpretation of the reference to “Pont. ind. 85” under *Simia satyrus* Linn., 1748a, 3, the foregoing reference in Linn., 1758a, 24, clearly eliminates Bontius, 1718; 84, fig. page 84, from further consideration in connection with the name *Simia satyrus*. As shown below (1779), the specific name *troglydytes* later becomes confused in the genus *Simia*.

THOMAS, 1911, PZSL, 125, has apparently had access to the references which we have not been able to obtain, for he states that *Homo troglodytes* is “A mixture of the abnormal hairy woman figured by Bontius (Hist. Nat. Med. Ind. Or. p. 84) with an account of albino negroes taken from Nils Matson.”

1758: “Genus *Troglodytae*” LINN., 1758a, 24; 1766a, 33.—A new generic name “*Troglodytae*” is printed in a footnote, in the plural, as “Genus *Troglodytae* ab *Homine* distinctum,” with mention of

“Speciem *Troglodytae* ab *Homine sapiente* distinctissimam,” but no binomial is formed and the genus is not accepted by Linnaeus (see below *Troglodyta Bontii* 1902). Authors will doubtless hold two divergent views in regard to *Troglodytae*: Some authors will naturally claim that this is a correctly published generic name for which Linn., 1758a, 24, is to be held responsible; other authors will claim that since Linné did not adopt the generic name it has no status as of 1758. Whatever view be adopted the question is settled by later authors (see below, 1902) and the name (if recognized) is to be restricted to *Homo troglodytes*. See also our footnote 7, p. 51.

1758: Genus *Simia* (subg. *Simia*) LINN., 1758a, 25 (contains 2 species: 1. *S. satyrus* (=chimpanzee) and 2. *S. sylvanus* (=Barbary ape). Obviously one of these species should be the genotype, since this is the original nomenclatorial publication of the genus *Simia* which Linnaeus divides into three subgenera, namely, *Simia* (typical subgenus, species 1 and 2), *Papio* (species 3 and 4), and *Cercopithecus* (species 5 to 21). But there

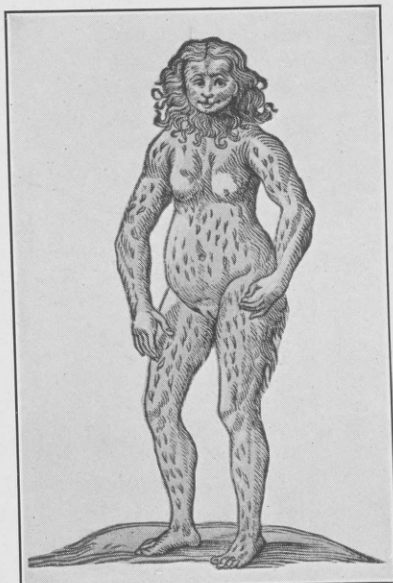


FIG. 4.—Orang Outang, sive *Homo sylvestris* Bontius, 1718, p. 84. A pilose woman, cited by Linn., 1758a, as basis of *Homo troglodytes*

is a rather fundamental difference of opinion (see below, p. 48) as to whether *satyrus* or *sylvanus* should be taken as type. For type designations, see p. 46.

1758: *Simia satyrus* LINN., 1758a, 25.—This name is distinctly based upon two bibliographic references, namely—

- (1) *Simia satyrus* Linn., 1748a, 3. See above.
- (2) *Satyrus indicus* Tulp., 1739 [see 1641]=chimpanzee; Africa, Asia. See above, 1641 and our fig. 2.

From these data there appears to be no escape from the conclusion that the specific name *Simia satyrus* Linn., 1758a, 25, is to be restricted to the chimpanzee despite the geographic reference "Africa, Asia," since the only anatomical details available deal with the chimpanzee from Angola and from the standpoint of Linn., 1758a, the animal known to-day as the Orang-utan was systematically and nomenclatorially nonexistent.

MATSCHE, 1904, 56 (confines *S. satyrus* to the chimpanzee).—ROTHSCHILD, 1904, PZSL, 422, 425 (confines *S. satyrus* to the chimpanzee).—THOMAS, 1911, PZSL, 125 (interprets *S. satyrus* 1758 as "clearly the common chimpanzee" and transfers the species to *Anthropopithecus*).—ELLIOT, 1913c, 241 (agrees that *S. satyrus* 1758 is the chimpanzee and transfers *satyrus* to *Pan*).

1758: *Simia sylvanus* LINN., 1758a, 25.—This species, quite universally accepted as the Barbary Ape, is based upon a description and the following bibliographic references:

- a. *Simia* no. 3. Linn., 1748a, 3 [see above, under 1748].
- b. *Simia* Gesn. quadr. 847. [See above, 1551, Gesner.]
- c. *Simius cynocephalus alter*. Alp. aegypt. 241, t. 16.
- d. *Cercopithecus*. Ionst. quadr. t. 59, f. 5.

Habitat in Africa, Zeylona.

THOMAS, 1911, PZSL, 125, says: "Linnaean reference: Syst. Nat. (6), p. 3, no. 3, where the sole reference is to Alpin. Aegypt. p. 241, pl. xvi. This is clearly a Barbary Ape, to which therefore, instead [p. 126] of *Macacus* (or *Macaca*) *inuus* or *Inuus ecaudatus*, the name *Simia sylvana* would appear to be technically applicable."

Thomas accepts *S. sylvanus* as type of *Simia* on basis of Absolute Tautonomy (Art. 30d and Opinion 16), as he considers (p. 122) that the citation of "*Simia* Gesn. quadr. 847" by Linnaeus is equivalent to citing "The *Simia*."

In Opinion 16, the Secretary of the Commission took a somewhat different view, namely, that "An examination of Gesner's text shows, however, that he did not use *Simia* in the specific sense of *the simia*. Accordingly, this case [*Simia*] is not disturbed by the present ruling."

1758: "The Man of the Woods. L'Homme Sauvage. *Homo sylvestris*, s. *Satyrus*, vel Orang-outang s. Chimpanzee" of EDWARDS, 1758, Gleanings of Natural History, v. 1, Chap. III, pp. 6-8, pl. 213, syns. "The Satier, Sauvage, Wild-man, Pigmy, Orang-autang, Chimp-anzee, &c."; quotes Tyson's Pigmy [=chimpanzee], Sloane's "Chimpanzee" from Africa, Satyrs of P. Vander Aa (of Leiden) pls. 11 and 77, and Beckman's, 1718, fig. Oran ootan=Man of the Woods.—This publication is neither consistently binary nor consistently binomial and is therefore not available nomenclatorially. Edwards' figure (pl. 213) is reproduced by Hoppius, 1760, fig. 4 (see below and our fig. 5). The date (1758) explains why Linné, 1758a, does not quote this work, and it eliminates Edwards' *Homo sylvestris* from consideration in connection with *Simia satyrus* 1758.

C (B; A). PARTIAL LIST OF NAMES PUBLISHED AFTER 1758.—Following Linné, 1758a, various complications arise which are reducible primarily to the fact that authors did not give full consideration to the Linnaean (1751a) Rules of Nomenclature. The first

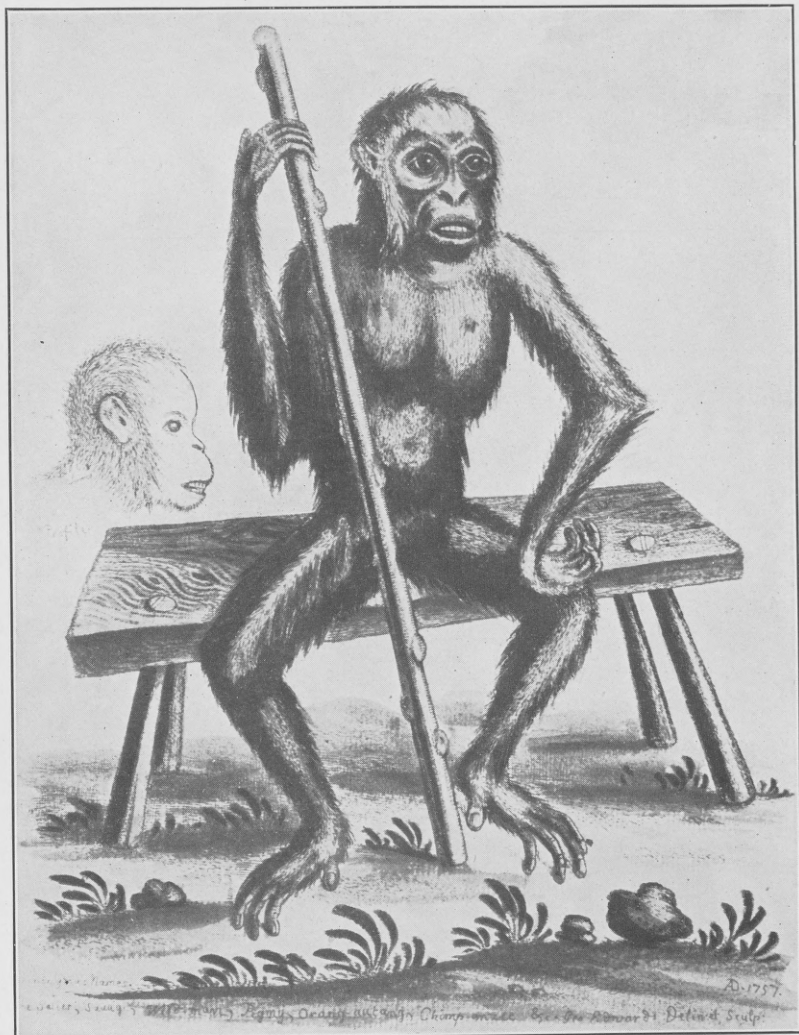


FIG. 5.—*Homo sylvestris*, Orang-Outang, Chimpanzee, of Edwards, 1758, pl. 213. Copied by Hoppius, 1760, fig. 4, as [*Simia*] *Pygmaeus Edwardi*, and copied by Schreber, 1775, Supplementary plate] II, as *Simia satyrus* Linn.

author available to us is Hoppius 1760 (1763), frequently (but in our opinion erroneously) quoted as Linn., 1760 (1763). The author is discussing the Linnaean genus *Simia*, clearly with special reference to the Linnaean subgenus *Simia*. The paper is written in Latin and this fact is at the basis of the lack of

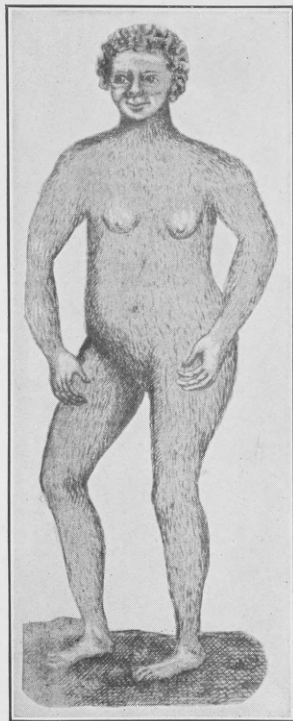


FIG. 6.—[*Simia*] *Troglodyta Bontii*
[cf. *Homo troglodytes* 1758a].—After
Hoppius, 1760



FIG. 7.—[*Simia*] *Lucifer Aldrovandi* [binomial
designation of *Cercopithecus formae rarae*
Aldrovandus, 1645, 249].—After Hoppius, 1760

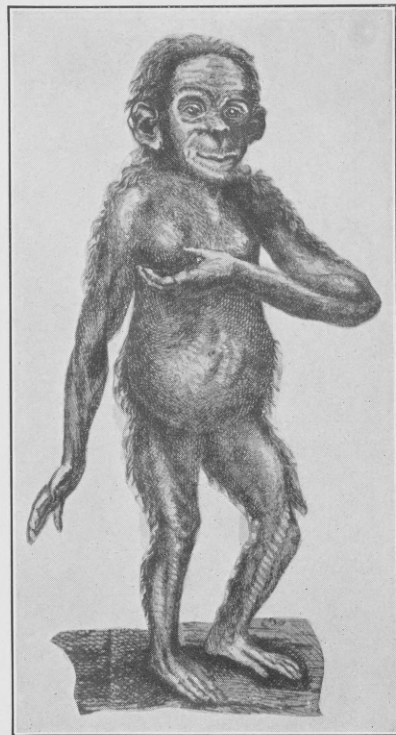


FIG. 8.—[*Simia*] *Satyrus Tulpia* [not a direct copy
of *Satyrus indicus* Tulpia, 1641, but, fide
Cuvier, 1829, 89, copied from Scotin, 1739.
Cf. also our fig. 2].—After Hoppius, 1760

uniformity of citations by later authors, as will be shown below. Hoppius discusses four units to which he refers (p. 68) as "nationes."

- 1760:** [*Simia*] *Pygmaeus Edwardi* HOPPIUS, 1760 (1763), *Anthropomorpha*, *Amoen. acad.*, pp. 68–69, p. 76, fig. 4.⁴—The illustration, copied from Edwards, 1758, pl. 213 (see above, 1758; see also our fig. 5), is that of a present-day orang-utan, and has been rather generally interpreted as such. We accept the zoological interpretation by earlier authors. This name has been interpreted nomenclatorially in two different ways, namely:

- (a) As *Simia pygmaeus* by ROTHSCHILD, 1904, *PZSL*, 438, fig. 117; by LYON, 1907, *PUSNM*, 571, and 1911, *PUSNM*, 144; and by ELLIOT, 1913c, 192; all in the sense of the present-day orang-utan.—We concur in this interpretation.
- (b) As *Pygmaeus edwardi* by SHERBORN, 1902a, 320, 801, 1169.

- 1760:** [*Simia*] *Satyrus Tulpium* HOPPIUS, 1760 (1763), 69–70, 76, fig. 3.⁴ "*est quoque incola Africae, in Europam ex Angola advectus.*"—The bibliographic reference to Tulpus together with the general appearance, large ears, and long arms shown in fig. 3 (not a copy from Tulpus, see above, 1641) shows (see our fig. 8) that the author had the present-day chimpanzee in mind; accordingly, this reference confirms *Simia satyrus* Linn., 1758a, 25, as the chimpanzee. According to Cuvier, 1829, *Règne Animal*, v. 1, p. 89, Tulpus' fig. 3 is copied from Scotin [1739, tab. 5, not available to us].

Nomenclatorially the reference has been interpreted in two different ways, namely:

- (a) As *Simia satyrus* by ROTHSCHILD, 1904, *PZSL*, 438; LYON, 1911, *PUSNM*, 144; and ELLIOT, 1913, v. 3, 241; and
 - (b) As *Satyrus tulpium* by SHERBORN, 1902a, 871, 1005, 1172.
- 1760:** [*Simia*] *Lucifer Aldrovandi* HOPPIUS, 1760 (1763), 70–72, 76, fig. 2.⁴—This is the atavistic pilose hirsute woman (see our fig. 7) reported by Aldrovandus, 1645, v. 9, 245 and 249, 1 fig., as *Cercopithecus formae rarae* (see above, 1645). Nomenclatorially the reference has been interpreted by Sherborn, 1902a, 34, 556, 1136, as *Lucifer aldrovandi*. It is the same freak which is cited under *Homo caudatus hirsutus* by Linn., 1758a, 24, and 1766a, 33.
- 1760:** [*Simia*] *Troglodyta Bontii* HOPPIUS, 1760 (1763), 72–76, fig. 1.⁴—Undoubtedly a pilose woman (see our fig. 6), namely, *Simia troglodytes* Linn., 1758a, 24. This name has been interpreted as a binomial *Troglodyta bontii* by Sherborn, 1902a, 137, 1000, 1190.
- 1761:** HOUTTUYN, 1761, *Natuurlyke Historie*, discusses man and apes. On pp. 132–137 he lists and briefly diagnoses the mammalian genera of Linnaeus. Under the "Aapen" (pp. 354–369) he lists, with the Linnaean specific names in the margin, the same 21 species of *Simia* cited by Linnaeus, 1758a.—

Plate 5, fig. 1. "De Orang-Outang van Java" is [*Simia*] *Troglodyta bontii* 1760.

Plate 5, fig. 2. "De Chimpanzee van Afrika" is [*Simia*] *Pygmaeus edwardi* 1760.

Plate 6, fig. 1. "De Sater" [*Simia*] *Satyrus* is *Satyrus indicus* of Tulpus, 1641.

- 1765:** LECAT, 1765, *Traité*, pl. 1, p. 35, uses the word orang-outang as including (p. 35) the Kimpezé or chimpanzee; he figures (pl. 1) the male (a chimpanzee) and copies Tulpus', 1641, figure as the female.

⁴ These illustrations are reproduced in *Encyclopaedia britannica*, 1910, v. 2, fig. 1 of plate to p. 118.

1766: *Homo troglodytes*.—LINN., 1766a, 33.—Same status as in 1758a, 24.

Simia (Simia).—Linn., 1766a, 34, same subgeneric status as in 1758.

Simia satyrus.—LINN., 1766a, 34.—A composite species containing (a) the orang-outang of to-day and (b) the chimpanzee—

(α) [*Simia*] *Pygmaeus Edwardi* [1758] HOPPIUS[1760 (1763)], 68, 76, fig. 4. *Homo sylvestris* EDW., 1758, 6, t. 213 (see above).

(β) *Satyrus indicus* TULPIUS [1641], c. 56=[*Simia*] *Satyrus Tulpii* 1760. "Scotin, Lond. 1738. tabula. Chimpanzee" [not available to us]. "An β Species distincta, quam vide Amoen. acad. [Hoppius, 1760] 6, p. 69, t. 76, f. 3."

Thus, by classifying Edwards', 1758, *Homo sylvestris* (an orang-utan) with *Simia satyrus* (a chimpanzee), Linné, 1766a, 34, started a taxonomic confusion which lasted many years and which has resulted in considerable nomenclatorial uncertainty. From his viewpoint, however, his procedure was justified.

Simia sylvanus.—LINN., 1766a, 34.

Simia inuus Linn., 1766a, 35.

1766: BUFFON, 1766, Hist. nat., v. 14 [1-4, 7, 43-83, pl. 1], discusses oranges in some detail.—

p. 3, pl. 1 (see our fig. 9), Africa and des Indes. Buffon's names cited here are not nomenclatorially available, but his discussion is important as bibliographic material to fix certain later names.

p. 3: "les Indiens policés n'ont pas hésité de l'associer à l'espèce humaine par le nom d'Orang-outang, Homme sauvage; tandis que les Nègres presque aussi sauvages, aussi laids que ces singes ... leur ont donné un nom propre (*Pongo*).

p. 7: ainsi, pour présenter ces animaux, voici l'ordre dans lequel on doit les ranger; l'orang-outang ou *pongo*, premier singe; le *pithèque*, second singe; le *gibbon*, troisième singe, mais difforme; le *cynocéphale* ou *magot*, quatrième singe ou premier babouin; le *papion*, premier babouin; le *mandrill*, second babouin; l'*ouanderou*, troisième babouin ...

p. 43: Les orang-outangs, ou le *Pongo** et le *Jocko***.—ils ne fassent tous deux qu'une seule & même espèce:

**Orang-outang*, nom de cet animal aux Indes orientales; *Pongo*, nom de ce même animal à Lowando, province de Congo; *Kukurlacko* dans quelques endroits des Indes orientales, selon Kjoep. chap. 86, cité par Linn.

Homo sylvestris Bontius [1718], p. 84, fig. *Nota*.—Cette figure représente plutôt une femme qu'une femelle de singe.

Troglodites. Homo nocturnus. Linn., 1758a, 24.

Ooran-outan Beakmans Travel to Borneo. London. 1718, fig.

Oerangs-oetangs, de Ceylan, Voyages de Gauthier Schoutten aux Indes orientales. 1707.

***Jocko. Enjocko*, nom de cet animal à Congo que nous avons adopté ... Champanzée, Quimpezée, par les Anglois qui fréquentent la côte d'Angole.

Satyrus indicus Tulpus. [1641] fig.

Homo sylvestris Tyson, 1699, fig., p. 108.

Pygmaeus guineensis 1719.

Edwards, 1758, p. 6, fig.

Satyrus simia ecaudata subtus nuda Linn., 1758a, 25.

Homo sylvestris Brisson, p. 189.

p. 44: nous avons vu le petit orang-outang ou le jocko vivant ...; mais nous ne pouvons parler du pongo ou grand orang-outang, que d'après les relations des Voyageurs.

p. 44: Bontius qui était Médecin en cher à Batavia.

p. 46: "chacrelas" albinos.

p. 47: "Ce *barris* ou *drill* est en effet le grand orang-outang des Indes orientales ou le pongo de Guinée, & le pigmée décrit par Tyson [1699] est le jocko que nous avons vu vivant."

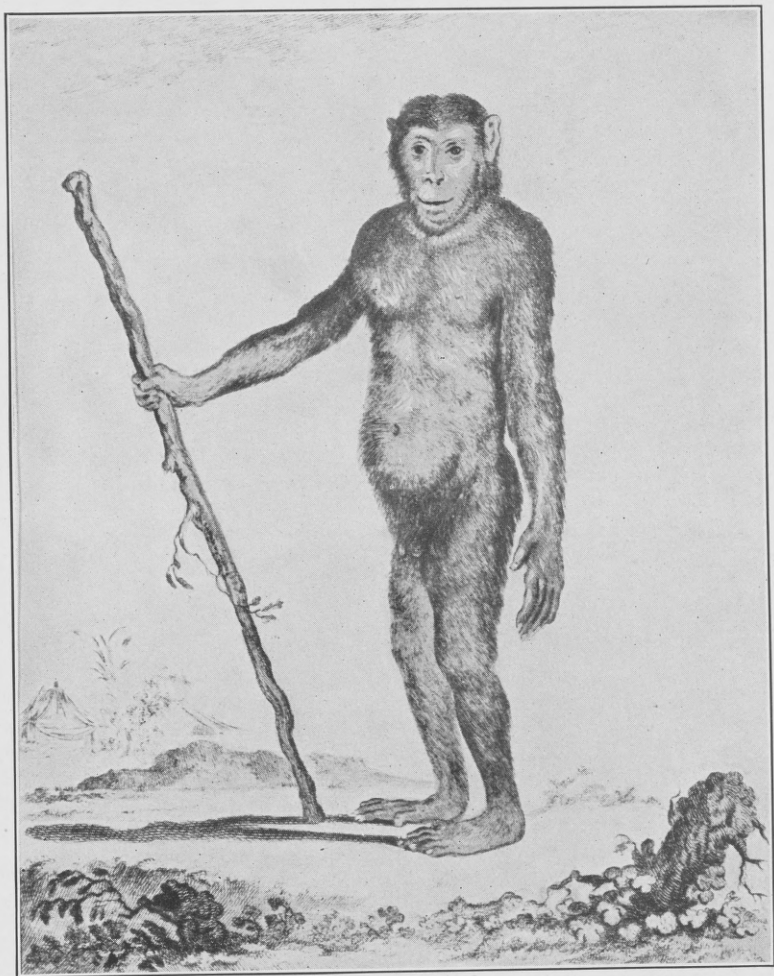


FIG. 9.—Le Jocko, i. e., a chimpanzee.—After Buffon, 1766, v. 14, pl. 1

p. 49: Battel in *Purchass Pilgrims*, v. 5, p. 89, "assure ... 'qu'il y a deux espèces de ces singes très-ressemblans à l'homme, le *pongo* qui est aussi grand & plus gros qu'un homme, & l'enjocko qui est beaucoup plus petit, &c.' : c'est de ce passage très-précis que j'ai tiré les noms de *pongo* & de *jocko*."

p. 72: Du *JOCKO* pl. 1 "Le Jocko." "Je n'ai vu que la peau bourrée (pl. 1) & la plus grande partie du squelette du Jocko, que l'on montrait à Paris en 1740: il mourut l'année suivante à Londres où il fut ouvert; on le rapporta ici dans l'eau-de-vie, & on le mit au Cabinet: dans la suite on a fait bourrer la peau & préparer le squelette. Ce singe avait

été pris en Afrique dans le fond du Gabon, sur la côte d'Angole: étant debout, il avait deux pieds quatre ou cinq pouces d'hauteur... après avoir comparé la description du pigmée de Tyson [1699=chimpanzee] avec notre jocko, j'ai trouvé ces deux animaux si ressemblans, qu'il y a tout lieu de croire qu'ils étaient de même espèce comme ils étaient de même pays. ... Le poil de la tête n'était pas différent de celui du reste du corps par sa couleur noire.

Extensive anatomical details (pp. 73-76) are taken from Tyson, 1699, with Buffon's original observations (pp. 77-83) based on a skeleton in Paris.

From the bibliographic references cited, from the vernacular names quoted, from the geographic localities given, and from the anatomical data mentioned it is beyond question that Buffon's (1766) orang-outang represented a composite species, namely, the present day chimpanzee, the present day orang-outang, and (with doubt) a freak human being. As certain later technical names are based upon his discussion, it becomes desirable to establish types for the vernacular names (pongo, jocko) he uses.

Le pongo was clearly a name of African (Congo) origin, and, according to Buffon's bibliographic reference, it contained Beakman's (1718) ororan-outan of Borneo, and (with doubt) Bontius' (1718) *Homo silvestris* [= *Homo troglodytes* 1758, so. *Homo sapiens* 1758]; from his quotation from Battel (p. 49) it is clear that he took Battel's pongo (an African animal) as basis for his (Buffon's) pongo; Buffon (1766) claimed that *le pongo* and *le jocko* were one and the same species, and gave Africa (Congo) as the source of the name of this animal (*le pongo*); later (1789) he recognizes *le jocko* as a young pongo, distinct from the red orang. On basis of these data, and for purpose of formal nomenclature, we hereby designate Lowando as type locality, and the chimpanzee of Lowando as the type of *le pongo*.

Le jocko was clearly a name of African (Congo) origin, and according to the bibliographic references it included *Satyrus indicus* Tulpius, 1641 [=chimpanzee], Tyson's, 1699, *Homo silvestris* [=chimpanzee], Edwards', 1758, man of the woods [=present day orang-utan], and Linné's, 1758, *Simia satyrus* [=chimpanzee]. For purpose of formal nomenclature, as affecting later technical names, we hereby designate *Simia satyrus* Linn., 1758a (i. e., the chimpanzee) as type of *le jocko*, 1766, with Africa as type locality. This is in harmony with Buffon, 1789 (who recognized *le jocko* 1766 as a young specimen of *le pongo* 1766).

The significance of these type designations will be seen below, compare Erxleben, 1777, and Kerr, 1792.

1770: VISMÉ, 1770, Phil. Trans., v. 59, p. 71-73, pl. 3; 1775, Naturf., 268-271, pls. 6 and 7, describes some tailless monkeys from Bengal under the vernacular name "Golok or wild people." Although these are clearly gibbons, Visme's golok is sometimes cited (cf. Cyolock, Kerr, 1792a, 56) as a jocko.

1773: *Homo diurnus* MUELLER, 1773, 61. For *Homo sapiens*, *diurnus* [not a systematic name in] Linn., 1758a, 20.

Homo nocturnus [cf. Linn., 1758a, 24] MUELLER, 1773, 109.—A composite species, containing: *Homo troglodytes* 1758; "orang-outang=Buschmensch"; *Troglodyta bontii* 1760; cave dwellers; *Satyrus* and fauni of Old Poets; *Homo sylvestris* of Brisson; [S.] *Pygmaeus edwardi* 1760;

- and Tyson's Orang-outang or pigmy, 1699 [i. e., chimpanzee]. This name *nocturnus* can best be confined to *trogodytes* 1758, in order to kill it.
- Simia* (*Simia*).—MUELLER, 1773, 119, same subgeneric status as in 1758, but the name is used in the singular. He adopts the division of *Simia* into *Simia*, *Papio*, and *Cercopithecus*.
- Simia satyrus*.—MUELLER, 1773, 119–120.—This is a composite species, identical with that of Linn., 1766a, 34.
- Simia sylvanus*.—MUELLER, 1773, 120–121, Der Waldteufel.
- Simia inuus*.—MUELLER, 1773, 121, Buschgott, Pan.



FIG. 10.—*Simia troglodytes* Blumenbach.—After Schreber, ca. 1800, Theil 5 (1), Heft 56–57, suppl. pl. 1 C. This is a chimpanzee

- 1775:** SCHREBER, 1775, pp. 1–190, pls. 1–62. It is not clear that the text of the original v. 1 is accessible to us; we have access to a copy of Theil 1 and 2, of which Theil 2 is clearly an original print; Theil 1 is of the same kind of paper and may be an original print of 1775, but it is bound with a Goldfuss, 1826, title-page (of different paper, and contains pp. 1–188, instead of 1–190, as given by Sherborn).
- p. 45: *Simia satyrus* L. Orang-outang. Plate 2b (of Heft 9, 1774); pl. 2 Suppl. (of Heft 56–57, circa 1800).
- A. Der kleinere = *S. pygmaeus* 1760 plus *S. satyrus* 1760.

- B. Der groessere=*S. troglodytes* 1758 plus Ooran outan of Beakman, Borneo, 1718, plus Golock de Visme, 1768.
 p. 68: *Simia silvanus* L. [pl. 4 Heft 1, 1774].
 p. 71: *Simia inuus* L. [pl. 5*, Theil 6, Heft 76-78, 1835].
Simia pithecus Buff., pl. 4 B Suppl. [apparently Theil 5, Heft 56-57, circa 1800].

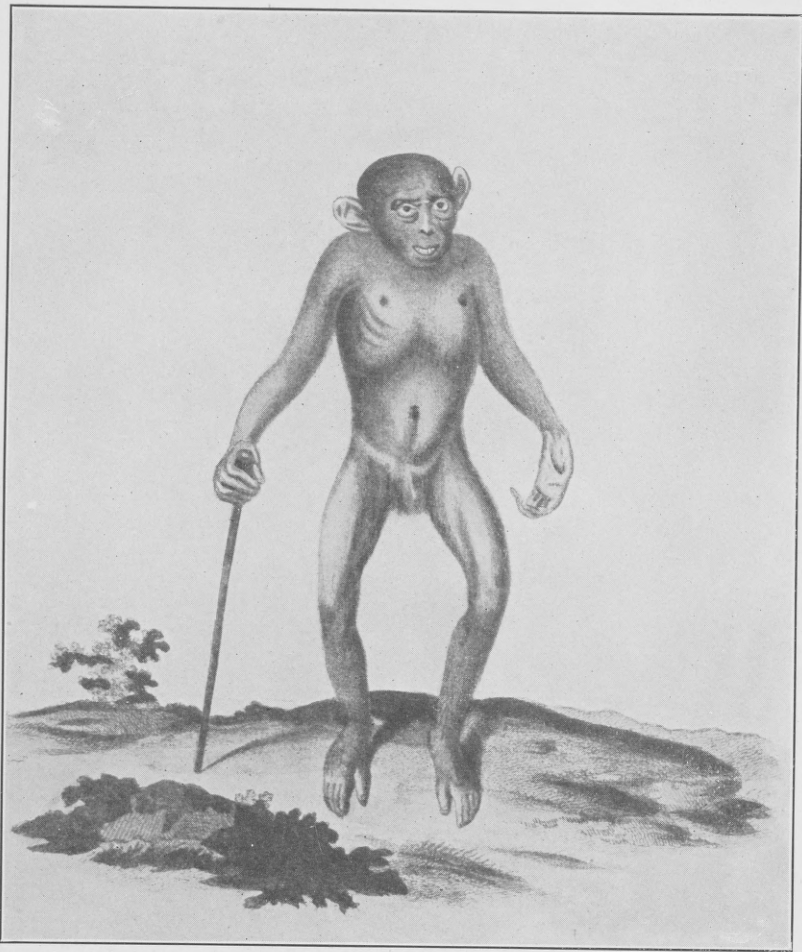


FIG. 11.—“*Simia pygmaeus* Tyson” [1699], a chimpanzee, cf. our fig. 3; not *Simia pygmaeus* Hoppius, 1760 [cf. our fig. 5], which is an orang-utan.—After Schreber, ca. 1800, Theil 5 (1), Heft 56-57, pl. 1B.

1777: ERXLEBEN, 1777, *Systema*, divides *Simia*, 1758, into 5 genera (*Simia*, *Papio*, *Cercopithecus*, *Cebus*, *Callithrix*). He reduces *Homo* to a monotype genus.

Homo troglodytes nocturnus.—ERXL., 1777, 5, so. *Homo sapiens*.

Homo lucifer.—ERXL., 1777, 6, viewed as fabulous.

Simia satyrus.—ERXL., 1777, 6, clearly contains both the chimpanzee (Tulpius, 1641, tab. 14) and orang-outang (*Pygmaeus edwardi* Hoppius, 1760, fig. 4), with extensive bibliography; the species *satyrus* is divided (p. 8) into 2 varieties, namely:

p. 8. “*maior* (le Pongo Buff.) et

p. 8. *minor* (le Iocko Buff. [cf. our fig. 9]).”

The new varietal names *maior* and *minor* are somewhat disturbing in the present case, and in order to simplify the nomenclature it is highly desirable to sink both as objective synonyms, if possible. It is exceedingly doubtful whether they can be killed under Opinion 1, International Commission, for Erxleben gives page references to Buffon, in addition to the vernacular names.

Under 1766, Buffon, we have designated the chimpanzee as type and Africa as type locality, both for *le pongo* 1766 and *le jocko* 1766. Our object in this formal designation was in order that the varietal names *maior* 1777 and *minor* 1777 would automatically sink as synonyms of *Simia satyrus* Linn., 1758, namely, the chimpanzee.

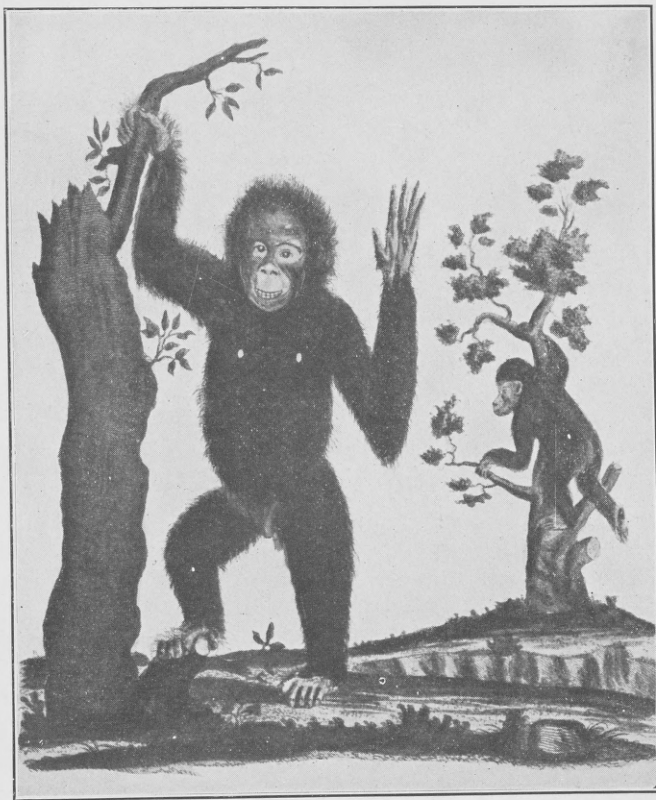


FIG. 12.—“*Simia satyrus* Linn.,” an orang-utan; not *Simia satyrus* Linn., 1758, a chimpanzee [cf. our fig. 2]. After Schreber, 1774, Theil 1, Heft 9, pl. 2B

1779: BLUMENBACH, 1779, Handbuch, who uses the word Geschlecht for genus and Gattung for species, recognizes—

Homo.—BLUMENB., 1779, 60, mt. *H. sapiens*, with 5 varieties. He considers *Homo troglodytes* Linn., as a composite of various specimens of *Homo sapiens* (Patagonian giants, Commerson’s “Quimos,” and other dwarf nations, “Kackerlacken, Blafards, Albinos oder weisse Mohren”) and of “Orangutangs.”

Simia.—BLUMENB., 1779, 65–66. This is essentially a recognition of the subgenus (*Simia*) as of generic rank, but no type is designated.

Simia troglodytes^h.—BLUMENB., 1779, 65, "der Chimpanse," quotes page 284 and plate 14, of Tulpus [1652, see 1641] and plate 5 of Scotin, 1739; cf. also our figs. 2, 8, and 10). It seems to be rather generally assumed that Gmelin, 1788, first used *troglodytes* as a specific name in *Simia* and that it resulted from a transfer of *Homo troglodytes* to *Simia*. The present reference shows that Blumenbach introduced *troglodytes* as a new specific name for the chimpanzee in *Simia*; it would have been an available name for this animal as of 1779 were it not that Hoppius, 1760, had transferred *troglodyta*, syn. *troglodytes*, to *Simia*. *Homo troglodytes* 1758 is cited (p. 64) under *Homo sapiens* as a composite species and thus sunken as a synonym. As *Simia troglodytes* 1779 is based on the same reference (Tulpus [1641], pl. 14) as *S. satyrus* 1758 [plus Scotin, 1739, pl. 5, which is also the chimpanzee], *S. troglodytes*^h 1779 is an objective synonym of *S. satyrus* 1758; it is also a primary, still-born, homonym of *troglodytes* 1758.

Simia satyrus.—BLUMENB., 1779, 65, "der Orangutang," cites Tyson's [1699] pygmie [=chimpanzee], plates 1, 2, LeCat [1765], Traité, pl. 1 [=chimpanzee].—Color brownish; Africa and Sundaische Inseln. It is to be noticed that *S. satyrus* of Blumenbach, 1779, is restricted to the vernacular name orang-utan, but that it includes the chimpanzee.

Simia sylvanus.—BLUMENB., 1779, 66, "der gemeine türkische Affe."

Simia cynomolgus, "der [geschwaenzte] Macacco."

1781: FORSTER, 1781, Indische Zool., p. 39, refers to a "*Simia minor* Penn. Syn. Quad." without further data. Cf. also *minor* 1777.

1784: BODDAERT, 1784, 42, 55, 56, includes in the subgenus *Simia* (*Simia*) five species, three of which are of interest in the present discussion, namely:

1. *satyrus*; cites Linn., 1766, 13 ed., 34; orang-outang Vosm. Camper. Habitat, Java, Borneo.

α. Edwards, tab. 213. See above, 1758. [=Malayan orang-utan.]

β. Jocko and Pongo, of Buffon, pl. 1. See above, 1766. [=African chimpanzee.]

3. *Simia sylvanus*; and 4. *Simia inuus*.

1788: GMELIN, 1788a, Syst. nat., is frequently quoted as the author who nomenclatorially first cited the chimpanzee as *Simia troglodytes*. As a matter of fact, however, Blumenbach (1779) antedated him by 9 years and was cited by Gmelin; furthermore, Gmelin's *Simia satyrus* is a composite of freak Man, of the chimpanzee, and of the orang-utan.

1788: *Simia* (*Simia*).—GMEL., 1788a, 26, same status as in Linn., 1758a.

1788: *Simia troglodytes*^d Blumenb. [1779].—GMEL., 1788a, 26.—Clearly the chimpanzee, at least in part. Not *Homo troglodytes* as authors have frequently assumed. It includes—

"Blumenbach Compend. hist. nat. I. p. 65. [Cf. 1779] et de generis humani varietate nativa. p. 37" [not accessible to us].

Satyrus indicus Tulp[ii] [1672], observat. medic. [Lib. 3. Cap. 56] [p. 271], p. 284, Tab. 14; see above, 1641.

Chimpanzee. Scotin v. Nov. Act. Er. Lips. m Sept. 1739, Tab. V, p. 564. Angola.

Gmelin does not cite a *Homo troglodytes* under *Homo*, but he includes *Homo sylvestris* Bont[ius] [1718], fig. 84, under *Simia satyrus* (see below) [= *Homo troglodytes*]; accordingly, *troglodytes* of Gmel., 1788, is a secondary homonym, which would kill *troglodytes* 1779, even if this latter were not still-born.

1788: *Simia satyrus*¹ of Gmel., 1788a, 26.—This is clearly a composite species, containing primarily the orang-utan of to-day, the hairy woman of Bontius, and the chimpanzee. The interpretation occasionally made that the orang-utan of to-day dates from this entry is not free from objection (see 1760). The references are—

Homo sylvestris Edw. [1758], av. 5, p. 6, t. 213 [=orang-utan].

Orang-Utang. Camper, 1778, 8. Kort Bericht wegens de Ontleding van verschiedene Orang-Utang=(fide Cuv., 1829, 87) Orang Outang. Hab. Borneo.

Great Ape. Pen-
nant Synop. of
quadr. n. 64, p.
93.

Pongo. Buffon [1766],
Hist. nat., v. 14,
p. 43 [=chim-
panzee].

Homo sylvestris, Ou-
rang-Outang.
Bont. jav. 84, t.
84 [= *Homo*
trogloodytes
1758a.]

Homo sylvestris,
Orang-utang.
Tyson, 1699, 4.
f. 1. 2. Anat. of
Pigmy [=chim-
panzee].

Jocko. Buffon
[1766], Hist. nat.
v. 14, 43. T. 1 [=
chimpanzee].

1789: BUFFON, 1789,
Supplement, v.
7, x-xi, 1-29, pl.
1, (see our fig.
13) reverts to
his former
(1766) discus-
sion. This is
important in connection with the names "pongo" and "jocko."

p. x. Le singe indiqué (p. 11), comme étant peut-être [p. xi] une variété par laquelle l'espèce du *pongo* ou *grand orang-utang*, se rapprocherait du *mandril*, est le *choras* dont on pourra voir la description (page 43). Nous devons observer aussi que l'individu femelle, dont M. de Buffon rapporte des habitudes naturelles, d'après M. Vosmaer (page 23), est le même que celui dont il donne la description & l'histoire, d'après M. Allamand (page 15 du même article).—Note by de Lacépède.

p. 1. Addition à l'article des Orangs-outangs, v. xiv, page 43. Nous avons dit que les Orangs-outangs pouvoient former deux espèces; ce mot Indien qui signifie *homme sauvage*, est en effet un [vernacular] nom générique; & nous avons reconnu qu'il existe réellement & au moins deux espèces bien distinctes de ces animaux; la première à laquelle, [p. 2] d'après Battel, nous avons donné le nom *pongo*, & qui est bien

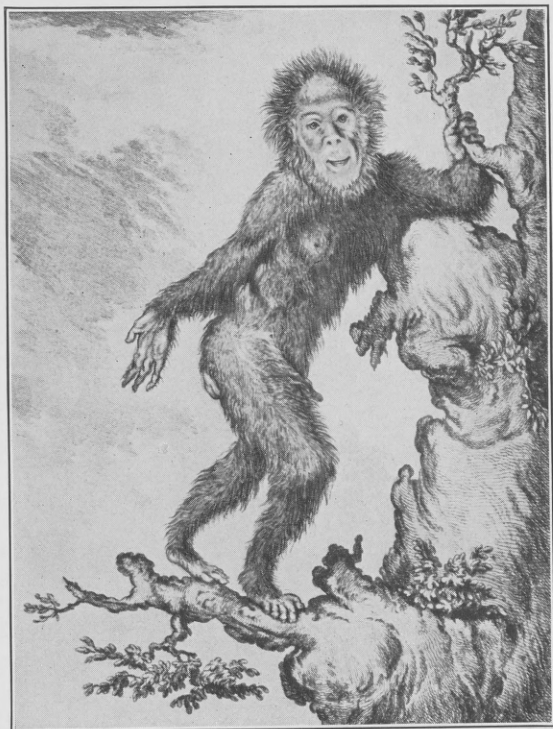


FIG. 13.—"Le Jocko^h ou Orang-Outang de la Petite Espèce"
Buffon 1789, v. 7, pl. 1. This is a red orang-utan and represents
the same specimen from which our fig. 15 was drawn

plus grande que la seconde espèce que nous avons nommée *jocko* d'après le même voyageur. . . . Le singe que j'avois vu vivant, & auquel j'avois cru devoir donner le nom de *jocko*, parce qu'il n'avoit que deux pieds & demi de hauteur, étoit un jeune pongo . . . mais ayant reçu depuis des grandes Indes un orang-outang bien différent du pongo, & auquel nous avons reconnu tous les caractères que les voyageurs donnent au *jocko*, nous pouvons assurer que ces deux dénominations de pongo & *jocko*, appartiennent à deux espèces réellement différentes . . . [p. 3] il est certain que la figure de Bontius [1718 = a pilose woman, *Homo iroglodytes*] est celle du grand orang-outang ou pongo adulte, & que celle que j'ai donné [1766, pl. 1] représente le même orang-outang ou pongo jeune.

- p. 4. . . . pongo ou grand orang-outang . . . cet animal ne paroît maintenant exister que dans quelques parties de l'Afrique, & des grandes îles à l'est de l'Inde.
- p. 9. M. Relian écrit [in a letter dated Jan. 15, 1770, to Allamand (p. 6)]. . . . M. Pallavicini, qui a été ici [Batavia] *sabandhaar*, en a amené deux [orang-outang] en vie . . . lorsqu'il partit pour l'Europe en 1759. . . .
- p. 10. Java . . . Borneo.
- p. 14. . . . il nous reste maintenant à parler du *jocko* ou petit orang-outang. Nous en donnons ici la figure, planche 1re . . . les principaux caractères par lesquels il diffère du pongo . . . le manque d'ongle au gros orteil, des pieds de derrière, la quantité & la couleur roussâtre du poil dont il est revêtu.
- p. 15. [M. Allamand says] "J'ai donné la figure d'un singe sans queue, ou orang-outang qui m'avait été envoyé de Batavia . . . Il me paroissoit différent de celui qui a été décrit par Tulpus [1641].
- p. 19. M. Vosmaer . . . en a publié une fort bonne description [of a specimen] . . . de Borneo (p. 17) . . . envoyée de Batavia au cap de Bonne-espérance . . . de-là elle est venue à la ménagerie de M. le prince d'Orange.
- p. 22. . . . je [Buffon] ne doute pas plus . . . que le nom *orang-outang* ne soit une dénomination générique qui comprend plusieurs espèces, telles que le pongo & le *jocko* . . .

Buffon's present (1789) *jocko* (see our figure 13) is a true orang-utan, distinct from his former (1766) *jocko* which he now recognizes as a young pongo. For purposes of formal nomenclature we accept the vernacular name *jocko* of 1789 as a dead homonym of *jocko* 1766.

- 1792:** KERR, 1792a, *Animal Kingdom* [a translation of Gmelin, 1788, with additions], possibly comes closer to modern nomenclature of genera, subgenera, species, and subspecies than does any other early author. The only difference in his text between his method and that of the International Code is one of punctuation, namely, he does not use the parentheses around the subgenus when writing the subgeneric name between the generic and specific names. In his systematic catalogue, inserted between pages 32 and 33, in dealing with subgenera, he cites the generic name once in the singular at the head of the list, cites the subgeneric name once in the plural at the head of each subgenus, repeats the subgeneric name in the singular in combination with the specific name but not with the generic name in his list of species. His index, pages 367-400, is remarkably detailed. Specific names are indexed both under the generic and the subgeneric names. Varietal names are indexed under the specific names, and entered separately

with cross references. From a standpoint of bookmaking and editing this is one of the most remarkable of all of the systematic works of zoology of the eighteenth century. We have no hesitation in accepting his names as available.

Homo.—KERR, 1792a, 44, mt. *sapiens*, with several varieties.

Homo troglodytes.—KERR, 1792a, 55, "What is said by Linnaeus of the *homo troglodytes* seems partly of fabulous origin, partly to refer to some monstrous or morbid individual of the human race, and partly to belong to the above species [*Simia troglodytes*] of ape. To the first source we must evidently ascribe what is reported of his faculties of speech, of thought, and of reason; the second supposition is clear from the synonymous name *kakurlacko*, which he has cited; and to the third the remainder of the description, and what is extracted from Bontius, may be referred. What our author has said of *Lucifer*, or men with tails, may likewise be considered as fabulous. [Footnote] This paragraph, which is a note in the edition by Dr. Gmelin, refers to the last Linnaean edition of the *Systema Naturae*.—T[ranslator]."

Simia troglodytes.—KERR, 1792a, 55; the chimpanzee, quotes *Satyrus indicus* Tulpus [1641], pl. 14; chimpanzee, Scotin, 1739, pl. 5; and Great ape, Pennant, n. 72.

Simia satyrus.—KERR, 1792a, 56; clearly the orang-outang of Borneo, quotes Hoppius, 1760, fig. 4; Edwards [1758], tab. 213; and Camper, 1788, p. 8. In addition to the true orang, he recognizes 2 varieties, namely:

Simia Satyrus Pongo KERR, 1792a, 56, of Java and Guinea, based on Sm. Buff.⁵ viii. 77, and Bontius [1718], tab. 84 [namely, *Homo sapiens*, see above]. The description is largely a verbatim translation of Buffon, 1766, p. 71.

Simia Satyrus Jocko KERR, 1792a, 56, fig. 4, based on Sm. Buff.⁵ viii. 86. tab. cclii; Cyolock De Visme, xiv. 73. tab. 3; and Tyson's [1699] pigmy, figs. 1, 2 [=chimpanzee]. Fig. 4 is a copy of pl. 1 Buffon, 1766; hence this subspecies *jocko*=*le jocko* 1766=the chimpanzee (see our fig. 9).

At first thought the varietal technical names seem somewhat disturbing, but it is possible to sink them into synonymy. The description of the variety *pongo* is largely a translation of *le pongo* Buffon, 1766, p. 71, and the name is hereby limited to *le pongo* 1766=the chimpanzee. Kerr's Fig. 4, of the variety *jocko*, is a reproduction of *le jocko*, pl. 1, Buffon, 1766, namely, the chimpanzee. Accordingly, both of these names are to be sunken as synonyms of *Simia satyrus* 1758a (=the chimpanzee); for *pongo* 1792, "the interior parts of Guinea" is hereby designated as type locality.

Simia sylvanus. Pigmy.—Kerr, 1792a, 58.

Simia inuus. Magot, Barbary ape.—Kerr, 1792a, 58.

1795: GEOFF. & CUV., 1795, *Magazin encyclop.*, v. 3, 451-463, in discussing the *Histoire naturelle des Orangs-Outangs*, recognizes various genera to which they give both vernacular (in caps) and Latin (in italics) generic names, with diagnoses and with lists of included species.

p. 461: ORANG. *Simia*; contains orang-outang, *le jocko*, *le gibbon*.

p. 461: SAPAJOU. *Callithrix*; contains les sapajous et sajouins de Buffon, except *Simia beelsebul* et *seniculus*.

p. 461: GUENON. *Cercopithecus*; contains *rolowai*, *diana*, etc., etc.

⁵ We have been unable to find "Sm. Buff."

- p. 462: *MACAQUE*. *Pithecus*; contains *Simia veter* (tsd. in 1894), *silenus*, *cynomolgus*, *sinica* (tsd. in 1913), etc. It is to be noticed that this is not *Pithecus* Cuv., 1800, type orang. This duplication of the name has produced considerable confusion.
- p. 462: *MAGOT*. *Cynocephalus*^{dh}; tat. *Simia cynocephalus* L. Contains also *Simia inuus*, cited as le "magot."
- p. 462: *BABOUIN*. *Papio*; contains mandrils, choras, maimon, mormon; also le pongo de Batavia.
- p. 463: *ALOUATTE*. *Cebus*; contains *Simia beelzebul* et *seniculus* L.
- 1798:** CUVIER, An 6 [1798], 93-102, divides "Les singes *Simia*" into groups, namely: *a*, "Les singes proprement dits"; *b*, les sapajous; *c*, les guenons; *d*, les macaques; *e*, les babouins; *f*, les alouattes.

Under *a* he includes 4 species:

1. L'orang-outang, *Simia satyrus*, homme sauvage, of Indes orientales, "il manque d'ongles aux pouces de derrière," pp. 95-96.
2. Le gibbon, *Simia lar*, p. 96.
3. Le wouwou, *Simia cinerea* of Batavia, p. 96.
4. Le chimpansé, *Simia troglodytes*, p. 96 "que quelques-uns ont aussi nommé orang-outang," of Africa, Jocko. Buff.

Under *d* he includes—

21. Le magot, *Simia inuus*, p. 99.

Under *e* he includes 2 species:

22. Le mandrill, *Simia maimon*, of Guinée, p. 99.
23. Le pongo, *Simia pongo*, of Borneo, p. 99.—Because of prior publication of *Simia satyrus pongo* 1792, *Simia pongo* 1798 is a still-born (primary) homonym.

Pithecus Cuv., 1798, 95, is cited by Elliot, 1913c, 181.

While this publication clearly differentiates the chimpanzee from the orang-utan, we find nothing in it which seems definitely to fix the type species of *Simia*.

- 1799:** LACÉPÈDE, 1799, Tableau, 1-18, (transl., 1803, AZZ, 199 ff.), gives a key, with diagnoses, to the genera of mammals, and he cites a single species with each genus. In case of new generic names, this single species is to be accepted as the monotype (Art. 30c). In case of earlier genera the single species cited is to be considered as a typical example but not as definite designation of genotype (cf. Art. 30g).

This Tableau is cited by various authors as 1795, 1797, and 1799. The copy we have consulted is that of 1799, according to Dr. C. W. Richmond.

The generic names of importance in our discussion are—

1. Singe. *Simia*, p. 3. Quatre dents incisives à chaque mâchoire; angle facial de 65 degrés; point d'abajoues ni de queue. Singe satyre.—*Simia satyrus*. (1803, 199 "Orang Utang, *Simia satyrus*".)—If this refers to *Satyrus indicus* (see Linn., 1758a, 25), this is the chimpanzee.
2. Guenon. *Cercopithecus*, p. 4. Example cited is *Cercopithecus nasica*.
6. Macaque. *Macaca* [n. g.], p. 4. Quatre dents incisives à chaque mâchoire; angle facial de 45 degrés; fesses calleuses. Macaque magot.—*Macaca inuus*.
7. Pongo. *Pongo* [n. g.], p. 4 (1803, 199). Quatre dents incisives à chaque mâchoire; angle facial de 30 degrés; abajoues; point de queue; fesses calleuses. Pongo bornéo.—*Pongo borneo*.

The question arises whether the citation of the magot (*Simia inuus* 1766 [= *S. sylvanus* 1758]) as a special monotypic genus eliminates *sylvanus* from consideration of this species as type of *Simia*, thus making

satyrus the type; despite the temptation to construe the case in this sense, we do not feel justified in yielding to the temptation, since *S. sylvanus* is not mentioned. It is, however, to be noted that *Simia inuus* [= *sylvanus* 1758], now recognized as the Barbary ape, is the monotype of *Macaca*.

Further, the Borneo orang-utan now appears as a special monotypic genus, rather unfortunately under the generic name *Pongo*.

It is to be noticed that the facial angle for *Pongo* is given as 30°, that of *Simia* as 65°. If this facial angle is to be given the importance attached to it by several authors, this character would tend to indicate that *Simia satyrus* of Lacépède was the chimpanzee.

1799: AUDEBERT, An 8, 1799, Hist. nat. Singes et Makis, endeavors to clear up the confusion between "pongo" and "jocko"—

Le *Pongo*.—AUDEBERT, 1799, 15–17, fig. 1 (see our fig. 14): Cites: *Simia troglodites* Gmel.; *Homo sylvestris* Tyson; Le *Jocko* Buffon; Le *Pongo* Buffon, Supplém., v. 7, p. 2; Chimpanzee, Angola vernacular name. "Buffon, dans son Histoire naturelle, avait d'abord donné le nom de Jocko à cet animal, mais dans ses *Suppléments* il a publié le véritable Jocko de l'île de Bornéo, décrit et figuré par Vosmaer, et a rendu à l'animal dont il est ici question le nom de Pongo." . . . "Il résulte des recherches faites à ce sujet, 1°. que la figure de Bontius n'appartient ni à l'un ni à l'autre de ces deux animaux; celle-ci étant une espèce de Chacrelas ou un monstre dont le pareil ne s'est pas offert depuis; 2°. que la figure de Tulpius appartient au Jocko (*simia satyrus* L.); [ce qu'on reconnaît à l'élévation du crâne, aux oreilles qui sont beaucoup moins grandes que dans le Pongo, au front dénué de poil, et à l'absence des ongles aux pouces des pieds]; 3°. que la figure donnée par Edwards est encore le Jocko, ainsi que le prouvent la nudité du front et [p. 16] la couleur ferrugineuse du poil; 4°. que l'*homo sylvestris* ou Pygmée de Tyson, est certainement le Pongo (*simia troglodites* L. G.); 5°. que la figure de Buffon a été dessinée d'après le même individu dont je présente ici une figure nouvelle; mais cet auteur avoue lui-même qu'elle n'est pas exacte: on voit, en effet, que le dessinateur s'est efforcé d'en faire une d'homme. . . . Le Pongo habite l'Afrique: on le trouve à Angola, à la Sierra-Leona, . . ." Cuvier, 1829, Règ. anim., v. 1, 89 (as so. le chimpansé).

Le *Jocko*.—AUDEBERT, 1799, 18–20, fig. 2 (see our fig. 15): Cites: *Simia satyrus* Gmel.; *Satyrus indicus* Tulpius; The man of the woods, Edwards; Le *Jocko* Buffon, Supplém.; L'Orang-outang Vosmaer.—*Voulock*, Bengal vernacular name. . . . "Le Jocko habite Bornéo . . . Tout le poil . . . est long et de couleur ferrugineuse."

Le singe de Wurmb.—AUDEBERT, 1799, 21–24; de l'île de Bornéo.

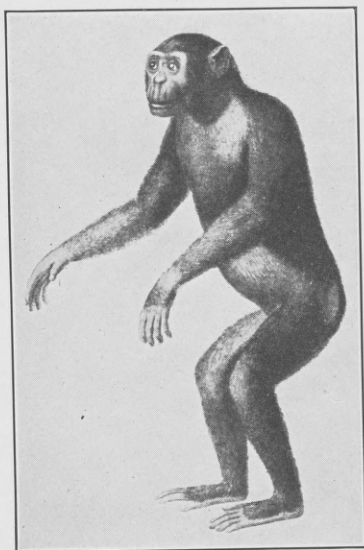


FIG. 14.—Le Pongo, *Simia troglodites*.—After Audebert, 1799, pl. 1. Copied later as pl. 1 C** in Goldfuss' Schreber, 1817, Theil 5 (1), Heft 65

- 1799: *Simia troglodytes*.^{dh}—BECHSTEIN, 1799, 144 (chimpanzee).
 1799: *Simia satyrus*.—BECHSTEIN, 1799, 175 (orang-outang).
 1799: *Simia nigra* BECHSTEIN, 1799, 217, "die schwarze Meerkatze" [i. e., not the chimpanzee, *Troglodytes niger*], Orange River. [Cf. 1812.]
- 1800: CUVIER, 1800, An 8, Leçons, 376, refers to Pongo, but not as a generic name. In his table of genera he cites "*Pithecus*" for the "Orangs;" judged from the table alone, this generic name is based on a vernacular name, hence not indicated (See Opinion 1, Internat. Comm.), but in his text he gives characters for the orangs; accordingly, the name *Pithecus* 1800 appears to be published with indication, but it falls as a dead homonym of *Pithecus* 1795, *tsd. veter* (by Thomas, 1894), *sinica* (by Elliot, 1913).
- 1802: TURTON'S, 1802, General System, v. 1, is based on Gmelin, 1788. Of the species which are of interest in the present discussion he cites—
Homo.—TURTON, 1802, 9, mt. *sapiens*.
Simia troglodytes.—TURTON, 1802, 10. Angola Ape, i. e., chimpanzee.
Simia satyrus.—TURTON, 1802, 10. Rusty brown Orang-outang of Borneo
 2. A variety from Java and Guinea. [Vernacular name] Pongo [= chimpanzee + orang-outang]. 3. A small variety, 2½ ft. high (i. e., jocko o Buffon [chimpanzee]).
Simia sylvanus.—TURTON, 1802, 11. Africa and Ceylon. Pigmy. [cf. 1758].
Simia inuus.—TURTON, 1802, 11. Africa. Magot.
- 1804: DESMAREST, 1804, Nouv. Dict. Hist. nat., v. 24 (6), 7, recognizes SIMIAE as of family rank, to contain 9 genera. He does not use *Simia* as a genus although he quotes the binomials of *Simia* under the various genera which he adopts. As he places the chimpanzee in *Pithecus* Cuv., and the Barbary ape in *Cynocephalus*^{dh}, this is virtually a division of the subgenus *Simia* 1758 into *Pithecus* and *Cynocephalus*; *Cynocephalus* is monotypic [*inuus*=*sylvanus*], but it is not a renaming of (*Simia*); *Pithecus* contains the only other original species of (*Simia*), but is not a renaming of (*Simia*). Accordingly, it is not obvious that Desmarest determines the type of (*Simia*). He adopts—
Pithecus Cuv., 1800, for the orangs, *sensu lato*, with 5 species, including—
 1. *Simia satyrus* Linn., for the red orang-utang, or small jocko;
 3. *Simia troglodytes* Linn., for the chimpanzee or jocko.
 "Cynocephalus^h Nob."—DESMAREST, 1804, 8, mt. "Le magot (*simia inuus* Linn.)" [=the Barbary ape, i. e., *Simia sylvanus* Linn., 1758].
Pongo Lacépède.—DESMAREST, 1804, 8, quotes only—
Pongo borneo Lacépède.—DESMAREST, 1804, 8, "Singe de Wurmb, ou pongo de Bornéo."
- 1806: DUMÉRIL, 1806a, Zool. analyt., pp. 8–9, recognizes 5 species of Orang, genus *Pithecus* [1800] of the Old World and 1 species of *Pongo* [1799] from Borneo, but does not give details.
- 1808: TIEDEMANN, 1808, Zool., 317–329, recognizes—
 SIMIAE, p. 317, as a family; with various genera, including—
Pithecus, p. 317, for the orangs;
P. satyrus, p. 318, for the East Indian or red orang-utan;
P. troglodytes, p. 318, for the African Orang, Jocko, or Chimpanzee;
Pongo, 329, tat. mt. *Pongo wurmbii*, syn. *Simia pongo*, for the Pongo of Borneo.

1811: ILLIGER, 1811, *Prodromus*, retains—

p. 67, *Simia* for *Simia troglodytes* and *S. satyrus* of Gmelin, 1788a; does not mention *sylvanus*.

p. 69, *Pongo* 1799 and *Macaca* 1799 are sunken as synonyms of *Cynocephalus* Brisson-Lacépède-Cuvier-Duméril.

1812: GEOFFROY, 1812, *AMHnParis*, v. 19, 86–122, in an extensive consideration of certain *Primates*, clearly separates generically the two original (1758) species of the Linnaean subgenus (*Simia*), but, while this is obviously a division of (*Simia*), in neither instance is the genus he adopts a direct renaming of (*Simia*); accordingly, he does not establish the type of (*Simia*) by renaming. He recognizes—

1. *Troglodytes*^{d h} GEOFF., 1812, 87, tat. *Simia troglodytes* "Linn." (as *Troglodytes niger*^{d h}), i. e., the Angola Chimpanzee. Not *Troglodytes* Vieill., 1806, bird. Not *Simia nigra* Bechstein, 1799.

2. *Pithecus*^h.—GEOFF., 1812, 87–89, the "Orang[s]," to include—

(1) Orang-outang. *Pithecus satyrus* (Linn., 1766), of Borneo.

(2) Gibbon. *Pithecus lar* (Linn., 1758).

(3) Orang varié. *Pithecus variegatus* GEOFF., 1812, 88, of Malacca, i. e., a gibbon.

(4) Wouwou. *Pithecus leuciscus* (Schreber).

3. *Pongo*.—GEOFF., 1812, 89, mt. *Pongo vurm-bii*^e Tiedemann, 1808, of Borneo [=orang-outang].

[9]. *Inuus* GEOFF., 1812, 100, tat. *Simia inuus* Linn., syn. *S. silvanus* Linn., i. e., Barbary ape (as *I. ecaudatus*).

1812: BUFFON, 1812 (transl. by Smellie), v. 10, p. 37, "The orang-outangs or the pongo or jocko." Considers "the great orang-outang, or pongo," differs chiefly in size from the "jocko." "I persist in thinking that they are the same species." Pongo in India; Jocko in Africa.

pl. 350 Jocko [hands to knees] [same as Buffon, 1766, pl. 1].

pl. 351 "Young Jocko or Orang-Outang" [hands to knees].

pl. 352 "Small kind of Jocko" [hands about to knees] [from Sonnini's edition, from specimen in Paris Museum, cf. also Audebert, 1799, fig. 2].

p. 90. The Pigmy—*Simia sylvanus*.

22266°—27—5

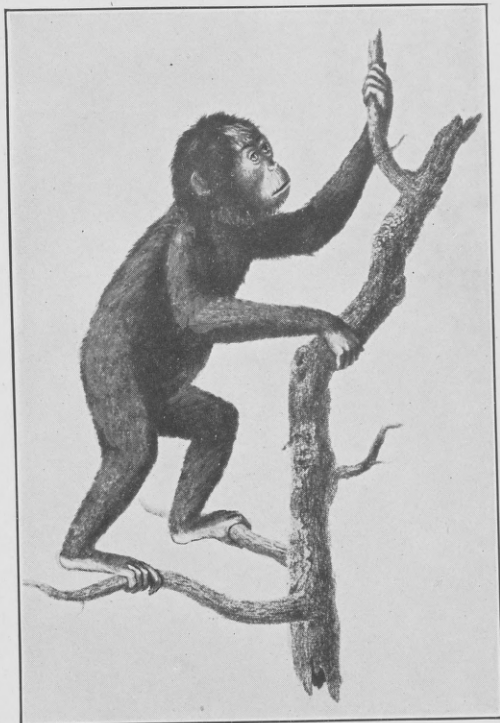


FIG. 15.—Le Jocko, *Simia satyrus*.—After Audebert, 1799, pl. 2. This picture is drawn from the same specimen as our fig. 13 (of Buffon, 1789, v. 7, pl. 1)

1813: FISCHER, 1813, *Zoognosia*, v. 2, gives a remarkable discussion of mammals with bibliography, quotations, etc. Of the genera and species which interest us in the present discussion he cites—

- p. 517. *Simia* Linn.—FISCHER, 1813, v. 2, 517 (syn. *Pithecus* Cuv.-Latr.), contains—
- p. 518. *Simia troglodytes* of Gmel., 1788a, 26. Der braune Orang oder der Orang-Shimpanse. Orang chimpanzé, *Pithecus troglodytes* of Latr., 277. *Satyru indicus* Tulpius, 1641, pl. 14. Le Pongo Audebert, 1797, fig. 1. Angola, Congo.
- p. 519. *Simia satyrus* of Gmel., 1788a, 26. Der rothe Orang, oder der Orang-Outang. L'orang roux, *Pithecus satyrus* Latr., 276. Tyson's, 1699, Pigmy. Camper's, 1778, Orang-Utang. Vosmaer's, 1778, Orang-Outang. Tilesius', 1813, Orang-Outang von Borneo, *Simia satyrus*. Le Jocko of Audebert, 1799, fig. 2. Borneo, Java.
- p. 538. *Cynocephalus*^h Cuv. Syn. *Macaca* Lacépède, *Cercopithecus* Brisson-Erxleben.
- p. 539. *Cynocephalus*^h *inuus*, syn. *Simia sylvanus* et *inuus*.
- p. 547. *Lophotus* n. g., Fischer, 1813, v. 2, p. 547, *Pongo* Lacépède renamed; hence type is *borneo*, also mt.; p. 548, "Nomini *Pongo*, acceptionis ambiguae, id *Lophoti* substitui, propter ejus cristam insignem capitis, a λοφωτός, cristatus."
- p. 548. *Lophotus wurmbii*, syn. *Pongo borneo* Lacépède, 1798. Borneo.
- 1816:** OKEN, 1816, *Lehrb.*, 1223-1232, gives an extensive classification of the primates, introducing a number of new names. Four of these, accepted as of generic value by several authors, are of importance in connection with *Simia*. Oken accepts *Simia* as a genus (Gattung) and subdivides it into—
1. *Sylvanus* OKEN, 1816, 1223, syn. *Inuus*, mt. "Art. *Sylvanus*, *Inuus* et *Sylvanus*, I. ecaudat., S. I., S., Magot, gem. S."—A dead homonym, preoccupied by *Sylvanus* Latr., 1807, coleopteron.
 2. *Satyrus* OKEN, 1816, 1225, *Hylobates* renamed, hence type *lar*.
 3. *Faunus* OKEN, 1816, 1227, syns.: *Simia*, *Pithecus* (pars), mt. "1. Art. *F. indicus*, *rufus*, [Simia], [Pithecus] Satyr., S. *Troglodytes*, Agrias, eigentlicher Jocko, *Satyrus indicus*, Man of the woods, Vulock, Golok, Orang-utang, Oran-Utan, indisch. F."—Description applies clearly to the orang-outang.—Palmer, 1904a, 284, type fixed as *Faunus indicus* = *Simia satyrus*, from Borneo.—Elliot, 1913a, xxxiii, type fixed as *Faunus indicus* = *Simia pygmaea*.—A dead homonym, not *Faunus* Montf., 1810, mollusk.
 4. *Pan* OKEN, 1816, 1230, *Troglodytes* 1812 renamed, hence type *T. niger*; also mt. *P. africanus* syn. *T. niger*.—Palmer, 1904a, 508 (apparently admits name).—Elliot, 1913a, xxxiv; 1913c, 227 (adopted as valid name for the chimpanzees).
- p. 1222. *Cynocephalus ecaudatus*, Ungeschwaenzter Babian.—OKEN, 1816, L, 1222, as "Art. 1, under Pongo of Borneo.

If Oken's names be admitted as available under the rules, it is to be noticed that none of his subgeneric names is identical with the subgeneric name *Simia*, and that it is only with *Faunus* (type the orang-utan) that he quotes *Simia* as a synonym. Accordingly, *Faunus* is *Simia* renamed and from Oken's viewpoint the orang-utan would become the type of *Simia* under Art. 30f.

Matschie, 1904, is the only author whom we have found to reject Oken's, 1816, names. He considers Oken's nomenclature trinomial. This view seems to receive support in Oken's citation under *Faunus*, namely, "*F. indicus*, *rufus*."—Rothschild, 1904, PZSL, 419, admits Oken's nomenclature.

From our viewpoint the nomenclature used by Oken, 1816, pp. 1223-1232, is not in harmony with International Rules, is neither consistently binary nor consistently binomial, hence is not available under the Law of Priority. A cursory glance at his classification seems to negative this interpretation; but when his groups are tabulated it is seen that while he divides genera into subgenera, subgenera into species, and species into various subdivisions (some difficult of interpretation), his method of writing binomials (subgenera and species) and his confusion in citing *Simia* and "Simius" as generic name in various places are not in harmony with the customs of Linné, with the custom of Oken's day, or with the International Rules; it is a nomenclature *sui generis*, which in many instances is difficult of interpretation, and in the interest of science it should not be recognized.

Accordingly, we are unable to accept any of these names, and therefore we can not follow Elliot, 1913, and Allen, 1925, in recognizing *Pan* (as of the date 1816) as nomenclatorially available or valid for the chimpanzee, unless the International Commission rules that Oken's names are available under the code.

For authors who may differ with us in this interpretation, the orang-utan obviously becomes the genotype of *Simia* of Oken, 1816.

1820: GOLDFUSS, 1820, Handb., recognizes the following—

p. 480: *Pithecus*^b Geoff. with *P. lar*; *P. satyrus*, Asiatic; *P. troglodytes*, African.

p. 480: *Inuus* Geoff. Magot. *S. silvanus*^e. Gemeiner Affe.

p. 479: *Pongo*. *P. wurmbii*.

p. 479: *Silenus* Goldfuss, 1820, 479, tat. *S. silenus* Schreber.

1820: LEACH, 1820, Thomson's Ann. Philos., v. 16 (xcii), Aug., 104 (reviewing

Journal de Physique, date not given), cites—

Mimetes^b Leach, "type" *Simia troglodytes*.

Pithecus^b.—"Type" *Simia satyrus*, orang-utan.

1820: DESMAREST, 1820, Mammalogy, v. 1, 63, 67.

Troglodytes niger, p. 49. Troglodyte Chimpanzé as vernacular name.

Pithecus satyrus, p. 50. Orang roux. *Pithecus* divided into two subgenera,

"Orangs proprement dits" [= *Pithecus* ''] and "Gibbons=*hylobates*."

Pongo wurmbii, p. 52. Of Borneo.

"*Macacus* "Lacep.," for *Macaca* 1797; 2 subg., p. 63, "Macaques proprement dits. Une queue plus ou moins longue," as *silenus*, *sinicus*, etc., and p. 65, Magot [as vernacular name] "Queue remplacée par un simple tubercule," 1 sp. *M. inuus*, s. *Simia pithecus*, s. *S. silvanus*.

1825: Orang [vernacular, not Latin] CUVIER, 1825, Dict. Sci. nat., v. 36, 275, tod. l'orang-outang. "Ce nom [Orang], qui, chez les Malais, signifie homme, a été tiré du mot orang-outang (homme des bois, homme sauvage), pour en faire le nom d'un genre, dont l'espèce de l'orang-outang peut être considérée comme le type, genre qui n'est pas le même dans tous les ouvrages d'histoire naturelle. Les uns se bornent à y comprendre l'orang-outang; d'autres y ajoutent le chimpanzé, et même plusieurs espèces qui en ont été séparés sous les noms de gibbons ou d'*hylobates*." Contains—

p. 281: L'Orang-outang, *Simia satyrus* Linn.

p. 285: Le Chimpensé, *Simia troglodytes* Linn.

Here there is a definite designation of the "orang-outang, *Simia satyrus* Linn., "as type" of the vernacular genus Orang. Unfortunately, this generic name is used as a vernacular, not as a Latin scientific name, and is not available, as of this date, as a generic name in nomenclature.

1826: SCHREBER, 1826, Die Saeugthiere, Erster Theil, 54-65, refers to *Simia satyrus*, which is a composite species, divided into—

- A. Der kleinere (*S. pygmaeus* Hoppius, 1760, fig. 4 [=orang-outang]; *S. satyrus* Linn., 1758a, 25 and Hoppius, 1760, p. 69, fig. 3 [=chimpanzee]; *Satyrus indicus* Tulp. [=chimpanzee]; Tyson's pygmy [=chimpanzee]; Scotin's chimpanzee. Jocko, Enjocko, in Kongo.)
- B. Der grössere (cites "*Homo silvestris* Bontius, p. 84?," i. e., *Homo sapiens*). The plates (cf. above, 1775) give both oranges and chimpanzees, and if these are only in elaboration of his discussion pp. 54-65, the names cited on the plates might be interpreted as simply of bibliographic value.
- 1827: LESSON, 1827, Manuel de Mammalogie. Not available to us, but Palmer, 1904a, 396, Elliot, 1913a, xxxiv, and Allen, 1916, 50, quote—
Magus Lesson, 1827, 43; 2 species, *sylvanus* and *maurus*.—Lesson, 1840, transferred *maurus* to *Rhesus*, thus leaving *Magus* with *sylvanus* as mt., cf. Allen, 1916, 50.—Elliot, 1913a, xxxiv, designated *maurus* as type.
- 1827: GRIFFITH'S Cuvier, 1827, Animal Kingdom, v. 5, divides *Simia* into many subgenera, citing species by Kerr's (1792) method. He refers to—
Simia (Trogodytes) niger, p. 4, of Africa, cites Audebert, 1797, pl. 1.
Simia (Pithecus) satyrus, p. 5, of Asia, orang-outang, cites Audebert, 1797, pl. 2.
Simia (Pithecus) wurmbii, p. 5, of Borneo, black pongo.
- 1828: BILLBERG, 1828, Syn. Faunae Scandinaviae, v. 1, Mamm., Conspectus A. Not available to us. Elliot, 1913a, xxxv, quotes *Macrobates*, new name for *Pongo*.
- 1828: BROOKES, 1828, Cat. Anat. and Zool. Mus. of Joshua Brookes, Lond., "a sales catalogue" ["Eighth days sale, Wed., July 23, 1828, at twelve o'clock"]. Opinion will inevitably differ as to the availability of the names used in this catalogue. Our viewpoint is that it was undoubtedly printed and distributed, but admittedly as a "sales catalogue" and not as a scientific record; accordingly, unless the International Commission finds that these names come under the Rules, we reject them, as of this (1828) date. The one contained name of interest in the present discussion is—
p. 48: *Theranthropus* [new name], mt. *niger*, the black chimpanzee.
- 1828: BURNETT, 1828, Quart. Journ. Sci., Lit. & Art, v. 26, 307, cites—
"*Pithes*?"; The Pigmy=*sylvanus*, only species mentioned, hence monotype.
- 1829: GEOFFROY, 1829, Cours, 7e Leçon, cites—
p. 16: Premier genre TROGLODYTÉ [not as Latin name]. *Trogodytes*; mt. the chimpanze (p. 8=pongo), p. 21. *T. niger*; pongo Audebert.
p. 21: Deuxième genre ORANG [not as Latin name]. *Pithecus* 1800. Orang-outang; *Simia satyrus* L.; Jocko of Audebert.
p. 21 (8e Leçon): *Macacus inuus*, le magot.
- 1829: CUVIER, 1829a, Règne animal, v. 1, pp. 86-106, recognizes a number of subgenera of *Simia*, and as he places the two original species of the subgenus (*Simia*, 1758) in two distinct subgenera (the chimpanzee in *Simia* under "Les Singes proprement dits" (p. 87), and the Barbary ape ("Le Magot commun. *S. sylvanus*, *pithecus*, et *inuus*") as monotype of the subgenus *Inuus*), this disposition appears to be an automatic determination of the type of the subgenus (*Simia*, 1758) in the sense that *S. sylvanus* is eliminated from his consideration as type of *S. (Simia)*. *Simia* as thus restricted is given the vernacular name of "Les Orangs (*Simia* Erxl. *Pithecus* Geoffr. Vulg. Hommes sauvages)," of which Cuvier here recognizes two species, namely:

- p. 87. (a) The orang-utan, *Simia* [(*Simia*)] *satyrus* Linn., "Ce sont les orangs proprement dits."—While he is undoubtedly discussing the true orang-utan here, as shown by the anatomical details ("Les uns ont les bras assez longs pour atteindre à terre quand ils sont debout, et les jambes au contraire très courtes"), he quotes [*Simia troglodyta bontii* Tulpius, 1760, fig. 1, among his references and refers to the fact that Linné took this latter as "le type de son troglodyte" [see *Troglodytae*, 1758].
- p. 89. (b) The chimpanzee, *Simia* [(*Simia*)] *troglodytes* Linn. A true chimpanzee, as is seen from the following: "Dans les autres Orangs, les bras ne descendent que jusqu'aux genoux. Ils n'ont point de front, et leur crâne fuit immédiatement derrière la crête des sourcils. On pourrait leur réserver le nom de Chimpanzés," and also from his references to Tulpius and to Tyson.
- p. 96. *Simia* (*Inuus*) *silvanus* L.—Cuv., 1829, 96.
From this date on for many years the Linnaean name *troglodytes* is used more or less generally for the chimpanzee, which also appears under various other specific names, and the Linnaean name *satyrus* is rather generally used for the Malayan orang-utan.
- 1831:** VOIGT's (Cuvier's), *Das Thierreich*, v. 1, 73 ff., treatment of *Simia* appears not to have been considered by recent authors. He divides *Simia* into 16 "Gruppen" [=subgenera], including—
1. *Pithecus*^b Geoff., Orang, *S. satyrus* L., Der eigentliche Orang-Utang.
 2. *Chimpansee*, p. 76, mt. *S. troglodytes* Blumenb., Der Schimpansee (cites Tulpius and Edwards). This name is printed in the same kind of fat caps as are the other group names, 1. *Pithecus*, 3. *Hylobates*, 4. *Cerco-pithecus*, 7. *Inuus*, etc. If any of Voigt's names (cf. *Mandrill*, *Saimiri*) are granted availability, as various authors admit at present, there is no escape from interpreting *Chimpansee* as a properly published sub-generic name.
 7. *Inuus* Cuv.—VOIGT, 1831, 86, cites only *Simia* (*Inuus*) "*silvanus* L. Der gemeine Affe. (Syns. *Pithecus* und *Inuus* L.)."
- Here, again, the original subgenus (*Simia*, 1758) is subdivided into two monotypic subgenera (*Chimpansee* and *Inuus*); although he cites Tulpius under *Chimpansee*, he confuses the specific name *satyrus*; a difference of opinion might possibly exist as to whether a type is ["rigidly construed"] designated for (*Simia*) thereby. As Tulpius is basis for *satyrus* 1758, syn. *troglodytes*^b 1779, we would be willing to accept Voigt's action as designation of genotype, but will not insist upon this interpretation.
- 1832:** KRUEGER, 1832, *Handb. d. Naturg.*, v. 1, *Das Thierreich*. Three editions are cited in the 1832 edition, which is the only one at our disposal. From the following entries it is seen that there is considerable nomenclatorial confusion from our present-day viewpoint:
- p. 40: No. 1. *Simia troglodytes*, syn. *Homo sylvestris*. Der Orang-Utang, Waldmensch, Golack, Pongo. Red-brown hair. Borneo.
 - p. 41: No. 2. *Troglodytes niger*, syn. *Tr. africanus*. Schimpanse, afrikanischer Waldmensch, afrikanischer Pongo. Long black hair; 13 ribs. Africa.
 - p. 41: No. 3. *Simia satyrus*, syn. *Satyrus indicus*. Jocko, Engoeko, Schimpanse, Orang-Utang. Red-brown color. Borneo.
 - p. 43: No. 8. *Cynocephalus ecaudatus*. Ungeschwaenzter Pavian, Pongo. Borneo.
 - p. 43: No. 9. *Simia sylvanus*, syns. *Inuus ecaudatus*, *Cercocebus sylvanus*. Gemeiner Affe, tuerkischer Affe. Ostindien, Arabien, Africa.
 - p. 45: No. 10. *Simia inuus*, syn. *Inuus ecaudatus*. Grosse Affe, Magot, Hundskopf, Waldteufel. Same localities as *S. sylvanus*; also Gibraltar.

1834: MILNE-EDWARDS, 1834, *Elém. zool.*, 269, states: "... les singes anthropomorphes, sont complètement dépourvus de queue, et forment deux genres bien distincts, les Orangs et les Gibbons.

"Genre orang" (*Simia*).

Orang-outang, *Simia satyrus*. Inde, Java, Malacca, Borneo.

Chimpanzé, troglodyte noir, pongo, jocko, Guinée, Congo.

Obviously the "deux genres . . . les Orangs et les Gibbons" are vernacular, not Latin, genera.

1836: OWEN, 1836, PZSL, restricted *Simia* to the Orangs as of Erxl., 1777, syn. *Pithecus*^h Geoff. He rejects *Simia satyrus* as a synonym because he alleges that this name has been used indiscriminately for the young of two species of large orangs, namely, *Simia wurmbii*, of Borneo and *Simia abelii*, of Sumatra. *Troglodytes*^d *niger* is adopted (p. 94) for the chimpanzee.

1838: BLAINVILLE, 1838, *Ann. d'Anat. et Physiol., Par.*, v. 2, 360 (review in 1839, *Echo du Monde Savant, Par.*, v. 6 (402), Jan. 9, 20) says—

p. 360: "Les uns (*Brachiopithecus*, orangs-outangs et gibbons) appartiennent presque exclusivement à l'Asie insulaire." Status of name is subject to difference of opinion; it can be rejected, as of this date, on basis of Opinion 1, International Commission. In order, however, definitely to sink the *Brachiopithecus* in synonymy, we designate the gibbons as Blainville's type, thus making the name a synonym of *Hylobates*.

p. 360: "aucune n'a été observée en Afrique, où vit le champanzé (*Anthropopithecus troglodytes*).

p. 361: *Simia inuus* to *Inuus*.

1839: SÉNÉCHAL, 1839, *Diet. pittoresque Hist. nat.*, v. 8 (2), 428:

Anthropopithecus, p. 428, for the chimpanzé; only vernacular name is cited.

Brachiopithecus, p. 428, for orang and gibbon; only the vernacular names are cited; tpd. the gibbon. See Opinion 1 and under 1838.

1840: WAGNER, 1840, *Die Saeugthiere*, 1-65, adopts *Simiae* as an order. He also recognizes—

"I. *Simia*. Orangaffe," as a genus (p. 24), with 2 subgenera—

a. *Troglodytes* (p. 30), tat. *Simia troglodytes* Blumenb., for the chimpanzee.

b. *Pithecus* (p. 40), for the Malayan orangs, with *Simia satyrus* Linn. for the Orang-Utang, s. l.; but he includes Bontius p. 84 [= *Homo sapiens*, see above, *troglodytes* 1758] in the literature; with subspecies—

β. *Simia wurmbii* Fisch. (syn. *S. morio*), the Borneo Pongo (p. 56), and

γ. *Simia abelii*, the Sumatran Pongo (p. 57).

V. *Inuus*. Makako.—WAGN., 1840, 134, divided into 3 subgenera—

a. *Cercocebus*.

b. *Maimon* Wagn., 1840, 141, tsd. *erythraeus*, so. *rhesus*, fide Allen, 1916, 50.

c. *Inuus* (p. 149).—Contains only I. *ecaudatus*=*Simia sylvanus* 1758.

Here there is undoubtedly an automatic designation (Opinion 6) of type of *S. (Simia)* 1758, for *Simia* of Wagner is clearly confined to *S. (Simia)* 1758, and one of the two original species, *S. sylvanus*, is transferred to *Inuus*, thus leaving the original *S. (Simia)* as monotypic. There might, however, be two divergent interpretations as to whether Wagner has automatically designated the chimpanzee or the orang-utan as type: (a) One view would be that it is the chimpanzee, since *S.*

satyrus 1758 is the chimpanzee, and *S. satyrus* of Wagner as the orang-utan is an error of determination; (b) the other view is that Wagner's retention of the name *S. satyrus* for the orang-utan makes that the type. Accordingly, under Art. 30g, all that can be deduced is that Wagner's action, "rigidly construed," is in the sense of excluding *S. sylvanus* as type.

1840: LESSON, 1840, *Species*, uses a somewhat peculiar nomenclature in that he divides genera into subgenera, subgenera into subgroups (which he names), and these latter into species. Mammalogists usually attribute to his sub-subgenera nomenclatorial status as if they were subgenera. Among the genera and species he cites are—

p. 36: *Troglodytes*, syns. *Pithecus* Cuvier, *Anthropithecus*^m Blainv., *Simia* L.

p. 37: *Troglodytes niger*. Chimpanzee. Angola.

p. 39: *Satyrus* s. *Pithecus*, s. *Simia* L.

p. 40: *Satyrus rufus* as only species cited, but (p. 45) *Simia morio* as variety. Quotes (p. 42) *Simia pygmaeus* 1760, *Simia orang-outang* Klein, Quad., 86, and (p. 46) *Simia pongo* Fischer, etc., as synonyms.

p. 88: *Macacus* (*Inuus*) *pithecus* Lesson, 1840, 99, *Simia sylvanus* L. re-named.

1842: GLOGER, 1842 (usually given as 1841; our copy is dated 1842, but preface is dated Oct. 17, 1841), cites—

p. 34: *Hylanthropus* [n. g., mt.] *troglodytes*, for the "schimpanseh" of Congo and Guinea.

p. 34: *Simia satyrus*, for the Malayan orang-utan.

p. 35: *Inuus ecaudatus*.

p. 35: *Salmacis* [new; *Macacus* renamed], cites only *S. nemestrina*, *S. aethiops*.

1842: LESSON, 1842, *Nouveau tableau*, again follows his sub-subgenera system. His classification of the species now under consideration is—

p. 2: 1. Fam. HOMMIDEAE.

1. *Homo* Linn.

2. Fam. ANTHROPOMORPHEAE.

2. *Troglodytes* Geoff. *Troglodytes niger*. Guinée et Congo.

3. *Satyrus* Lesson, 1840. *Satyrus rufus* Bornéo et Sumatra.

p. 2: 3. Fam. SIMIADEAE.

p. 2: 1. Subf. PITHECIAE. Ancien Continent.

p. 5: 10. *Macacus* Lac. Divided into 3 sub-subgenera: A, *Cercocebus*; B, *Silenus*; C, *Rhesus*.

p. 5: 11. *Inuus* Geoff. [*Magus* Less. apparently as synonym]. Cites only *Inuus macacus* Rüpp.

1843: GRAY, 1843, *List*, xvii, 1, adopts—

Troglodytes niger Geoff., 1812, for the chimpanzee (syns.: *Pithecus*^b Cuv.; *Anthropopithecus* Blainv.; *Homo troglodytes* Linn., 1758; *Simia agrius* Schreber; *Simia pan*^e Donovan; *Tr. leucoprymnus* Lesson; *Pongo Buffon*).

Simia satyrus Linn., for the Orang-utan (syns.: *Pithecus*^b Geoff.; *Pongo* Lacép.; *Lophotus* Fischer; *Simia wurmbii* Kuhl; *S. agrius* Schreb.; *S. abelii* Fischer; ? *S. morio* Owen; *Satyrus rufus* Lesson).

In his *Systematic list of genera* (p. xvii) he apparently recognizes *Macacus* and *Inuus* as distinct, but on pp. 7-8 he apparently sinks *Inuus* as a synonym of *Macacus*, cf. (p. 8) *Macacus inuus* Cuv. (*S. vulgaris* and *S. Sylvanus*, Linn. *S. Pithecus* Schreb., *Inuus ecandatus*, Geoff. Bennett, G. Z. S. 191." As Gray's publication is a catalogue of museum specimens, special care is to be exercised in concluding that he establishes type species for genera.

- 1844:** SCHINZ, 1844, Synopsis Mammalium, attempts to arrange systematically "aller bis jetzt bekannten Säugethiere"; accordingly, from his viewpoint, any genus to which he ascribes only one species has its genotype definitely designated by monotypy. Under this interpretation he has (p. 25) designated *satyrus*, the Orang-Utan, as type of *Simia*.
- 1847:** REICHENBACH, 1847, Prakt. Naturg., refers to—
 p. 43: *Pithecus satyrus*.—REICHENBACH, 1847, 43, Orang-utan.
 p. 53: *Pithecus troglodytes*.—REICHENBACH, 1847, 53, Chimpanzee.
- 1851:** CARPENTER [s Cuvier], 1851, Animal Kingdom, recognizes—
 p. 51: *Simia satyrus* Linn. for the Orang-utan, Asia; with *Pithecus wurbii* of Borneo as a second species.
 p. 56: *Simia troglodytes* Linn., for the Chimpanzee, syn. *Troglodytes niger*. Guinea, Congo.
- 1852:** HAIME, 1852, Ann. Sci. nat., is quoted by Reichenbach and by Rothschild, but we have not yet been able to consult this publication.
Chimpanza troglodytes of HAIME, 1852, Ann. Sci. nat.—Quoted by Reichenbach, 1863, 192. This would seem to indicate that Haime, 1852, has used *Chimpanza* as a generic name (possibly an emendation of *Chimpansee* 1831).
Chimpanza gorilla of HAIME.—Quoted by Rothschild, 1904, PZSL, 416, as synonym of *Gorilla gorilla*.
- 1853:** BLYTH, 1853 (1854), JASB, v. 22 (4), 369–383, pls. 1–10, uses *Pithecus* for the Malayan orang-utans, and cites the following names—
 p. 369: pls. 7–8, *Pithecus morio* Owen; Borneo; Mias Kassar of Brooke.
 p. 369, 383: *Pithecus abelii* of Owen; Sumatra; so. *brookei* 1853.
 p. 369, 383: *Pithecus wurbii* of Owen; Borneo; so. *brookei* 1853.
 p. 375, 383: *Pithecus satyrus* (Linn.); Borneo; Mias Pappan of Brooke.
 p. 375, 383: pls. 1–4, *Pithecus brookei* new name (1853) for *abelii* of Owen plus *wurbii* of Owen; Sumatra, Borneo; Mias Rambai of Brooke.
 p. 375, 383: pls. 9–10, *Pithecus owenii* new name (1853) for the "second small orang." "Hab. unknown."
- 1854:** BUFFON in 1854 (v. 2, 251 ff.) cites—
 p. 251: Orang-outang, East Indies.
 p. 251: Pongo, Loando.
 p. 255: Jocko or chimpanzee (*Simia troglodytes*).
- 1856:** MAYER, AfN, v. 1, in a discussion of the anatomy of the Orang-Utan and of the Chimpanzee, uses numerous names as follows:
 Genus *Satyrus*^{d h} Mayer, 1856, AfN, 281, type *Satyrus sundaicus*. Orang-Utangs. With species—
 p. 281: 1. *Satyrus mawej* s. Orang-Utang (*Satyrus sundaicus-borneensis* et *sundaicus-sumatranus*).
 p. 281: *Satyrus sundaicus*.
 p. 281: *Satyrus africanus* Savage, 1847.—The Gorilla, Gaboon.
 p. 282: 2. *Satyrus chimpanse* (p. 282, syn. *lagaros*, *tschego*).
 ["*Simia chimpanse* Mayer," 1856, AfN, 282.—Quoted by Rothschild, 1904, PZSL, 428; Gambia and Senegambia.—Also quoted by Elliot, 1911c, 245.—Apparently for *Satyrus chimpanse*.]
 p. 282: 3. *Satyrus gorilla*.
 p. 282: 1. *Satyras*^m *knekias* (κνήκας flavus, daher auch für Wolf gebraucht) s. Orang-Utang.
 p. 282: 2. *Satyrus adrotes* (ἀδρότης crassus) s. Gorilla.
 p. 282: 3. *Satyrus lagaros* (λαγάρος, homo gracilis) s. Chimpanse und Tschego.

1863: REICHENBACH, 1863, Die vollständigste Naturg. der Affen, 164 ff., gives an extensive discussion of the family "Menschenähnliche Affen: ANTHROPOMORPHAE." To some extent he follows Lesson's method of sub-subgenera. This essay is often quoted as 1862; our copy bears the date of 1863.

Simia Linn.—Reichenbach, 1863, 176–191, restricts *Simia* to the orang-utans, and summarizes (190–191) the species as—

1. *Simia wurmbii* Owen, of Borneo; for the "Mias Pappan" of the natives.

2. *Simia mias-rambi*, of Borneo.

3. *Simia abelii*, of Sumatra, including *S. gigantea* (p. 178).

4. *Simia bicolor* Geoff., of Sumatra. "Orang bicolor Geoff." (p. 182).

5. *Simia mias-kassar*, of Sumatra, including *S. morio* Owen.

Simia bicolor, Orang bicolor Geoff., — ? —, Catalog. méth., p. 6.—Quoted by Reichenbach, 1863, 182.

Satyryus mavej Mayer, 1856.—Quoted by Reichenbach, 1863, 190 (cf. *knekias*).

Simia satyryus L.—Quoted by Reichenb., 1863, 176, as the young orang of Borneo.

Simia straussii Wagn.—Quoted by Reichenbach, 1863, 184, for the Pongo of Museum Paris.

Simia hendrikzii.—Quoted by Reichenbach, 1863, 181, as orang skull of Hendrikz.

Simia crossii Owen.—Quoted by Reichenb., 1863, 184, for Sumatran Orang.

Pseudanthropos Reichenbach, "Forts d. vollst. N.—G. 1860"; 1863, 191–194, syn. Chimpanze Cuv., 1829; emended to *Pseudanthropus* by Elliot, 1913.—This name is used for the chimpanzees, of which he cites 2 valid and 4 doubtful species:

1. *Ps. leucoprymnus*.

2. *Ps. troglodytes*.

3. ?*Ps. Chimpanse*.

4. ?*Ps. tscheco*, p. 194.

5. ?*Ps. calvus* n. sp. Reichenb., 1863, 194.

6. ?*Ps. koolo-kamba*.

p. 137: *Macacus* (Lacép.) Reichenbach, 1863, 137. Makak. Does not contain original monotype *inuus*. Divided [apparently into 3 subgenera—

(a) Subgenus not named. Contained *M. erythraeus*, *M. geron*, *M. rhesus* var.?

(b) *Nemestrinus*, p. 139, tat. *Simia nemestrinus* Linn.

(c) *Macacus*. Contains *brachyurus*, *speciosus*, *oinops*, *pelops*, *maurus*, *arctioides*, *libidinosus*, *ocreatus*, *eocoenus*, *pliocoenus*.

p. 143: *Pithecus*^b Reichenbach, 1863, 143, Pithèque Buffon. Magot. Can best be interpreted as proposition of a new genus (stillborn homonym), tat. *Inuus pithecus* Geoff. as so. *Pithecus inuus*. Contains two species.

p. 143: *Pithecus inuus* Linn., syn. *Inuus pithecus* Geoff.

p. 145: *Pithecus pygmaeus*, Pygmy of Pennant, "der Pygmäenaffe."

1866: HAECKEL, 1866, gMO, cl, applies in part the rule of homonyms, but does not apply consistently the Law of Priority to the higher apes. He uses the following names:

Engeco troglodytes (Gmel., 1788 [*Simia*]) Haeckel, 1866, cl, for the chimpanzee, with synonyms: *Simia troglodytes*, *Pithecus troglodytes*, *Troglodytes niger*, *Tr. leucoprymnus*, *Pongo troglodytes*.

- Satyrus orang* Haeckel, 1866, cl, for an orang-outang, with synonyms: *Simia satyrus*, *Pitheculus satyrus*.
- Satyrus morio* (Owen, 1836 [*Simia*]) Haeckel, 1866, cl, for an orang-outang, with synonyms: *Simia morio*, *Pitheculus morio*.
- Gorilla engena* . . . Haeckel, 1866, cl, for the gorilla, with synonyms: *Gorilla gina*, *Simia gorilla*, *Troglodytes gorilla*, *Pongo gorilla*.
- Pongo*^h Haeckel, 1866, cl, *Troglodytes* 1812 [not 1806] renamed; hence type—*troglodytes*=*niger* 1812.
- Pongo gorilla*=gorilla, see *Gorilla engena*.
- Pongo troglodytes*=chimpanzee.
- 1868:** *Andropithecus* COPE, 1868, PANSP, 286.—For a genus of tailless *Catarrhini*; no further character and no species mentioned. Possibly (as suggested by Palmer, 1904a, 103) an emendation of *Anthropopithecus* Blainv., 1838. In order to definitely dispose of this generic name, which is "a ship without a rudder," we hereby classify the chimpanzee, *Anthropopithecus troglodytes*, in it, as the first species ever definitely classified here, and designate this as genotype. This sinks the name an absolute synonym of *Anthropopithecus* 1838.
- 1870:** GRAY, 1870, Catalogue, recognized—
- p. 4: SIMIADAE, family.
SIMIINA, tribe I.
- p. 6: 1. *Mimetes*^h Leach, 1819, JdP; 1820, AP, 104; M.^h *troglodytes*.^h
- p. 8: 3. *Simia*. *Simia satyrus*; red-brown orang-utan.
- p. 19: CERCOPITHECINA, tribe IV.
- p. 28: 15. *Macacus*. Syn. *Macaca* 1799, but does not contain *inuus*.
- p. 32: 16. *Silenus*, tat. *Simia silenus*.
- p. 32: 17. *Inuus*, tat. *Simia inuus*.
- 1873:** *Asthmatos* SALISBURY, 1873a (or 1875?), 6, mt. *ciliaris*.—A so. *Homo sapiens*, see Art. 27a.
- 1879:** *Epanthropos* COPE, 1879, PANSP, 194, mt. *Homo sapiens* with 28 teeth.—Source of the emendation *Epanthropos* is uncertain.
- 1879: *Metanthropos* COPE, 1879, PANSP, 194, mt. *Homo sapiens* with 30 teeth.—Source of the emendation *Metanthropos* is uncertain.
- 1879: TROUESSART, 1879c, Catalogue, cites—
- p. 8: *Homo*.
- p. 8: *Troglodytes*^h, mt. *niger* (the chimpanzee) with 6 varieties.
- p. 9: *Simia*, cites only one species *satyrus* (orang-utan) with 5 varieties.
- p. 19: *Macacus* (*Macacus*^h) for *Inuus*; does not include *sylvanus*.
- p. 19: *Macacus* (*Pitheculus*^h), cites only one species *sylvanus*.
- p. 19: *Macacus* (*Inuus*^h), for *arctoides*, *maurus*, *ocreatus*.
- 1883:** LEUNIS, 1883a, Synopsis, appears to have been rather generally overlooked.
- p. 155. a. "*S[imia] troglodytes* Blumenb. ([s.] *Troglodytes niger* Geoff.). Schimpanse" reduced *Simia* to a monotypic genus with the chimpanzee as type; and as *Trog. niger* 1812 is definitely placed in *Simia* (as a synonym), this kills *niger* 1812 as a homonym of *Simia niger* 1799.
- p. 156. b. "*Pitheculus*^h *satyrus* Geoff. (*Simia satyrus* L.) Orang-Utan," is definitely given as monotype of *Pitheculus*^h Geoff.
- 1885:** CLAUS, 1885a, Lehrb., 808, adopts—
- "*Satyrus orang* L." for the orang-utan, and
- "*Troglodytes niger* L." for the chimpanzee.

- 1891:** FLOWER & LYDEKKER, 1891a, recognize—
 p. 736: *Anthropopithecus troglodytes*.^d Chimpanzee. *A. calvus*. Chimpanzee.
 p. 731: *Simia satyrus* L., 1766, 34. Orang-Utan. "Probably only one species."
 p. 723: *Macacus Lacépède*, 1801, 450. *M. inuus*. Separation of short-tailed forms in a distinct genus *Inuus* "is impracticable."
- 1894:** FORBES, 1894, Handb. Primates, v. 2, accepts—
 p. 187: *Anthropopithecus* p. 194 *A. troglodytes* for the chimpanzee, with pars *Homo troglodytes* L., 1766, as syn.
 p. 170: *Simia satyrus* L., 1766, for the Orang-utan or "forest living man" (monotype; a definite designation of genotype).
 p. 4: *Macacus inuus*, for the Barbary ape.
- 1896:** SELENKA, 1896, Sitzungsber. k. Akad. Wiss. Berl., adopted *Pithecus* for the orang-utans, for which he recognized two nomenclatorial species (*satyrus* and *sumatranus*) with various races cited below. In 1898, he transferred his species and races from the generic name *Pithecus*^b to the generic name *Simia*. He recognized the species *Troglodytes*^d *niger*^d for the chimpanzee with the following synonyms: *aubryi*, *calvus*, *livingstonii*, *schweinfurthi*. His races of orang-utans are as follows:
- abongensis* Selenka, 1896, 386; Langkat^t near Mt. Abong-abong. Local name Mawas messiah = Menschen-Mawas.
 1896: *Pithecus sumatranus abongensis* Selenka, 1896, 386.
 1898: *Simia sumatranus abongensis* (Sel.) Selenka, 1898, 7, 14; Sumatra.
 1913: *Pithecus sumatranus obongensis*^m Elliot, 1913c, 195.
- batangtuensis* Selenka, 1896, 384; near Batangtu.
 1896: *Pithecus satyrus batangtuensis* Selenka, 1896, 384.
 1898: *Simia satyrus batangtuensis* (Sel.) Selenka, 1898, 7, 11.
 1913: *Pongo l[andakensis]*^m *batangtuensis* (Selenka).—Elliot, 1913c, 205.
- dadappensis* Selenka, 1896, 384; N. of Genepai.
 1896: *Pithecus satyrus dadappensis* Selenka, 1896, 384.
 1898: *Simia satyrus dadappensis* (Sel.) Selenka, 1898, 7, 8, Dadap-Rasse.
 1904: *Pongo pygmaeus dadappensis*.—Rothschild, 1904, PZSL, 436, 438.—Elliot, 1913c, 194.
 1913: *Pongo l[andakensis]*^m *dadappensis* (Sel.).—Elliot, 1913c, 205.
- deliensis* Selenka, 1896, 386; Langkat and Deli. Local name Mawas Kuda = Pferde-Mawas.
 1896: *Pithecus sumatranus deliensis* Selenka, 1896, 386.
 1898: *Simia sumatranus deliensis* (Sel.) Selenka, 1898, 7, 14; Sumatra.
- genepaiensis* Selenka, 1896, 385; near Genepai.
 1896: *Pithecus satyrus genepaiensis* Selenka, 1896, 385.
 1898: *Simia satyrus genepaiensis* (Sel.) Selenka, 1898, 7, 12.
 1913: *Pongo pygmaeus genepainensis*^m Elliot, 1913c, 194.
 1913: *Pongo l[andakensis]*^m *dadappensis* genepai^m Elliot, 1913c, 205.
- landakkensis* Selenka, 1896, 384, N. W. Borneo.
 1896: *Pithecus satyrus landakkensis* Selenka, 1896, 384.
 1898: *Simia satyrus landakkensis* (Sel.) Selenka, 1898, 7, 13.
 1913: *Pongo landakensis*^m Elliot, 1913c, 205.
- langkatensis* Selenka, 1896, 386, same as *deliensis*.
 1896: *Pithecus sumatranus langkatensis* Selenka, 1896, 386.
- rantaiensis* Selenka, 1896, 385; Rantai.^t
 1896: *Pithecus satyrus rantaiensis* Selenka, 1896, 385.
 1898: (*Simia satyrus rantaiensis* Sel.) Selenka, 1898, 7, 10; Rantai-Unterrasse.

skalauensis Selenka, 1896, 385; Katungau.^t

1896: *Pithecius satyrus skalauensis* Selenka, 1896, 385.

1898: *Simia satyrus skalauensis* (Sel.) Selenka, 1898, 7, 9; Skalau-Rasse.

1913: *Pongo pygmaeus skalauensis* (Sel.) Elliot, 1913c, 194.

1913: *Pongo* [andakensis^m] *skalauensis* (Sel.).—Elliot, 1913c, 205.

tuakensis Selenka, 1896, 385; River Mrekai.

1896: *Pithecius satyrus tuakensis* Selenka, 1896, 385: "von den Malayen Maias Kesár d. i. Grober Maias genannt; am häufigsten nach Europa."

1898: *Simia satyrus tuakensis* (Sel.) Selenka, 1898, 7, 11; Merakat and Skapat Rivers.

wallacei 1839 Wallace's orangutans belong here.

1898: *Simia satyrus wallacei* (1839) Selenka, 1898, 7, 14.

1897: TROUESSART, 1897c, in his extensive Catalogus mammalium, Tomus 1, had an excellent opportunity to straighten out the nomenclature of primates by working on the genotype system, but for reasons not stated he refrained from doing so. The first edition of this catalogue is not accessible to us. Of the species now under consideration he cites (1897c) the following:

p. 1. *Homo* Linn.

p. 1. *Pithecanthropus* Dubois, 1894. Cites only *P. erectus*. Java.

p. 2. *Simia* Linn., 1766 [see 1758]. Syns. *Pongo* Lacép., 1799 [see p. 24]; *Pithecius* Geoff., 1812 [see p. 27].

p. 2. *Simia satyrus* Linn., 1766a, 34. Syns. *agrias* 1775; *wurmbii* 1812; *morio* 1836; *owenii* 1853; *curtus* 1855. With two subspecies—

Simia satyrus fossilis Lydekker, 1886, 4.

Simia abelii Clarke, 1826, 489; Sumatra. Syns. *bicolor* 1841; *gigantica* 1841; *wallichii* Blainv. (date?).

p. 3. *Anthropopithecius* Blainv., 1839. Syns. *Troglodytes*^b 1812, not 1807. *Mimetes*^h 1820; *Palaeopithecius* 1879. With 3 species—

p. 3. *A. sivalensis* (Lydekker, 1886, 2, pl. 1, fig. 1 [*Palaeopithecius*]). India.

p. 3. *A. troglodytes* (Linn., 1766, 32 [see 1758 and 1779]). Syns.: *sylvestris* 1699 and 1641; *niger* 1812; *leucoprymnus* 1836 and 1841; *vellerosus* 1862. With 1 subspecies—

p. 3. *A. troglodytes schweinfurthi* Gigl., 1872, 56. Niam-Niam. Syn; *aubryi* 1866.

p. 3. *A. tchego* Duvern., 1855. Loango. Syns. *calvus* 1861; *kooloo-kamba* 1861.

p. 16. *Cercopithecius* Erxl., 1777 [see 1758].

p. 18. *Cercopithecius* (*Cercopithecius*). Syns. *Callithrix* Reich. (not Geoff.); *Chlorocebus* 1870.

p. 24. *Macacus* Lacép., 1803 [see *Macaca* 1799].

p. 26. *Macacus* (*Pithecius* Blainv., 1839; syns. *Inuus* Geoff.; *Aulaxinuus* 1872).

p. 26. *Macacus* (*Pithecius*) *innuus*^e (Linn., 1766 [*Simia*]). Syns. *sylvanus* 1766 [see 1758]; *ecaudatus* 1812; *pithecius* 1851; (*fossilis*) 1877; *tolosanus* 1892.

p. 26. *Macacus* (*Macacus*). Does not contain type of *Macaca*.

1898: SELENKA, 1898, Menschenaffen. See under 1896.

1902: SHERBORN, 1902a, to whom zoologists owe a deep debt of gratitude for his wonderful Index Animalium, has given to the names printed on the plate published by Hoppius, 1760, a nomenclatorial interpretation somewhat different from that adopted by us. He recognizes these names as generic-specific binomials, as follows:

Pygmaeus edwardi.—SHERBORN, 1902a, 320, 801, 1169. See under 1760.

Satyrus tulpii.—SHERBORN, 1902a, 871, 1005, 1172. See under 1760.

Lucifer aldrovandi.—SHERBORN, 1902a, 34, 556, 1136. See under 1760.

Troglodyta bontii.—SHERBORN, 1902a, 137, 1000, 1190. See under 1760.

Our interpretation is that Hoppius was discussing *Simia* (*Simia*) with four species, and that the first names (*pygmaeus*, *satyrus*, *lucifer*, and *troglodyta*) quoted are essentially specific names, while the second names (*edwardi* [a misprint, man's name was Edwards], *tulpii*, *aldrovandi*, and *bontii*) mean: of Edwards, of Tulpus, of Aldrovandus, and of Bontius.

1904: PALMER, 1904a, in his wonderful Index Generum Mammalium, is the first author we have found who has consistently cited the genotypes of mammals, *so far as he found them mentioned*. It is obvious that he did not attempt to determine whether all these citations were valid type designations, and this doubtless explains the fact that he used (p.632) *Simia satyrus* in the sense of orang-utan as type of *Simia*. It seems needless to emphasize the great rôle for uniformity which Palmer's book has played and will continue to play in the nomenclature of the mammals.

1904: *Simia satyrus*.—MATSCHIE, 1904, 56, points out that *Simia satyrus* Linn., 1758a, is in reality the chimpanzee and he confines the name to this animal.

1904: ROTHSCHILD, 1904, PZSL, 413-440, discusses the nomenclature of the anthropoid apes. He adopts—

Simia Linn., 1758a, type *satyrus*, for the chimpanzees.—It is possibly a lapsus which explains his adoption of the name *Simia pygmaeus* Schreber, of the Congo (with subspecies *S. p. chimpanse*, *S. p. raripilosus*, *S. p. fuscus*, *S. p. leucoprymnus*), for *Simia pygmaeus* Schreber is a dead homonym of *S. pygmaeus* (the orang-outang) under the premises presented by Rothschild.

Pongo Lacépède, 1799, type *Simia pygmaeus* Hoppius, 1760, for the orang-outang.

1911: LYDEKKER, 1911, Eb, v. 20, 160, states that Orang-Utan ("Man of the woods") is the Malay name of the Red Ape of Borneo and Sumatra, namely *Simia satyrus* of most authors, the present-day Orang-utan.

1911: *Simia satyrus*.—THOMAS, 1911, PZSL, 125, in a discussion of the Linnaean, 1758, mammals, states that *Simia satyrus* Linn., 1758a, is "clearly the common chimpanzee, whose name (again failing a fiat) would therefore be *Anthropopithecus satyrus*." He accepts (p. 121) *sylvanus* as type of *Simia*, see 1758.

1913: ELLIOT, 1913, A Review of the Primates, 3 vols., had probably the greatest opportunity ever offered to any author to straighten out and permanently establish the nomenclature of the Primates. While he purposed to apply uncompromisingly the Law of Priority, and although he cited extensive literature, he overlooked many important references, and in addition in his nomenclature he departed materially from the International Rules, especially in regard to subgenera. His monograph has been severely criticised by several authors, and it must be admitted that (despite the industry which he devoted to the subject) it is necessary to check up his nomenclature very cautiously before adopting it.

- All three volumes are dated "1912," but according to G. S. Miller and J. A. Allen the correct date of issue is June, 1913. Of the species now under consideration, Elliot cites the following in volume 3:
- p. 227. *Pan* Oken, 1816, 1230, type *africanus* = *satyrus* 1758. Chimpanzees.
 - p. 234. *Pan calvus* Du Chaillu, 1860, type locality Camma country, Gaboon.
 - p. 240. *Pan fuliginosus* Schaufuss, 1875, t. 1. ? Coanga, French Congo. Syn. *raripilosus*.
 - p. 241. *Pan satyrus* Linn., 1758, t. 1. Gaboon. Syns. *troglodytes* Gmel., 1788; *niger* Geoff., 1812; *tschego* Duvern., 1855.
 - p. 242. *Pan kooloo-kamba* Du Chaillu, 1860, t. 1. head waters of the Ovenga River; native vernacular name Ashankolo. Syn. *satyrus* of Matschie, 1904.
 - p. 244. *Pan leucopymnus* Lesson, 1831, t. 1. Coast of Guinea. Syns. *troglodytes* of Owen, 1835, Tyson's 1699 Pigmy, *pygmaea* of Schreber.
 - p. 245. *Pan chimpanse* (Mayer, 1856); also of Matschie, 1900; *troglodytes* of Flower & Lydekker, 1891a. T. 1. Gambia.
 - p. 245. *Pan schweinfurthi* Giglioli, 1872, t. 1. Niam-Niam country, Central Africa. Syns. ? *troglodytes* of Thomas, 1890, *pygmaeus* of Rothschild, 1904.
 - p. 248. *Pan schweinfurthi marungensis* Noack, 1887, t. 1. Manda Marungu.
 - p. 249. *Pan aubryi* Gratiolet & Alix, 1866, t. 1. Gaboon. Syn. *vellerosus* of Matschie, 1904.
 - p. 250. *Pan vellerosus* Gray, 1862, t. 1. Cameroon Mts. ?, W. Africa.
 - p. 251. *Pan fuscus* Mayer, 1894-95, t. 1. unknown. Syn. *troglodytes* of Jentink, 1888.
 - p. 181. *Pongo* Lacépède, 1799, 4, type *borneo* = *pygmaeus* Hoppius, is adopted as generic name for the orang-outangs. The question is left open as to whether one or two species should be recognized—
 - p. 192. *Pongo pygmaeus* Hoppius.
 - A. Borneo Ourang. Syns. *pygmaeus* Hoppius, 1760; *satyrus* Linn., 1766; Ourang-outan of Wurm; *wurmbi* Tied., 1808; *morio* Owen, 1836; *wallacei* Blainv., 1839; *brookei* Blyth, 1853; *curtus* Blyth, 1855; *ladakensis* Selenka, 1896; *batangtuensis* 1896; *dadappensis* 1896; *genepaiensis* 1896; *skalauensis* 1896; *tuakensis* 1896; *rantaiensis* 1896; *agrias* of Rothschild, 1904.
 - B. Sumatran ourang, t. 1. Ramboom. Syns. *abelii* Clarke, 1826; *bicolor* Geoff., 1841; *satyrus* of Gray, 1870; *deliensis* Selenka, 1896; *obogensis* 1896.
 - vol. 2, p. 176. *Pithecus* Geoff., 1795, p. 462, type *Simia sinica*, is used for the macaques in general, and *Macaca* Lacépède, 1799, 4, type *sylvanus* is sunken as a synonym although the type species is transferred to *Simia*. Thomas, 1894, had previously designated *veter* as type of *Pithecus*.
 - p. 172. *Simia* Linn., 1758a, 25, is interpreted as a monotypic genus to contain only the Barbary ape, i. e., *Simia sylvanus* Linn., 1758a.
- 1913: MATSCHIE, 1913, AzMB, Dec. (for 1912), 45, adopts "*Simia* (*Anthropopithecus*)" for the chimpanzees, and describes 2 new units, as follows, *yambuyae* p. 46, *adolphi-friederici* p. 46.
- 1914: MATSCHIE, 1914, SGNFB, 327, adopts *Anthropopithecus* in place of *Simia*, which he formerly used, for the chimpanzees, and proposes 9 new species: *oertzeni* p. 327, *reuteri* p. 328, *ochroleucus* p. 329, *purshei* p. 332, *pfeifferi* p. 333, *graueri* p. 333, *clavescens* p. 334, *castanomale* p. 334, *schubotzi* p. 335.

- 1916: ALLEN, 1916, BAMNH, 49-52, discusses the type species of the macaques and adopts the following:
- Simia* ^r Linn., 1758a, 25, tat. *sylvanus*. Syns.: *Macaca* 1799; *Inuus* 1812; *Sylvanus*^h 1816; *Macacus* 1820; *Magus* 1827, type *sylvanus*; *Pithes* 1828; *Salmacis* 1841.
- Silenus* Goldfuss, 1820, 479, tat. *silenus* Schreber. Syns.: *Pithecus*^h of Elliot, type *sinica* [not *Pithecus* 1795, tsd. *veter*]; *Maimon* 1839, tsd. *erythraeus*=*rhesus*; *Rhesus* 1840; *Pithex* 1840, tsd. *oinops* Hodg.=*rhesus*; *Lyssodes* 1848; *Vetulus* 1862; *Cynamolgus* 1862 [type designated as *irus* Cuv.=*cynocephalus* Reichenbach; but Reichenb. cited *Simia cynamolgus* which is therefore tat.; Reichenb. made *S. cynamolgus* so. *cynocephalus*]; *Zati* 1862; *Nemestrinus*^h 1863. He replaces Elliot's 1913 *Magus*^h by *Gymnopyga* Gray, 1866, mt. *innominata*=*maurus*. He replaces the 1913 subgeneric names used by Elliot as follows: *Silenus* 1820 for *Pithecus*^h; *Lyssodes* 1848 for *Inuus*^h; *Rhesus* 1840 for *Nemestrinus*^h; *Silenus* 1820 for *Vetulus*; *Cynamolgus* 1863 for *Macacus*^h.
- 1916: THOMAS, 1916, AMNH, 179-181, again uses *Pithecus* 1795 for the langurs on basis of his type determination, *Simia veter*, in 1894; he cites, as synonyms, *Presbytis* 1821; *Semnopithecus* 1822; and *Pygathrix* of Elliot, 1913.
- 1925: ALLEN, 1925, BAMNH, 283-499, in a paper on Primates from the Congo, discusses Elliot's (1913) nomenclature in some detail and differs with him in several important respects. He adopts—
- p. 477: *Pan* Oken, 1816, type *africanus*=*niger*=*troglodytes*=*satyrus*, for the chimpanzees. As specific and subspecific names published for various chimpanzees he cites: *satyrus* 1758 (W. Africa) with absolute syns. (renaming) *troglodytes* 1788 and *niger* 1812; *leucoprymnus* 1831 (Guinée); *tschego* 1855; *chimpanse* 1856=*schimpanse* 1904; *calvus* 1860 (Gaboos); *kooloo-kamba* 1860 (French Congo); *vellerosus* 1862 (N. Cameroon); *aubryi* 1866 (Equatorial Africa); *fuliginosus* 1870 (French Congo); *schweinfurthii* 1872 (Belgian Congo); *marungensis* 1887 (Belgian Congo); *fuscus* 1895 (?Gold Coast); *rari-pilosus* 1905 (French Congo); *ituricus* 1905 and 1912 (Belgian Congo); *nahani* 1912 (Belgian Congo); *cottoni* 1912 (Uganda); *adolphi-friederici* 1913 (Germ. E. Africa); *yambuyae* 1913 (Belgian Congo); *elliotti* 1914 (N. Cameroon); *oertzeni* 1914 (N. Cameroon); *reuteri* 1914 (S. Cameroon); *ochroleucus* 1914 (S. Cameroon); *purschei* 1914 (Germ. E. Africa); *pfeifferi* 1914 (Germ. E. Africa); *graueri* 1914 (Belgian Congo); *castanomale* 1914 (Germ. E. Africa); *calvescens* 1914 (Belgian Congo); *schubotzi* 1914 (Belgian Congo); *steindachneri* 1914 (Belgian Congo); *schneideri* 1919 (Fr. Congo); *papio* 1919 (Cameroon).
- p. 478: *Pongo* Lacépède, 1799, for the Malay orang-utans [as indicated by his adoption (p. 477) of PONGIDAE and PONGINAE].
- p. 478: *Simia* Linn., 1758, tat. *sylvanus*, for the Barbary ape.
- p. 351: *Lasiopyga* Illiger, 1811, type *nictitans* [instead of *Cercopithecus* 1758] for the guenons.
- 1925: It was largely as a result of Elliot's, 1913, deductions in nomenclature that a number of European zoologists appealed to the International Commission on Zoological Nomenclature to suspend the rules and to adopt—
- Simia*, type *satyrus*, for the orang-utan.
- Cercopithecus* Brännich, 1772, 34, with *S. mona* as type, for the Guenons.

Anthropopithecus 1838, type *Simia troglodytes*, for the chimpanzees.

Unfortunately, the appellants did not prepare their case in detail. Further, various American mammalogists opposed the proposition.

The Commission published its opinion (No. 90) in 1925, rejecting the proposition as respects *Anthropopithecus* and *Simia*, and referring the case of *Cercopithecus* to the next International Congress of Zoology for further consideration.

Since the publication of Opinion 90, Stiles and Orleman (1926, Journ. of Mammalogy, Feb., 48-53) have endeavored to prove that Elliot was in error in his transfer and that *Cercopithecus*, type *diana*, is to be preserved under the Rules (without suspension) for the Guenons.

The present paper deals with the proposition as respects *Anthropopithecus* and *Simia*.

From the foregoing, rather extensive premises, the names which come into special consideration can be arranged as follows:

VERNACULAR NAMES

Opinion 1, International Commission, states that "In no case is the word 'indication' [in Article 25a, International Rules] to be construed as including museum labels, museum specimens, or vernacular names." The practical application of this Opinion to the present discussion is seen from the following:

Chimpanzee: Although this name is now confined to the African chimpanzees, early authors used it for the Asiatic orang-outangs also. Thus—

Sloan [not available to us] from Africa; hence not the Malayan orang-utan. Edwards, 1758, 6, as so. the Malayan orang-utan.

Houttuyn, 1761, "van Africa"; but pl. 5, fig. 2, is an orang-utan.

Lecat, 1765, pl. 1; chimpanze or kimpezé, a chimpanzee is cited as an orang-utan.

Homo silvestris Bontius, 1718, fig. p. 84, is a vernacular name; the object is a freak human being (i. e., *Homo troglodytes* 1758).

Homo sylvestris: A vernacular name, used both for the African chimpanzee and for the Asiatic orang-utan; thus—

Tulpius, 1641, 275, pl. 14; is a chimpanzee.

Tyson, 1699, figs. 1-14; is a chimpanzee.

Edwards, 1758, pl. 213; is a Malayan orang-utan, but considered identical with the African chimpanzee.

Le Jocko (syn. enjocko, engocko): A word of African origin, used especially for the African chimpanzees, but occasionally for the Malayan orang-utans; thus—

Buffon, 1766, 43; an African chimpanzee, but the bibliography includes the Malayan orang-utans also; 1812, 37 (chimpanzee); 1854, 255 (chimpanzee).

Buffon, 1789, 14, pl. 2; clearly a Malayan orang-utan.

Audebert, 1799, 18-20, fig. 2; Borneo red orang-utan, but the bibliography includes the African chimpanzee and the Asiatic Voulcock.

1758: *Simia* Linn., 1758a (1760a), 25 (African chimpanzee plus Barbary ape); 1766a, 34.—Hoppius, 1760a, 63–76 (African chimpanzees plus Malayan orang-utans plus freak human beings).—Erxleben, 1777, 6.—Blumenbach, 1779, 65 (raised to genus).—Gmelin, 1788a, 26.—Geoff. & Cuv., 1795, 461 (African chimpanzees plus Malayan orang-utans plus Asiatic Gibbons).—Illiger, 1811, 67.—Fischer, 1813, v. 2, 517 (syn. *Pithecus*^b 1800) (chimpanzee plus orang-utan).—Griffith, 1827, 4–5 (subg. *Troglodytes*^b 1812 and *Pithecus*^b 1800).—Cuvier, 1829, 87.—Milne-Edwards, 1834, 269.—Wagner, 1840, 24 (subg. *Troglodytes*^d and *Pithecus*^d).—Gray, 1843, 1.—Schinz, 1844, 25 (mt. *satyrus*=orang-utan).—Reichenbach, 1863, 176–191 (restr. to Malayan orang-utans).—Schlegel, 1876, 8 (*sylvanus* eliminated).—Jentink, 1887, 1 (*sylvanus* eliminated).—Flower & Lydekker, 1891a, 731 (“probably only a single species, *S. satyrus*”).—Trouessart, 1897c, 2 (Malayan orang-utans).—Forbes, 1894, 170 (mt. *satyrus*=orang-utan).—Selenka, 1898 (for the Malayan orang-utans).—Palmer, 1904a, 632 (type *satyrus*=Malayan orang-utan).—Matschie, 1904, 56 (type *satyrus*=chimpanzee).—Rothschild, 1904, 413 ff. (type *satyrus*=chimpanzee).—Lydekker, 1911, Eb, v. 20, 160 (Malayan orang-utan).—Thomas, 1911, 121 (type *sylvanus*).—Elliot, 1913b, 172 (type *sylvanus*).—Allen, 1925, 478 (type *sylvanus*).

TYPE DESIGNATIONS.—The question of the proper type designation for *Simia* 1758 is *sub judice*, with rather pronounced differences of interpretation which call for a special Opinion by the International Commission to arbitrate the subject. Three species have been definitely designated as genotype, namely: *satyrus* seu *troglodytes*^b as the chimpanzee; *satyrus*^d, as the Malayan orang-utan; and *sylvanus*, as the Barbary ape. These designations can be summarized as follows:

a (f). Definite genotype determinations. See b.

b (c). Genotype determination excluded under Art. 30f, because the species was not originally mentioned in the original publication of *Simia* 1758.

Oken, 1816, 1227 (Malayan orang-utan, given as *Faunus indicus, rufus*).—Owen, 1836, PZSL, 93.—Schinz, 1844, 25 (mt. *satyrus* as orang-utan).—Flower & Lydekker, 1891a, 731 (mt. *S. satyrus*, as Orang-utan).—Forbes, 1894, 170 (mt. *satyrus*=orang-utan).—Palmer, 1904a, 632 (Malayan orang-utan given as *S. satyrus*).—Apstein, 1915a, 201 (*S.*^d *satyrus*^d Linn. “part” 1758 designated as type; this obviously refers to the Malayan orang-utan, as *Anthropopithecus niger* is accepted for the African chimpanzee).

c (b; f). Genotype determination undebatably available for consideration, as the species was originally included in *Simia* 1758. See d.

d (e). African chimpanzee—

Leunis, 1883a, 155 (but not as *satyrus*).—Matschie, 1904, 56 (given as *satyrus*).—Rothschild, 1904, 413 ff. (given as *satyrus*).

e (d). The Barbary ape—

Thomas, 1911, 121 (*sylvanus*, under Opinion 16, absolute tautonymy).—Elliot, 1913b, 172 (*sylvanus*, agrees with Thomas, 1911).—Allen, 1925, 478.

f (a; c). Debatably available genotype determination, except in so far that the Barbary ape is excluded from consideration as type. One debatable factor lies in the point that the specific name *satyrus*^d is retained for the Malayan orang-utan (not available as genotype), while another name is used for the chimpanzee; accordingly, if the name *satyrus*^d is to govern in deciding whether the type designation is available, the answer is in the negative; if the object (chimpanzee) is to govern, the genotype designation is to be accepted as available. See g.

g (h). The species *sylvanus* eliminated. See Opinion 6.

Fischer, 1813, v. 2, 539 (*sylvanus* eliminated to *Cynocephalus*^b; *satyrus*^d retained for Malayan orang-utan; chimpanzee given as *Simia troglodytes*^d).—Cuvier, 1829, v. 1, 96 (*sylvanus*, as *silvanus*, eliminated to *Inuus*; *satyrus*^d used for Malayan orang-utan; troglodytes^d used for chimpanzee).—Voigt, 1831, v. 1, 73 (*sylvanus* eliminated to *Inuus*; *Simia*^d (*Pithecus*^d) *satyrus*^d used for Malayan orang-utan; *Simia* (*Chimpansee*, mt.) troglodytes^d used for chimpanzee. Cf. (?) also Art. 30f.—Swainson, 1835, 65 (*sylvanus* eliminated to *Inuus*; chimpanzee to *Simia* (*Troglodytes*^d); *S. satyrus*^d used for the orang-utan).—Wagner, 1840, 149 (*sylvanus* eliminated to *Inuus*; *Simia*^d (*Pithecus*^d) *satyrus*^d used for Malayan orang-utan; *Simia* (*Troglodytes*^d) troglodytes^d used for chimpanzee).—Lesson, 1840, 88, and 1842, 5 (*sylvanus* eliminated to *Macacus* (*Inuus*) as so. *pithecus*; *Satyrus*^b *rufus* used for orang-utan; Troglodytes^d *niger*^d used for chimpanzee).—Gray, 1843, 8 (*sylvanus* eliminated to *Macacus*; *Simia*^d *satyrus*^d used for orang-utan; Troglodytes^d *niger*^d used for chimpanzee).—Reichenbach, 1862, 143 (*inuus* and *ecaudatus*, i. e., *sylvanus*, eliminated to *Pithecus*^d; *Simia*^d *satyrus*^d viewed as a young Borneo orang-utan; *Pseudanthropos* troglodytes^d used for the chimpanzee).—Schlegel, 1876, 115 (*sylvanus* eliminated to *Macacus*; p. 6, the chimpanzee as *Simia* troglodytes^d; *S. satyrus*^d used for the orang-utan).—Leunis, 1883a, 155 (*sylvanus* eliminated to *Inuus*, as so. *ecaudatus*; *Pithecus*^d *satyrus*^d used as mt. for the orang-utan; *Simia* troglodytes^d used for the chimpanzee, with syn. Troglodytes^d *niger*^d, which is troglodytes^b 1779 renamed = *satyrus* 1758 renamed).—Jentink, 1887, 1, 27 (same as Schlegel, 1876).—Forbes, 1894, 4 (*sylvanus* eliminated, as so. *inuus*, to *Macacus*; *satyrus*^d used, p. 170, for orang-utan; *Anthropopithecus* *niger*^d used for chimpanzee).—Trouessart, 1897c, 26 (*sylvanus* eliminated to *Macacus* (*Pithecus*), as so. *innuuse*; *Simia*^d *satyrus*^d used for the orang-utan; *Anthropopithecus* troglodytes^d used for the chimpanzee, cf. (?) Art. 30f).

h (g). The specific name *inuus* (a subjective synonym of *sylvanus*) eliminated from *Simia*—

Lacépède, 1799, 3, 4 (*inuus* eliminated, p. 4, from *Simia* as monotype of *Macaca* new genus; "Singe satyre, *Simia satyrus*" cited, p. 3, as example of *Simia*; the orang-utan of Borneo, *Pongo borneo*, is mt. of *Pongo* n. g. (If this *satyrus* is the chimpanzee ("angle facial de 65 degrés"), the reference is interesting even if one prefers not to interpret it as type-designation).—Lacépède, 1803, 199 (translation of 1799; same as 1799, 3, 4; but "Singe satyre" is translated as "Orang Utang").—Desmarest, 1804, 8 (*inuus* eliminated from *Simia* to *Cynocephalus*^d; *Simia*^d *satyrus*^d used for red orang-utan; *Simia* troglodytes^d used for chimpanzee).

There are two points of view as to whether *Simia* should be restricted to the chimpanzee or to the Barbary ape.

The Linnaean rules which applied were—

"242.—Nomen genericum antiquum antiquo generi convenit."

"246.—Si genus receptum, secundum jus naturae & artis, in plura dirimi debet, tum nomen antea commune manebit vulgatissimae & officinali plantae."

Under 246 authors should undoubtedly have reserved *Simia* for the Barbary ape.

Under the International Rules the case stands as follows:

On basis of Art. 30d and Opinion 16, Thomas (1911, PZSL, 122) is of the view that *Simia sylvanus* Linn., 1758a, 25, presents a case of absolute tautonymy, in the citation of "*Simia*. Gesner quadr. 847," while in the discussion in Opinion 16 the Secretary of the Commission takes the opposite view. Thomas has examined three editions of Gesner, the Secretary only one.

On page 957 of the edition accessible to us we do not find support for Thomas's conclusion, although the Barbary ape is figured on that page. On page 966 (see above, p. 4) the words "*primae simpliciter simiae dicuntur, alterae* [etc.]" might be interpreted as supporting rather than as disproving Thomas's interpretation, but the point seems to us to be debatable. The difference of opinion should be referred to the International Commission for arbitration.

Accordingly, our viewpoint (also based upon Gesner's text) is that a case of absolute tautonymy is not obvious.

Art. 30g states:

"If an author, in publishing a genus with more than one valid species, fails to designate or to indicate its type, any subsequent author may select the type, and such designation is not subject to change. (Type by subsequent designation.)"

"The meaning of the expression 'select the type' is to be rigidly construed. Mention of a species as an illustration or example of a genus does not constitute a selection of a type."

Under this paragraph the definite monotypic restriction of *Simia* to the chimpanzee by Leunis, 1883a, 155, and the definite restriction of *satyrus* (chimpanzee) to *Simia* by Matschie, 1904, p. 56, seem to come into consideration as the first unqualifiedly valid applications of these Articles, except as possibly influenced by g (h), p. 47.

Art. 30i (recommendation) deals with virtual tautonymy. In this connection it may be recalled that the derivation of *Simia* is in dispute (cf. the Greek ὁ Σίμος and the Latin *similis*) and that the Greek ὁ Σίμος (flat-nose) is used to denote a satyr. Accordingly, the combination *Simia satyrus* might be interpreted as virtual tautonymy, thus supporting Matschie.

Art. 30l (elimination) supports Leunis and Matschie.

Art. 30n (best-known species) undoubtedly supports Thomas.

Whichever interpretation be adopted, a very regrettable confusion occurs, because *Simia* is confined to a genus with which it has not

been associated for many decades except in a few papers; further, this transfer seriously inconveniences the interpretation of many papers dealing with infectious diseases, and therefore has a practical bearing on human medicine and human life.

THE GENERIC NAME *PITHECUS*

- 1795:** *Pithecus* Geoff. & Cuv., 1795, 462, for the macaques, contained: *veter* (tsd. Thomas, 1894; Allen, 1916), *silenus*, *faunus*, *cynomolgus*, *sinica* (tsd. Elliot, 1913).—Elliot, 1913b, 176, type *sinica*; the genus is separated from *Simia*, type *sylvanus* (which is the same as *Macaca* 1799, type *inuus*); but *Macaca* 1799 is given as a so. *Pithecus* which is then divided into subgenera, i. e., *Inuus*^d [= *Lyssodes* 1846] which does not contain *inuus*, the type of *Inuus*, *Nemestrinus*^d (tat. *nemestrinus*; which contains *rhesus*, tat. of *Rhesus* 1840), *Vetulus* (tsd. *silenus*; which is a so. *Silenus* 1820), *Zati* (tsd. *sinica* which is tsd. of *Pithecus* 1795 fide Elliot), *Neocebus*^d (lapsus, tpd. *validus*; not *Neocebus* 1913, tod. *cephus*, cf. *Neopithecus* 1913), and *Macacus* (which does not contain *inuus*, type of *Macacus*=*Macaca*).
- 1879:** *Macacus* (*Pithecus*^h).—Trouess., 1879c, 19 (cites only *sylvanus*); 1897c, 26 (does not contain any of the species originally named in *Pithecus* 1795; only early species is *innuue* syn. *sylvanus*, with *pithecus* Geoff., 1851, 31 as synonym; all other species are fossil; accordingly, *M. (Pithecus)* of Trouess. is a so. *Macaca* 1799).
- 1894:** *Pithecus* Geoff. & Cuv., 1795, as limited by tsd. *veter*.—Thomas, 1894 (1895), AMcHn, Genova, 664, type *veter*, definitely designated by first species rule; 1916, AMNH, 180, the langurs, syns. *Presbytis* 1821, *Semnopithecus* 1822, and *Pygathrix* of Elliot, 1913.
- 1800:** *Pithecus*^h Cuv., 1800, table, for the orans (plural).—Desmarest, 1804, 7.—Duméril, 1806.—Tiedemann, 1808, 317 (chimpanzee plus red orang-utan).—Geoff., 1812, 87 (Malayan orang-utans plus gibbons; not African chimpanzees); 1829, 21 (cites only Malayan orang-utans).—Leach 1820, 104 (type designated *satyrus*^d, as Malayan orang-utan).—Voigt, 1831, 73 (subg. of *Simia*; for *satyrus*=Malayan orang-utan).—Sénéchal, 1839, 428 (divided).—Wagner, 1840, 40 (subg. of *Simia*; for Malayan orang-utan).—Reichenbach, 1847, 43 (orang-utans plus chimpanzees).—Leunis, 1883a, 156 (mt. *satyrus*^d=orang-utan, Asia).—Selenka, 1896, 384 (for the orang-utans); 1898 (all orang-utans transferred to (*Simia*)).—Palmer, 1904a, 539 (type *Simia satyrus* L., orang-utan, from Borneo).
- 1863:** *Pithecus*^h n. g. Reichenbach, 1863, 143, tat. *Inuus pithecus* Geoff., as so. *P. inuus*. Two species: *inuus* and *pygmaeus* 1863 [not 1760].

From the foregoing it is obvious that the generic name *Pithecus* is about as confused as is the generic name *Simia*; it has been used for the chimpanzees, the orang-utans, the gibbons, the macaques in general, for the Barbary ape (as a restricted subgenus), and for the langurs. In relatively recent years it has been definitely restricted to the Asiatic orang-utans (by Leunis, 1883a), to the Barbary ape (by Trouess., 1897c), and to the macaques, exclusive of the Barbary ape (by Elliot, 1913c).

In a strict application of the Rules, *Pithecus* is dead for the orang-utans and for the chimpanzees; it appears to be the valid name for the langurs.

From a standpoint of pure systematic mammalogy we see no insurmountable obstacle to applying the Rules, although extensive temporary confusion would result. Were only the inconvenience of systematic mammalogists involved this would not seem to be a very serious factor, for the subjective nature of the nomenclature of *Primates* could scarcely be made more confusing by the application of an objective system of priority. But because of the use of the monkeys in bacteriological and public-health laboratories we submit (see p. 61) that the International Commission on Zoological Nomenclature should be requested to suppress entirely the generic name *Pithecus* under exercise of its plenary power.

The data are now before us to enable the presentation of a fairly complete table of objective^o and of subjective^s synonyms of Man, the chimpanzee, the orang-utans, and the Barbary ape. The entries do not necessarily imply that all the actual specimens published by various writers under one and the same name are specifically identical, *but the original type specimen upon which a name was based is assumed to be included theoretically in all future applications of said name*, regardless of errors in determination of other specimens. The Latin names printed in Roman type are dead names, from our viewpoint, for the species or genus in question.

SUMMARY OF GENERIC AND SPECIFIC NAMES

MAN.—The technical names for man can be summarized as follows:

Homo Linn., 1758a, 20, tsd. *sapiens*. Names of one or more fossil genera, still sub judice, are omitted from this list.

a (b). Available synonyms:

1758: *Troglodytae* Linn., 1758a, 24, tat. *troglodytae*=*troglodytes* 1758=*sapiens*.—Sherborn, 1902a, 1190 (*Troglodyta*), mt. *bontii*=*troglodyta* 1758.

1832: *Eunuchus*^o Rafinesque, 1832, 112, mt. *Eu.* [= *Homo*] *sapiens*.

1848: "*Palingenestes*, mihi" Gistel, 1848 (1851), *Naturg.*, 188, mt. *P. kosmokratis* Gistel, 1848 (1851), 188=human spermatozoa. So. *Homo*.

1873: *Asthmatos*^s Salisbury, 1873a (or 1875?), 6, mt. *ciliaris*. Art. 27a, International Rules.

1879: *Epanthropos*^o Cope, 1879, PANSP, 194, mt. *H. sapiens* with 28 teeth.

1879: *Metanthropos*^o Cope, 1879, PANSP, 194, mt. *H. sapiens* with 30 teeth.

1902: *Lucifer*^s Sherborn, 1902a, 1136, mt. *aldrovandi*^r=*lucifer*=*sapiens*.

1909: *Pseudhomo*^s Ameghino, 1909, v. 12, 195, mt. tod. *Homo heidelbergensis*.

1909: *Palaeanthropus*^s Bonarelli, 1909, 26, mt. *Homo heidelbergensis* 1908.

1913: *Eoanthropus*^s Woodward, 1913, 135; 1913, GM, 433, mt. *dawsoni*; Pleistocene gravel, Sussex.

—? —: *Epanthropus*^o (Author ?, date ?) for *Epanthropos*.

—? —: *Metanthropus*^o (Author ?, date ?) for *Metanthropos*.

b (a). Dead synonyms:

1645: pars *Cercopithecus Aldrovandus*, 1645, 284.

1760: pars *Simia* (*Simia*) Hoppius, 1760.—Brisson, 1762, 134.—Gmel., 1788a, 26.

c. Specific names:

- 1758: *sapiens* Linn., 1758a, 20.—Undoubtedly the correct specific name for Man, viewed as a single species.
- 1758: *Homo sapiens* Linn., 1758a (1760a), 20.—And of all authors 1758 to 1926.
- 1758: *troglydites*^a Linn., 1758a, 24, based on Bontius, 1718, fig. p. 84 [not troglodytes Blumenbach, 1779].—A freak, pilose woman. So. *sapiens* 1758. Owing to the fact that the Malay vernacular name Orang Outang was used in Linné's bibliographic citation of Bontius (1718) the specific name *troglydites* 1758 was later confused in *Simia* with the Asiatic orang-outangs and the African chimpanzees.
- 1758: *Homo troglodytes*^a Linn., 1758a (1760a), 24.—And of all later authors in so far as they used *H. troglodytes* in the Linnaean sense.
- 1758: pars *Simia*^d *troglydites*^a (Linn., 1758) of all later authors, in so far as this includes Bontius, 1718.—This invalidates *Simia*ⁱ *troglydites*^a Blumenbach, 1779, for the chimpanzee.
- 1758: *troglydita*^{a7} Linn., 1758, 24 (originally in plural; changed to the singular by Hoppius in 1760).—A specific name, used in the plural by Linn., 1758a, 24, but not accepted by him as valid. It is an absolute synonym of *troglydites* 1758.
- 1758: [*Troglydita*^a] *troglydita*^{a7} Linn., 1758a (1760a), 24.
- 1760: [*Simia*^d] *troglydita*^{a7} (Linn., 1758a [*Homo*]) Hoppius, 1760, 72-76, fig. 1.—This invalidates the later use of *troglydites*^d 1779 in *Simia* for the chimpanzee.
- 1760: *lucifer*^s Hoppius, 1760, 70-76, fig. 2.—A freak, fabulous creature, upper half is man, lower half is possibly a baboon.
- 1760: [*Simia*^d] *lucifer*^s Hoppius, 1760, 70.
- 1777: *Homo lucifer*^s (Hoppius, 1760 [*Simia*^d]) Erxleben, 1777, 6 (as fabulous).
- 1773: *diurnus* Mueller, 1773, 61, *sapiens* 1758 renamed.
- 1773: *Homo diurnus* Mueller, 1773, 61.
- 1773: *nocturnus*^s Mueller, 1773, 109, contains *troglydites* 1758 plus *pygmaeus* 1760; is restricted here (1927) to *troglydites* 1758.
- 1773: pars *Homo nocturnus*^s Mueller, 1773, 109.
- 1777: *Homo troglodytes nocturnus*^s (Mueller, 1773) Erxl., 1777, 5.
- 1788: pars *satyrus*^d of Gmel., 1788a, contains *troglydites* 1758 plus chimpanzee plus Edwards', 1758, orang-outang.
- 1788: pars *Simia*^d *satyrus*^d Linn., 1758a (the chimpanzee).—Of Gmel., 1788a, 26.—Shaw, 1800, 3.—Illiger, 1811, 67.—Schreber, 1826, 54.
- 1848: *kosmokratis* Gistel, 1848 (1851), Naturg., 188. Human spermatozoa.
- 1848: *Palingenestes kosmokratis* Gistel, 1848 (1851), Naturg. 188. So. *Homo sapiens*.
- 1873: *ciliaris* Salisbury, 1873a (or 1875 ?), 6.—Originally interpreted as a pathogenic protozoon, later as ciliated epithelial cells.
- 1873: *Asthmatos ciliaris* Salisbury, 1873a (1875 ?), 6.
- 1645: *Cercopithecus formae rarae*^d Aldrovandus, 1645, 245, 249, 1 fig.—See above, *Simia lucifer*.

CHIMPANZEE.—The technical names of chimpanzees can be summarized as follows:

⁷ The old Latin substantive *Troglydita* of Plinius, etc., the troglodytes or cave dwellers, is plural; there is a Latin *troglydita* (in the singular) of 1760; the old Latin *troglyditis* of Plinius, etc., is an adjectival form.

If only the convenience of systematic mammalogy were involved, we would *a priori* lean toward this alternative, on the ground that zoologists can accommodate themselves without much difficulty to change of names, even to retransfer of names, despite the inconvenience involved.

3. Unfortunately, however, the question has become more than one of names used in systematic zoology. The chimpanzees and various monkeys have come into common use in experimental work in laboratories dealing with communicable diseases; there is an extensive medical literature on bacteriology, on serological reactions, and on infections with various parasites, reported for various primate hosts in the laboratory and in nature. Thus the apes and monkeys have a distinct medical and public-health bearing in which human life and human health are concerned.

Bacteriologists are not current with the intricacies of zoological nomenclature, and it would appear reasonable if they ask that zoologists use *unambiguous names* for genera and species which come into consideration from a public-health viewpoint.

In classifying the parasites reported for "*Simia*" and for "*Pithecus*" we confess to having encountered material difficulties, and we do not feel justified in assuming the responsibility of confusing medical literature further by urging a continuation of *ambiguous names* like *Simia*, *Pithecus*, and *Simia satyrus*. The responsibility involved is altogether too great to be assumed, for it is entirely conceivable that it involves the life or death of some (however few) human beings because of confusion of results.

On basis of the foregoing argument, we agree with the 22 mammalogists (who seek suspension of rules) in the view that an extraordinary case of nomenclature is presented. In order to prevent "greater confusion than uniformity" it would be wise to request the International Commission to reconsider the case on basis of the more complete data here submitted, and with a view to suspension of the rules (under its plenary power) to meet the situation which has arisen.

Our viewpoint differs, however, from that of the 22 specialists in mammalogy as to the course to be pursued.

1. *Pithecus*, *Simia*, and *Simia satyrus* are in a hopeless stage of confusion which in our opinion can best be solved by an absolute suppression of these names by the International Commission. If this be done—

2 (3; 4). *Theranthropus* 1828, *Chimpansee* 1831, and *Anthropopithecus* 1838 are the next three names to be considered as generic names for the chimpanzee. As *Theranthropus* 1828 is a "sales catalogue name," therefore subject to discussion as to availability, we concede to the mammalogists its rejection. It is not clear to us, however, how such a long name of difficult pronunciation as *Anthro-*

popithecus 1838 is preferable to the earlier, short, *Chimpansee* 1831 of easy pronunciation.

Accordingly, we find ourselves at friendly issue with the mammalogists, but we retain an open mind to listen to the arguments which have induced 22 specialists to reject *Chimpansee* and to select *Anthropopithecus*. We suspect that they momentarily overlooked the existence of *Chimpansee* 1831.

As specific name for the type species of chimpanzee (assuming that *satyrus* is to be rejected), the following come into consideration: *maior* 1777, *minor* 1777, [troglodytes 1779 is dead,] *pongo* 1792, *jocko* 1792, [pygmaeus 1796 is dead,] [niger 1812 is dead,] *leucoprymnus* 1831, *tschego* 1855, *chimpanse* 1856, *calvus* 1860, *vellerosus* 1862, *koolookamba* 1860 or 1862, *aubryi* 1866, *schweinfurthi* 1872, [fuliginosus 1875 is dead; not 1821,] *marungensis* 1887, [fuscus 1894 is dead; not 1792,] *tulpai* 1902, *raripilosus* 1904, etc.

Priority calls for the acceptance of *maior* [cf. *major*] and we raise no objection to this name; but we see nothing except priority in its favor. There would be distinct advantages in the arbitrary selection of *chimpanse* 1856 as type species, but this can be done only by the International Commission under its plenary power to suspend the rules; we would welcome this action.

3 (2). *Macaca* 1799, type *inuus*^s = *sylvanus*, would automatically become the generic name for the Barbary ape; the question as to subgenera or distinct genera will eventually settle itself on basis of anatomical study and the principle of genotypes.

4 (2). *Pongo* 1799, type *borneo*^s = *pygmaeus*, automatically becomes the generic name for the orang-utans. From our viewpoint we distinctly dislike this subjectively, but do not find ourselves in a position to raise objective arguments against either *Pongo* 1799 or *pygmaeus* 1760. If the specialists in mammalogy have any objective arguments which would kill both of these names and make it possible to accept "orang-utan" as generic name and *orang* 1866 as the type species, we would welcome the proof; but we see no outlook for such a desideratum, so we bow to the rules and adopt *Pongo pygmaeus* unless and until this combination is set aside objectively. Of the numerous competing names, cf. the following: *pygmaeus* 1760, *agrias* ca. 1800, *borneo* 1799, *wurmbii* 1808 (*wurmbii* 1812, *wurmbi* 1913), [indicus, rufus, 1816, dead], *abelii* 1826, *morio* 1836, *wallacei* 1839, *bicolor* 1841, *brookei* 1853 (*brooki*^e 1913), *owenii* 1853 (*oweni*^e 1913), *curtus* 1855, *orang* 1866, *sumatranus* 1896, and the subspecies or "races of *satyrus*^d and *sumatranus*" (namely *abongensis*, *batangtuensis*, *dadappensis*, *deliensis*, *genepaiensis*, *landakkensis*, *langkatensis*, *ran-taiensis*, *skalauensis*, *tuakensis*, all 1896), *edwardi*^m 1902.

HOW CAN SIMILAR CONFUSION BE INHIBITED IN THE FUTURE?—From the standpoint of this question, zoologists can easily be divided into

two general groups which grade into each other, namely: Group *a* includes those who would enforce the rules because they believe that the existence of confusion is due to their nonenforcement; group *b* includes those who hold that the "retroactive" [?] action of the law of priority, etc., is accountable for present confusion and who are opposed to the rules.

We take the liberty of placing our premises further back than the premises of either group *a* or group *b*, namely, differences in nomenclature are due to various causes:

(1) Inevitable changes of name dependent upon advance in classification, as in the division of older genera into more restricted genera. The old genus *Simia* is now divided into a considerable number of genera; Thomas (1911) distributes the 22 original (1758) species of *Simia* into 11 genera.

(2) We do not all look through the same spectacles in classifying species and genera, and some differences of opinion with some difference of names are in the nature of the subject.

(3) Some authors work under great handicaps as to accessibility of literature, and as a result new names are proposed unnecessarily for units already named. This, however, is not a very serious matter, for synonyms can be easily sunken.

(4) The fundamental difficulty—greater than all others combined—is that as a rule students in zoology have not been taught the grammar of the language they are to hear, speak, and write. As a result we hear people object to the "retroactive" application of principles established in 1751 to names published subsequent to 1757.

That there are legitimate differences of opinion as to the exact application of the rules to some names is not strange. But we are persuaded that the confusion in the nomenclature of *Primates* between 1758 and 1845 is due largely to the point that authors in question had either no or at most imperfect knowledge of the Linnaean rules of 1751; that the confusion between 1845 and 1891 was due to lack of application of the British Association Rules; that the confusion between 1891 and 1926 has been due to a lack of proper application of the International Rules.

Our remedy for the future is, therefore, that the rising generation of students of zoology should be taught *first* that rules exist and *secondly* the principles of the rules.

The amount of zoological grammar to be taught to students would naturally vary with the classes. Thus we would suggest the following as an approximate division of the subject:

I. *To all elementary classes*, as for students contesting for high-school or gymnasium graduation, with zoology as a general elementary or minor course, a brief summary of the *principles* of the Articles 1, 2, 3, 4, 8, 13, 14, 17, 19, 22, 26, and 32 of the International Rules;

with special emphasis on the point that persons with this training are never justified in changing old names for new. This instruction can easily be reduced to one hour of class work.

II. *To all more advanced but subprofessional classes*, as college and university students who elect zoology as a major subject (for bachelor degree) and premedical students, all of Group I; in addition, summary of Articles 5, 6, 7, 9, 10, 11, 12, 18, 20, 21, 23, 24, 25, 27, 28, 29, 31, 33, 34, 35 and 36; with special emphasis on the point that this training is for their *information*, to enable them to read zoology, but that students with this training are never justified in changing old names for new. These students should also know of the existence of the standard nomenclators, such as Agassiz (1842–1846), Scudder (1882–84), Waterhouse (1902; 1912), Sherborn (1902; 1922–27) now being published. This instruction can easily be reduced to two hours of class work.

III. *To all advanced professional classes*, as university students contesting for master's degree, with zoology as major subject and presumably preparing to do research in zoology; all of Groups I and II; in addition, a summary of Articles 15, 16, and 30; a study of several opinions; practical exercise in working out a few simple cases. This instruction can easily be reduced to three or four hours of class work.

IV. *To all advanced students, candidates for the doctor's degree, and those who intend to do original work in systematic zoology*, all of I, II, and III; practical instruction with actual cases, as shown, for instance, in the Opinions. Warning that (see Article 30a) when an author proposes a new name without definitely designating a type he is building a ship without a rudder, a nomenclatorial derelict, and potentially he is causing loss of time and money to his colleagues. Warning that when a person *seriously begins* to study nomenclature he almost certainly discovers some new and wonderful panacea for all nomenclatorial ills; but he later finds, upon more extended experience, that this new drug is in reality no better than the accumulative results of studies from Linné, 1751, down to the present day.

We venture to repeat: *Lack of instruction to students on the principles and practices of nomenclature is the most fundamental factor in confusion in zoological nomenclature. The temporary confusion caused by application of the rules is trivial and inconsequential in comparison.*

As occasional subject for theses for master's or doctor's degree, we suggest the complete indexing of the literature of a single genus, subfamily, family, suborder, or order, according to circumstances. A thesis of this kind would give to the advanced student in zoology invaluable experience for his later professional work, and in addition would constitute a real contribution and desideratum in many groups.

For information of teachers the following editions of the International Rules are cited:

EDITIONS OF THE INTERNATIONAL RULES OF ZOOLOGICAL NOMENCLATURE

1. 1889 (French): Proceedings of the International Zoological Congress held at Paris, with discussion by Blanchard. Published by the Société zoologique de France, 1889, p. 405-425, 7, rue des Grands-Augustins. Also published as a reprint 1890 by the Soc. zool. de France.
2. 1892 (French): Proceedings of the 2d International Zoological Congress held at Moscow, with discussion by Blanchard. Published by the Soc. zool. de France, *Mémoires de la Société zoologique de France*, VI, p. 126, 1894. Also published as a repr. by the Soc. zool. de France, 1893.
3. 1895 (French): Reprint containing 1 and 2 published by the Soc. zool. de France.
4. 1897 (French): Report of the commission (not adopted by the congress at Cambridge because it was not unanimous in committee). Published by the Soc. zool. de France, 1897.
5. 1897 (German and English): Above published by Druck von Breitkopf & Härtel, Leipzig, 1898.
6. 1901 (German, French, and English): Proceedings of the 5th International Zoological Congress held at Berlin. Published by Fisher in Jena, 1902, p. 926-972.
7. 1905 (English): The International Code of Zoological Nomenclature as applied to Medicine. Published as Hygienic Laboratory Bulletin No. 24, U. S. Public Health Service, Washington, D. C.
8. 1905 (English, French, and German): Published by F. R. de Rudeval, éditeur, 4, rue Antoine Dubois, Paris.
9. 1907 (English): Proceedings of the 7th International Zoological Congress held at Boston. Published by the University Press, Cambridge, Mass., U. S. A., 1912, p. 39-53.
10. 1913 (English): Proceedings of the 9th International Zoological Congress, held at Monaco. Published Rennes, Imprimerie Oberthür, 1914, p. 895-915.
11. 1914 (Italian): Arranged by Monticelli and published Firenze, Tipografia Luigi Niccolai.
12. 1915 and 1916 (English): With summaries of opinions to date published by Smallwood, Washington, D. C.
13. 1926 (English): Proc. Biological Society of Washington, D. C., v. 39, pp. 75-104. (Contains summaries of opinions 1-90.)
14. 1926 (English): Protozoology, v. 2 (4), pp. 1336-1349.
15. ? (German): Senckenbergische Gesellschaft. Dr. R. Richter, Viktoria-Allee 7, Frankfurt a. M., Germany. (Now in preparation?)