

NEW INSTRUCTIONS FOR CONTRIBUTORS TO *MAMMALIAN SPECIES*

- **PURPOSE.** Thank you for adding your time and energy to *Mammalian Species*! Our objective for this peer-reviewed collection of monographs is to provide accurate and concise summaries of the present state of biological knowledge of species of mammals in a standard format that allows easy reference to specific information. Accounts should present specific information or useful summaries, rather than merely citing sources of information or presenting lengthy lists of information without synthesis.

Original skull measurements may be published in *Mammalian Species*, even to supplement published information, but other original observations cannot be presented because the format of accounts does not allow for adequate documentation of methodology or explanation of new ideas. You need not cite every single paper dealing with a species; if not discussed, do not include that paper in the citations. For species with extensive published material, cite recent articles that refer to older articles on the same topic.

- **GENERAL INSTRUCTIONS.** Manuscripts generally should be no longer than 50 double-spaced pages [Times Roman 12 point] including Literature Cited. Along with the 3 basic images (1 of the mammal, the skull/mandible plate [Appendix 1], and a distribution map), 2–3 additional images depicting, for example, behavior and habitat, and short audio and video clips will be considered in the peer review process. Consult with Editor before submitting longer manuscripts. *Mammalian Species* accounts NEVER include tables.

GENERAL FORMAT

- Except for contact information for the corresponding author on the 1st page, the entire copy must be double-spaced (no triple spacing) throughout, including LITERATURE CITED.
- Text must be in Word; use Times Roman 12-point type size.
- Leave 3-cm (1.2 inch) margins on all sides; do not justify the right margin, do not hyphenate words at the right margin, and do not use single-sentence paragraphs.

STYLE

- ***Examine recent accounts for specific examples of content and format, which changed in 2008.***
- Keep the mammal, not the authors of research papers, as the subject of sentences when possible.
- Use American spelling conventions, but use exact spelling of titles and journal names in the Literature Cited.
- Italicize only scientific names, statistical parameters (n , SD , SE), and foreign words; do not use bold or underlining.
- Abbreviate the genus name except on 1st usage within a section and at the start of a paragraph.
- Use spaces around operators for statistics e.g., $n = 62$.
- Use the metric system throughout, except in type localities and elevation in synonymies in which English units were used in the original. When converting to metric units, round the converted figures to an appropriate degree of precision (i.e., a nest diameter of 10–12 inches converts to 25–30 cm, not 25.4–30.48 cm, but 3 1/32 inch would equal 7.7 mm).
- Use hanging indents for the synonymy and LITERATURE CITED, and a single tab (0.5 inches) for paragraph indentation.
- Use an en-dash (found in Symbol section of Word) to separate ranges e.g., 4–6, October–December. Otherwise write as from 4 to 6, from October to December.
- Consult *Information for Contributors* available at the ASM website for formatting questions not addressed in this document. For abbreviations not presented in the *ASM Guidelines*, follow the International System of Units (SI; National Bureau of Standards Special Publication, United States Department of Commerce).

- References in text are to be in alphabetical order with semicolons separating citations. Do not put a comma between the author and year (except in the synonymy or when indicating taxonomic authority elsewhere) and do not italicize “a” or “b” for citations with the same authors and year (e.g., Hamilton 1987, 1988; Hamilton and Van Den Bussche 1998; Hamilton et al. 1994; McBee 1996a, 1996b). Do not place 2 parenthetical comments next to each other. Instead combine them and separate the material with an em-dash (e.g., parenthetical information—Author 2002).

- **SECTION FORMAT**

Please follow the specific format in published accounts published beginning 2008. Format the 1st page of the manuscript as indicated in Appendix 2.

Title.—Always “*Genus species* (Order: Family)”

Name and byline.—Follow example in Appendix 2. Note the convention for providing present addresses.

Abstract.—The abstract can be **no longer** than 125 words and is a concise 4–5 sentence summary of the account. The 1st sentence should always begin “[Genus-species name Authority, Date] is a [caprid] commonly called the [black goat].” Subsequent sentences must contain and be ordered as follows: general physical, and perhaps unique, characteristics and “is 1 of how many species in the genus [Name]”; statement on general distribution; statement on general habitat preferences; and statement on current conservation status. An example follows:

Abstract.—*Boselaphus tragocamelus* (Pallas, 1766) is a bovid commonly called the nilgai or blue bull and is Asia’s largest antelope. A sexually dimorphic ungulate of large stature and unique coloration, it is the only species in the genus *Boselaphus*. It is endemic to peninsular India and small parts of Pakistan and Nepal, has been extirpated from Bangladesh, and has been introduced in the United States (Texas), Mexico, and South Africa. It prefers open grassland and savannas and locally is a significant agricultural pest in India. It is not of special conservation concern and is well-represented in zoos and private collections throughout the world.

Key words.—Provide up to 8 key words that are not in the title and be sure to include the common name from Wilson and Reeder’s *Mammal Species of the World* (2005, Johns Hopkins University Press, Baltimore) and others in common use, if available.

SYNONYMIES

Synonymies trace the nomenclatural history of a species name from its original designation through any subsequent name changes and combinations, whether by design or error. Authors have 2 choices when preparing a synonymy. In either case, include references for all taxonomic authorities (= classifiers) that are part of the full scientific name; e.g., *Boselaphus tragocamelus* de Blainville, 1816.

PLEASE NOTE: When including type localities within the synonymy, you must present, in quotes, the exact locality given in the original description. Do not use quotation marks around a translation, transliteration, or any other modification of the type locality. Also do not use quotation marks around any words that were not part of the original statement unless you enclose these words in brackets. Please refer to *A Guide to Constructing and Understanding Synonymies for Mammalian Species* (Gardner and Hayssen, *Mammalian Species* 739:1–17, 2004) for examples of type localities.

1. Prepare a **complete species synonymy**, as has been the custom in earlier *Mammalian Species* accounts, following Gardner and Hayssen (2004, *Mammalian Species* 739:1–17). This approach provides a complete record of a species’ nomenclatural placement through time and is particularly useful for those species whose scientific names have undergone frequent and recent changes. Complete species synonymies can be challenging to construct, and some authors may wish to involve a colleague with nomenclatorial expertise and access to old, and often rare, literature through museum-based comprehensive libraries; such involvement

may merit authorship, which should be discussed candidly early in the process. All entries must be in chronological order and must include authority, date, page reference, appropriate descriptor, and complete citation in the Literature Cited Section. Add “Synonymy (or Synonymies) completed Day Month Year” at the appropriate place after abstract. NOTE: A generic synonymy for the species account under preparation will be requested by the Editor if a synonymy of the genus has not been published already in a *Mammalian Species* account. Literature Cited section should contain all references cited in the text and the references for all taxonomic authorities (= classifiers) that are part of the full scientific name; e.g., *Boselaphus tragocamelus* de Blainville, 1816

2. Prepare a **simplified species synonymy**, following the standard format, punctuation, and content outlined in Gardner and Hayssen (2004, *Mammalian Species* 739:1–17) and using Wilson and Reeder’s *Mammal Species of the World* (2005, Johns Hopkins University Press, Baltimore) as a minimum starting point. For this approach, authors must include: 1) original usage of the *primary* (= *currently used name*) species-level name, 2) every unique species-level synonym attributable to the primary species-level name, and 3) name combinations (generic changes, demotion to subspecies, etc.) through which *only* the *primary* species name (not every synonym) has traveled. All entries must be in chronological order and must include authority, date, page reference, appropriate descriptor, and complete citation in the Literature Cited Section. NOTE: A generic synonymy for the species account under preparation will be requested by the Editor if a synonymy of the genus has not been published already in a *Mammalian Species* account.

CONTEXT AND CONTENT. Immediately after the synonymy(ies), provide the order, suborder, family, subfamily, and tribe. **Please follow taxonomy as presented in Wilson and Reeder—*Mammal Species of the World*, 3rd ed.** Note whether or not the genus and species are monotypic; if not, explain. See recently published accounts for examples.

NOMENCLATRURAL NOTES. Include this subsection only after the **species’** “Context and Content” if matters of nomenclature or nomenclatural history are unclear in the synonymy and need further explanation. Include “(see Nomenclatural Notes)” at the end of each entry in the synonymy that will be discussed in this subsection. The following could be included: variations in the vernacular name, etymological origin of the generic and specific names, and common names by language or country of origin.

DIAGNOSIS

This section should provide readers **only** with information necessary to distinguish the species being discussed from similar or closely related taxa. Characters that singly or collectively distinguish the taxon from other taxa should be presented in a comparative manner. Comparisons should be quantitative and meaningful alone, e.g., “length of maxillary tooththrow at alveolar rim > 15 mm,” rather than “teeth larger.” Generic or familial characters should not be included in a species diagnosis, except when the genus is monotypic and comparisons are being made between genera.

GENERAL CHARACTERS

This section contains characters not strictly diagnostic. A general description in objective and quantitative terms should be included here. Information on color, external (length of head and body, length of tail, length of hind foot, length of ear) and cranial measurements (Fig. 2 of skull images is typically 1st referenced in this section), and sexual and age differences should be included. When presenting quantitative data, do not use contrived acronyms. See previous accounts for presentation of measurements for different groups (subspecies, sexes, geographic regions). Detailed descriptions and illustrations in the literature may be cited.

DISTRIBUTION

State the geographic range in general terms. Refer to the figure illustrating the distribution and cite authorities on which the map is based (map must include latitude and longitude). A concise statement of altitudinal or other distributional features or limitations is desired. The historic range in addition to reductions, expansions, or introductions is relevant. A map of the distribution should include subspecies boundaries. Do not include information on habitat, which should be placed in the ECOLOGY section.

FOSSIL RECORD

Summarize data on fossil record of the taxon. Indicate time (age), space (place), and other noteworthy information. Present dates as “years ago,” rather than using abbreviations, such as, “mya” or “B.P.” If no fossil record is known, include as the last statement of the DISTRIBUTION section the sentence “No fossils are known.” A useful starting place is: <http://www.bfvol.org>.

FORM AND FUNCTION

Separate into 2 subsections with the exact headings below, *if* length dictates (i.e., if each section contains ≥ 2 paragraphs).

Form.—Summarize structural or anatomical features of the taxon, if known, from molecular or biochemical through histological to gross anatomy (cite authorities), such as integument and derivatives, mammae and milk, skeletal system (including dentition), muscular system, circulatory system, nervous system (from central to peripheral), respiratory system, digestive system, urogenital system, endocrine system, and general anatomy that transcends separate systems. Dental formula should take the form of: i 1/1, c 0/0, p 1/0, m 3/3, total 18. Make sure the total is correct. Teeth should be referred to by a letter followed by a number, uppercase letters for upper teeth (e.g., M2, P4) and lowercase letters for mandibular teeth (e.g., m2, m1–3). Do not use superscripted or subscripted numbers to designate upper and lower teeth. Vertebral formula should take the form of: 7 C, 13 T, 6 L, 2–3 S, and 26–31 Ca, total 55–60.

Function.—Summarize physiological or other dynamic aspects of function here such as metabolic rate, thermoregulation, water balance, energy balance, circannual cycles, hormonal cycles, and cardio-vascular, respiratory, reproductive, neuroendocrine, digestive, vision, echolocation, and renal aspects.

ONTOGENY AND REPRODUCTION

Separate into 2 subsections with the **exact headings** below, *if* length dictates (i.e., if each section contains ≥ 2 paragraphs).

Ontogeny.—The following aspects should be arranged in a logical and orderly fashion: in utero and postpartum growth and development, description of neonate, postnatal or prepuberal changes, nursing, weaning, reproductive maturity.

Reproduction.—Include aspects of reproductive physiology and cycles, estrous cycles, spermatogenesis, conception and implantation, pregnancy, gestation, parturition, litter size in utero to weaning, lactation duration, breeding season (time and length).

ECOLOGY

Information on relationships of the animal to its environment belongs here. Separate into 6 subsections with the **exact headings and arrangement below**, *if* length dictates (i.e., if each section contains ≥ 2 paragraphs).

You may include < 6 subsections (or none at all) depending on availability of published information; topics listed after each subsection heading below are illustrative and not meant to be inclusive or exclusive.

Population characteristics.—densities, survival and mortality, demography, longevity, sex ratios, fertility, dispersal

Space use.—habitat use, home range, movement, migration, specialized habitat use (e.g., nesting places, burrows), spatial and landscape relations

Diet.—food and water use, foraging strategies

Diseases and parasites.—diseases, ecto- and endoparasites, illness, disease transmission, human interactions

Interspecific interactions.—competition, predation, predator avoidance, community ecology, unique symbioses

Miscellaneous.—unique methods of capture, marking, tracking, recording, censusing, sampling, or collecting; domestication, or breeding in captivity; pharmaceutical or medical uses; other economics

HUSBANDRY

If information is sufficient, provide a stand-alone section with those elements listed immediately above under “Miscellaneous,” such as capture, handling, captivity, captive breeding, and feeding and cage requirements.

BEHAVIOR

If information is sufficient, behavior of the species belongs here. Separate into 4 subsections with the **exact headings and arrangement below**, *if* length dictates (i.e., if each section contains ≥ 2 paragraphs). You may include < 4 of the subsections (or none at all) depending on availability of published information; topics listed after each subsection heading below are illustrative and not meant to be inclusive or exclusive.

Grouping behavior.—sociality, group dynamics, territoriality, fighting, dominance, play, intraspecific interactions (cooperative or agonistic)

Reproductive behavior.—breeding systems, courtship, mating, parturition, parental care, neonatal behavior

Communication.—vocalizations, descriptions of sonographs, scent marking, latrine use

Miscellaneous behavior.—activity patterns, hibernation, aestivation, grooming, foraging, hunting, interspecific associations, unique methods of study

The sections on ONTOGENY AND REPRODUCTION, ECOLOGY, and BEHAVIOR may be combined under the heading ECOLOGY if limited information is available *and* if the subjects seem more easily handled together.

GENETICS

Information on heredity and interactions between heredity and the environment belong here. Separate into 3 sections with the exact subheadings and arrangement below, *if* length dictates (i.e., if each section contains ≥ 2 paragraphs).

Cytogenetics.—karotypic, chromosomes, anomalies

Molecular.—DNA, allelic systems, anomalies

Population genetics.—structure, conservation, genotypic and phenotypic expressions, hybridization
CONSERVATION

If the species is of “special concern,” indicate its status in this section. Published assessments of the status of the species (e.g., rare, endangered, threatened, status undetermined) should be presented. Likely publication sources will include state, national, or international governmental agencies or recognized non-governmental organizations (e.g., World Conservation Union, World Wildlife Fund). This section also can include population and habitat management, contaminant issues, economic impacts, and other human interactions (positive and negative).

REMARKS

Include any information that does not fit into the previously discussed sections. Significant differences of opinion in the published literature on any aspect of the account that deserves more detailed discussion may be included here.

ACKNOWLEDGMENTS

Acknowledgments are now provided in a stand-alone section.

LITERATURE CITED

Consult *Information for Contributors to JM* at the ASM website regarding format and order of citations. Final and job completion reports, unpublished manuscripts, and in-house agency reports are not considered peer-reviewed serial publications and cannot be cited. Theses and dissertations may be cited. In rare instances, despite your extensive efforts, a publication cannot be found and needs to be cited in the text from a secondary source; follow this format “(Desmarest 1816 not seen, cited in [your bibliographic source, including page number]).” Make sure that both sources are cited in the LITERATURE CITED. Small amounts of unpublished material may be included in text as either (pers. comm.) for information obtained orally or (in litt.) for information obtained in writing (e.g., letter, unpublished manuscript, internal agency report).

- Order references strictly alphabetically by author (do not group by number of authors and then alphabetize). Do not use “ibid” or a “long dash” (e.g., em-dash) for repetition of authors.
- For articles in a book, do not put a comma after Pp. xx–xx and do not italicize “in.”
- No comma between journal title and volume. Spell out all journal titles.
- Total pagination for books and theses is not needed; if the work is part of a series indicate the volume or part number after the title.
- Use an en-dash to separate page ranges; e.g., *Journal of Mammalogy* 23:11–26.
- Use 2 spaces to separate items of the citation; e.g., authors, year, title, journal.
- For all books not published in the United States, indicate city and country of publication. For all books published in the United States, indicate city and full name of state of publication (do not abbreviate).
- Italicize all genus and species names regardless of whether they were italicized in the original title of the citation.

At the end of the literature cited section, identify editors by typing:

Associate editors were _____. _____ and _____ reviewed the synonymy[ies]. Editor was _____.

- **FIGURES**

At a minimum, 3 figures must be included in *Mammalian Species* accounts: a photograph of a live animal (or a good quality illustration or image of a prepared specimen, in that order of declining acceptability), a skull plate, and a distribution map. A picture of the animal is the 1st figure referred to in the text, the skull plate is the 2nd figure, and the distribution map is the 3rd figure. Up to 3 additional color images can be submitted depicting behavior, ecology, habitat, etc.; they will be included if deemed useful during peer review. All figures will be published 1 column (8 cm) in width, so prepare them accordingly. All image files (jpg, tiff are best) should be 300 dpi preferred (600 dpi preferred).

PHOTOGRAPH OF LIVE ANIMAL. Include in figure caption name of taxon, where and when animal was photographed, age and sex of animal, name of photographer, and statement of permission for use of the photograph if taken by someone other than one of the authors of the account.

SKULL PLATE. Illustrations of the cranium (dorsal, ventral, and lateral views) and lateral view of the mandible must be included. These either can be good quality images or line drawings. Do not include a scale bar. In the figure legend, indicate age and sex of specimen, the collection locality, full name of museum where specimen is on deposit, catalog number of specimen, **and greatest length of skull** or a similar measure. A statement including the origin of the photographs or name of illustrator (if other than the authors) and permission for use must be included. **All views must be exactly to the same scale.** Guidelines for making the digital skull plate are in Appendix 1.

DISTRIBUTION MAP. Carefully indicate on a sufficiently detailed map, the distribution of the taxon. Be sure the distribution corresponds to the description in text. Differentiate subspecies in some convenient manner, numbering them on the map. List subspecies alphabetically in the figure legend and indicate their numbers. Type localities and fossil sites may be included. Consult previous accounts for general style and format. Cite authorities in figure caption to document distribution of the taxon. Changes in geographic range during historic times may be shown and must be documented.

A border, latitude, and longitude, and a scale bar in kilometers (km) must be included. The meridian in the center of the map should be vertical. If the map represents a limited (i.e., small portion of a continent) geographic range, use an insert of a larger scale map to illustrate where in the world the map represents. Be sure that width of lines and shading used to demarcate distributions of subspecies will be clear when reduced to an 8-cm width (3.125 in) in publication. Reduce the map yourself and carefully examine it for clarity before submission of the manuscript.

- **SAMPLE FIGURE CAPTIONS (please use this format)**

Fig. 1. An adult female *Phenacomys albipes* from 1 mile S Summit, Benton Co., Oregon (KU [University of Kansas, Museum of Natural History] 145695). Used with permission of the photographer B. J. Verts.

Fig. 2. Dorsal, ventral, and lateral views of cranium and lateral view of mandible of an adult male *Phenacomys albipes* (OSUFW [Oregon State University Department of Fisheries and Wildlife mammal collection] 7360) from 6 miles W Blue River, T16S, R3E, Sec. 22, Lane Co., Oregon. Occipitonasal length is 25.73 mm.

Fig. 3. Geographic distribution of *Sciurus griseus*. Subspecies are: 1, *S. g. anthonyi*; 2, *S. g. griseus*; 3, *S. g. nigripes*. Map redrawn from Hall (1981) with modifications.

- **MISCELLANEOUS COMMENTS**

Use simple English, minimize jargon, and use American spelling (e.g., behavior, recognize, gray, color). We are not writing just for professional mammalogists; *Mammalian Species* accounts are used by nonprofessionals. To avoid ambiguous statements, do not use freight-train modifiers, i.e., > 2 modifiers for the same noun. Use numerals for all numbers (6 days, 1 deer, 7 mice, 5-fold) and ordinals (1st mouse, 6th palatal ridge, 3rd ed.), except as the first word of a sentence. Use special word-processing characters if possible; e.g., for ranges of values, use a single en-dash (12–15 eggs), but use "to" with "from" as in “from 3 to 6 ova.”

Appendix 1: Making a Digital Skull Figure

C. Schennum, April 2003

- Compose skull images into single figure; do not upload individual views
 - View order is top to bottom: dorsal, ventral, lateral of skull, lateral of mandible.
 - Orientation of mandible view in relation to lateral skull view should be the most biologically sound.
 - All views face the same direction, ideally towards the interior of the manuscript.
 - All views should be aligned horizontally and vertically.
 - All views must be to the same scale so their anterior and posterior margins line up.
 - If a view is of a different length, it should be resized to match the others. The only exception is when two or more skulls are used.
 - Spacing between views should be constant and as small as is aesthetically pleasing.
 - Background should be solid black and free of any texturing, light-colored flecks, hairs, etc.
 - If necessary, brightness and contrast of the picture can be adjusted to accomplish this, or flecks or hairs can be painted over with the same color as the background. Each view must have the same relative levels of brightness and contrast.
 - The width of the completed figure should be set to 8 centimeters [one column width in printed form.
 - Ideally, the file itself should be no greater than 3 megabytes in size (300-600 dpi), so that it can be easily uploaded in AllenTrack.
 - If the views are photographed with a digital camera, the quality/size of pictures that the camera captures should be set to a low-to-medium level. This will allow for the file size of the final figure to be small.
 - The file name should include the genus and species of the animal, the author's last name, and the figure number. An example would be “GorillagorillaSchennumFig2.tif”
 - A sample figure is provided on the following page.
- * The editor reserves the right to make adjustments to the figure as necessary, e.g. cropping, brightness, and adjustment of contrast.

Sample skull and mandible plate (manuscript Figure 2) illustrating sequence of skull and mandible views as well as alignment of anterior and posterior margins of skull. Image by C. Schennum.



Appendix 2: Example of page 1 format

Send proof to: Name
Address in North America
Telephone, Fax
Email

[Single space contact information of corresponding author]

[Double space ALL text of manuscript]

MAMMALIAN SPECIES XX(XXX):00-00

Boselaphus tragocamelus (Artiodactyla: Bovidae)

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Abstract: *Boselaphus tragocamelus* (Pallas, 1766) is a bovid commonly called the nilgai or blue bull and is Asia's largest antelope. A sexually dimorphic ungulate of large stature and unique coloration, it is the only species in the genus *Boselaphus*. It is endemic to peninsular India and small parts of Pakistan and Nepal, has been extirpated from Bangladesh, and has been introduced in the United States (Texas), Mexico, and South Africa. It prefers open grassland and savannas and locally is a significant agricultural pest in India. It is not of special conservation concern and is well-represented in zoos and private collections throughout the world. DOI: _____.

Key words: antelope, Asia, exotic species, India, ruminant, Texas, ungulate

@ XX _____ 200X by the American Society of Mammalogists

Synonymy [ies] completed _____

Boselaphus de Blainville, 1816

Ant[ilope]. Pallas, 1766:5. Part.

Boselaphus Blainville, 1816:75. Type species *A[ntilope]. picta* Pallas, 1777, by original designation. [etc.]

CONTEXT AND CONTENT. Order Artiodactyla, suborder Ruminantia, infraorder Pecora, family Bovidea, subfamily Bovinae, tribe Boselaphini. *Boselaphus* is monotypic.

Below is a more detailed reference list of style/format issues. Attempt to follow these points.

- | |
|---|
| <ul style="list-style-type: none">• For scientific names, authors use the 3rd edition of <i>Mammal Species of the World</i>. |
|---|

INTERNAL STYLE:

General style:

- serial comma; American spelling, *Webster's* 11th
- follow copy in running text for spelling of country names: Brasil or Brazil both acceptable
- . " , " "; " ":
- i.e., e.g., et al., cf.
- spell out versus always
- ([])
- (= space with words), ($\pm SE$), (= 20 cm), (< 20 cm)
- do not allow 2 sets of parens next to each other: () (); use (item; item) or (item—item)
- instead
- Latin is roman; in vivo, in vitro, in situ
- spell out "male" and "female" in text
- day 1, experiment 4, grid 6, site 1

Hyphenation rules:

- en dashes used in open or hyphenated compounds: *Genus species*–like
- run together the following prefixes with the word following: ante, anti, bi, co, contra, counter, de, extra, infra, inter, intra, micro, mid, neo, non, over, pre, post, pro, pseudo, re, semi, sub, super, supra, trans, tri, ultra, un, under
- do not permit double vowels or triple consonants with the above prefixes; hyphenate these cases, *but* defer to *Webster's* 11th
- retain hyphen if the word that follows is capitalized, is an all-caps abbreviation, or is a numeral
- retain hyphens for clarity if needed
- use an en dash between 2 units of equal weight
- use normal hyphenation rules for units of measure used adjectivally: a 2-ha plot

Nomenclature:

- *Genus species*, then *G. species*, then *G. s. subspecies*
- *Genus species* Bauer and Niethammer, 1959:255
- (= *Boselaphus tragocamelus* de Blainville, 1816)
- follow copy on usage of classifiers and authorities and their punctuation (parentheses, commas, whatever); some may have more than 1 authority
- scientific names of a species used as the subject of a sentence take singular verbs
- spp., sp. not used
- OK to begin a sentence with an abbreviated genus name
- do not begin a paragraph with an abbreviated genus name; spell out

Abbreviations and acronyms:

- Mr., Dr., P.O. Box, St., Ph.D., M.A.
- sentences, but not paragraphs, may begin with an unambiguous abbreviation
- if used 10 or fewer times, do not abbreviate or use acronyms for names of localities, study areas, morphological characteristics, governmental agencies, physiological parameters, and statistical tests
- abbreviations for museums, standard abbreviations for protein loci, chemical elements, and symbols used in math are acceptable when defined at 1st use
- protein loci abbreviations should not contain lowercase letters or be italic

Date and time:

- 1950s, 1903–1944
- 9 March 1999, 28–30 May 1998
- spell out months in full
- 0700 h
- photoperiod: 14L:10D

Geography:

- latitude and longitude: 10°26'N, 67°50'W (degree is ° and prime is ′)
- United States (n); USA in byline only
- United Kingdom (spell out always)
- spell out states in their entirety always: Washington, D.C.; Waconia, Minnesota
- N, E, S, W when giving localities
- legal description for localities: T14N, R10W, SW 1/4 Sec. 2
- Neotropic, Neotropics, Neotropical

TECHNICAL STYLE:**Number style:**

- 0.01 to 10 to 1,000 to 10,000
- use numerals for everything: 2 bears, 1 litter, 3 ml, 8 h
- spell out numbers to avoid confusion: three 6-ml samples
- spell out "one" and "two" when used in a nonspecific sense: on the one hand, an example or two
- spell out numerals and any associated units of measure to begin a sentence
- spell out ordinals at the beginning of a sentence; otherwise, use numerals for all ordinals: 1st, 3rd, 10th
- Spell out ordinals to avoid confusion: first 3 mice
- 6-fold; 5.5-fold; 100-fold
- spell out one-half, two-thirds (n, adj), etc. (except in legal description); change <math><1/4</math> to less than one-fourth

Units of measurement:

- s, min, h, day, week, month, year
- non-SI units of measure are not abbreviated: 4 feet
- l for liter; ml
- use standard SI abbreviations: kg, Hz, MHz, mm, g
- use slash for 2 units; use space and raise to ⁻¹ or whatever for 3 or more units
- magnification: 500×
- centrifuge: 11 × g
- temperature: 11°C

Statistical style:

- spell out statistical acronyms in running text, but allow them to stand in purely statistical situations (in parens giving statistical findings, etc.)
- use italics for statistical tests: *F*, *H*, *R*, R^2 , *Q*, *T*, *U*, *V*, *W*
- ANOVA must be defined at 1st use as analysis of variance
- *SE*, *SD*, *CI*, *cv*, *d.f.*, *F*, *r*, *F*-test; *z*-test
- ($n = 409$); ($P < 0.0001$); ($t = 3.76$, *d.f.* = 2, $P < 0.04$)
- Mann-Whitney *U*-test, Student's *t*-test, a *t*-test with 4 replications
- use \bar{X} with overbar for mean in parentheses with values
- spell out chi-square test in running text; use P^2 in parentheses with values

Math style:

- do not stack superscripts and subscripts
- Greek is roman
- all nonstatistical variables are roman: $x = 11$
- in running text with mathematical operators, space around operators used as verbs: $4 + 8 = 12$
- do not space otherwise: a value >11
- equation 3; (see equation 1)
- numbered display equations use flush-right parenthetical numerals; follow author on whether or not they are numbered

Journal-specific style:

- chromosome: 2n; FN; X and Y chromosomes
- OK to use ranges in running text: 11–40 specimens
- OK to use operators and abbreviations in running text: $>40\%$ did this; ca. 60% did that; measurements (in mm) of males...; measurements (in cm) ...; body mass (g)...
- 16 traps in a 4 by 4 grid
- use "by" and not \times for dimensions: 48 by 16 by 16 cm
- use \times to indicate a true hybrid cross ($F \times G$)
- individual animals should not be called by a name, field catalog number, or lab number
- for units of % only: 15%, 20%, and 25%; from 21% to 23%; 63–100%
- for other units, don't repeat measure: 4, 8, and 11 m
- $9.7 \text{ g} \pm 1.1 \text{ SE}$ (or *SD* or whatever) at 1st use; thereafter, use $9.7 \pm 1.1 \text{ g}$ if you're certain that it is the same value

FIGURE CITATIONS IN TEXT:

- spell out Figure to begin a paragraph; use Fig. and Figs. otherwise
- items are treated the same inside and outside of parentheses
- (Figs. 2 and 3)
- *note*: Figs. 1a and 1b; (Figs. 3a–d)
- (Figs. 3–5)

IN-TEXT REFERENCES:

- author–year format in alphabetical, then chronological, order
- no comma between author and year; comma retained in taxonomic authorities
- semicolon separators
- use et al. with ≥ 3 authors
- "et al.'s" is always incorrect; recast
- include references for all taxonomic authorities (= classifiers) that are part of the full scientific name; e.g., *Boselaphus tragocamelus* de Blainville, 1816
- Baker et al. (1989); (Baker et al. 1989)
- Bohlin and Zimmerman (1982); (Bohlin and Zimmerman 1982)
- (Bradley et al. 1991a, 1991b, 1998)
- (Baker et al. 1989; Block and Zimmerman 1991; Bohlin and Zimmerman 1982; Bradley et al. 1991a, 1991b; Tucker and Schmidly 1981; Zykowski, in press)
- if literature citation occurs in the same parenthetical statement as something else, use an em dash to separate them: (*Canis mesomelas*—Boyer 1987)
- (Cameron 1993:211)
- do not capitalize or abbreviate "table" or "figure" when citing others' published work
- Additional information: ($n = 14$ —Andrews 1916:table ix); Hafter et al. (1992c:345, figure 4)
- Additional information: (Fig. 1; Author year)
- do not use unpubl. data or pers. obs.; use in litt.
- (J. J. Lee, pers. comm.); (R. H. Tamarin, in litt.); give all authors and initials for "in litt."
- edit spellings and years to match references at end and query OK

LITERATURE CITED:

- abstracts of oral presentations delivered at professional meetings and printed separately are not permitted; transfer to text as in litt.
- personal communication, submitted, and under review citations are not permitted; transfer to text as (pers. comm.)
- order strictly alphabetical by author, then chronological
- style a and b citations as 1992a; the a and b may not appear right next to each other in the literature cited section
- use in press in place of year as needed; delete volume number, and if year is supplied, delete and replace with "In press"
- Washington, D.C.
- lowercase after colon or em dash for both journal article titles and book titles

Author rules:

- VAN VOGT, W. A., III
- PETERSON, L. L., JR.
- , AND C. R. LESTER (EDS.).
- PHILLIPPE, J., ET AL.
- use commas with 2 authors
- space between author initials
- use et al. with 7 or more authors; list 1st author, then et al.
- do not use 3-em dash(es) for repeated author or authors

Journal article:

- BROWN, J. S., AND N. B. PAVLOVIC. 1992a. Evolution in heterogeneous environments: effects of migration on habitat specialization. *Evolutionary Ecology* 6:360–382.
- NEVO, E., V. SIMOSEN, AND A. R. TEMPLETON. In press. Starch gel electrophoresis of enzymes—a compilation of recipes. *Biochemical Genetics*.
- spell out journal titles in full
 - delete issue number unless each issue is paginated separately

Book:

- ANDERSON, D. A., AND W. A. SMITH. 1976. *Forests and forestry*. Interstate Printers and Publishers, Inc., Danville, Illinois.
- Title. 2nd ed.
 - provide states spelled out for all cities except for New York
 - provide city, province, Canada; spell out everything
 - repeat the city or country if the name is part of the publisher or university: University of Chicago Press, Chicago, Illinois; Australian Museum, Sydney, New South Wales, Australia
 - do not repeat state in the U.S. if part of the publisher or university: University of Wisconsin, Madison; University of Kentucky, Lexington
 - spell out United Kingdom
 -

Article in book:

- HAYMAN, R. E., AND J. E. HILL. 1971. Order Chiroptera. Pp. 1–73 in *The mammals of Africa: an identification manual* (J. A. J. Meester and H. W. Setzer, eds.). Series 10. Smithsonian Institution Press, Washington, D.C.

Proceedings:

- DUFFIELD, D. A., J. CHAMBERLIN-LEA, J. C. SWEENEY, D. K. ODELL, E. D. ASPER, AND W. G. GILMARTIN. 1987. Use of corneal cell culture for R-band chromosome studies on stranded cetaceans. Pp. 181–202 in *Proceedings of the second marine mammal stranding workshop* (J. E. Reynolds and D. K. Odell, eds.), 3–5 December 1987, Miami, Florida.

Thesis or dissertation:

- STEWART, P. D. 1997. *The social behaviour of the European badger, Meles meles*. Ph.D. dissertation, University of Oxford, Oxford, United Kingdom.
- use "thesis" for bachelors or masters degrees and "dissertation" for Ph.D.

URLs:

- [IUCN] International Union for Conservation of Nature and Natural Resources. 2006. 2006 International Union for Conservation of Nature and Natural Resources Red list of threatened species. www.iucnredlist.org, accessed 7 September 2006.