

Glossary of acarological terminology
(Glossaire de la terminologie acarologique)

edited by

L. van der Hammen

Vol. I

General terminology

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Rijksmuseum van Natuurlijke Historie, Leiden



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INTRODUCTION

Donner un sens plus pur aux mots de la tribu

Mallarmé

An outline of the history of the present glossary of acarological terminology, in its development from initiative to detailed project, was given in the introduction to volume 2 (Opilioacarida), the publication of which preceded that of the general glossary. In the same introduction, and also in a special lexicographic paper (Van der Hammen, 1974a), a concise general view was given of the confusing development of acarological terminology, a development which shows the necessity for the creation of a uniform terminology.

Generally, the progress of a branch of science is closely associated with the development of its terminology: a complete, homogeneous, well-defined set of terms advances comparative study as well as scientific communication. Consequently, a uniform terminology should be developed with the widest possible applicability.

The aim of the present general glossary is indeed to lay the foundations for a terminology applicable not only to mites in general, but to all groups of Chelicerata. It should, in fact, have been written after the completion of the eight special parts of the glossary (vols. 2-9), and after the completion of my comparative studies in Chelicerata (cf. Van der Hammen, 1979a). On the other hand, the special parts of the glossary, and the separate parts of my chelicerate studies cannot be composed without a basic set of general terms. For this reason, the present general volume should be regarded as a compromise: the publication of a more definite edition will not be possible until much later.

The contents of the first, general part of the glossary represent my personal vision on acarology and arachnology. Consequently, special attention is paid to those subjects which particularly interested me, or of which I have made a special study.

At the request of the publishers, the general part of the glossary has been written in English, although an important part of the definitions was originally prepared in French. I hope that the characters of the two languages (and the particular requirements they demand from an

author) have contributed to the clarity, the comprehensibility and the unequivocalness of the definitions.

The entries of the glossary are followed, where possible, by recommended sigla, linguistic data, a definition, synonyms, antonyms, terms of related sense, references to literature, and the translation of the terms into French and German. The references are, for the greater part, based on the literature in my personal library; they generally constitute a first orientation, although sometimes the references are more complete. Because the glossary forms, at the same time, an introduction to Grandjean's work, references to his papers are rather extensive.¹ I have tried to give also detailed references to my own papers. In many cases, I have attempted to discover the original introduction of a term, and to define that term accordingly. Repeatedly, reference is made to a number of basic works, in order to show the usage of terms with reference to a particular structure, within the development of acarology.

As a rule, I have paid special attention to the inclusion, into the glossary, of correctly derived adjectives. This has not been possible in all cases, because the use of some incorrectly formed scientific terms appears to be generally accepted (even in dictionaries).

Some terms (such as morphology, conventions, soma-terminology, tegument, appendages, gnathosoma, phanerotaxy, internal anatomy, reproduction, life-cycle, moulting, individual variation, ontophylogeny, and evolution) constitute general entries into the glossary, because of the many references to related terms, given under these headings.

During the composition of the present glossary, the creation of a number of new terms appeared to be necessary, in order to complete and correct the existing terminology. In the glossary, these entries are preceded by an asterisk. It concerns the following terms: chitonostracum, circumcoxal, gnatho-idiosomatic articulation, gonopody, holotactic, holotaxy, hystero dehiscence, hystero morphosis, larvoid, lyricotaxy, neostase, platysmatium, proterodehiscence, prototactic, prototaxy, pseudotagma, spermatophory, spermatopositor, tarsal scissure, telotarsal scissure, telotarsus 1, 2.

The use of the glossary is again facilitated by a number of appendices: an alphabetic list of synonyms, a list of sigla (letters, abbreviations, numbers and symbolic signs), alphabetic lists of the French and German terminologies, and a bibliography. The present general glossary

¹ The glossary supplements the taxonomic index in my edition of Grandjean's Complete Acarological Works. The Works have now become generally accessible.

is not illustrated. Ample illustration will be given in each of the special parts (as in vol. 2).

Originally, it was my intention to include terms with reference to ecology, microsculpture and the shape of phaneres. Their definitions have been finally excluded in order to restrict the size of the glossary. The terms in question are enumerated under three entries: ecology, microsculpture, shape of phaneres. Definitions can be found in general biological glossaries (e.g. Henderson, Henderson & Kenneth, 1975) and, in the case of microsculpture and shape, also in botanical glossaries (e.g. Stearn, 1973; Locquin, 1956).

In his famous dictionary, Samuel Johnston gave the following definition of a lexicographer: 'A writer of dictionaries; a harmless drudge, that busies himself in tracing the original, and detailing the signification of words.' He knew, from personal experience, the laborious and time-absorbing work, connected with the composition of a glossary. I hope that the present result of my personal drudgery will contribute to the advancement and unity of acarology and arachnology.

I should like to acknowledge here the assistance received from several persons during the preparation of the present glossary. Dr. J. Travé (Laboratoire Arago, Banyuls-sur-Mer) assisted me in the preparation of the first draft of a number of definitions with reference to ontophylogeny and phanerotaxy. Dr. W. Helle (Laboratory of Experimental Entomology, Amsterdam) has critically read part of the definitions, especially those with reference to genetics and parthenogenesis. My colleagues Dr. E. Gittenberger and Dr. L. B. Holthuis (Rijksmuseum van Natuurlijke Historie, Leiden), Mr. D. Macfarlane (Commonwealth Institute of Entomology, London) and Prof. Dr. R. Schuster (Zoologisches Institut, Graz) assisted me in the solution of difficult problems concerning the translation of several terms. I owe them all a deep debt of gratitude.

LIST OF THE ABBREVIATIONS AND SIGNS OF THE GLOSSARY

adj., adjective.

Contr., opposite.

D., German.

F., French.

n., noun.

n.f., feminine noun.

n.m., masculine noun.

n.n., neuter noun.

pl. plural (in references to literature, *pl.* indicates a plate).

Ref., reference(s).

Syn., synonym(s).

v., verb.

V., compare (reference to related terms).

* (asterisk), before a term, indicates a new term.

* (asterisk), before a date, indicates the first introduction of a term.

N.B. In the glossary, synonyms and related terms recorded under a term, are arranged in alphabetic order; references to literature are arranged chronologically (according to the first-cited paper of each author).

A

Abbreviations (appendix 2), *n.pl.* Sigla constituted by shortened words (terms reduced to one or more letters). *V.* sigla. *F.* abréviations, *n.f.pl.*; *D.* Abkürzungen, *n.f.pl.*

Abdomen, *n.* Posterior tagma of Crustacea and Insects. It is not homologous with the chelicerate opisthosoma. *V.* cephalothorax, hysterosoma, opisthosoma, *F.* abdomen, *n.m.*; *D.* Abdomen, *n.n.*

Aberrant, *adj.* Strongly diverging from the normal type, presenting rare, very abnormal, anomalous variations. *V.* abnormal, anomaly, atypical. *F.* aberrant; *D.* aberrant.

Abjugal (*abj*), *adj.* Pertaining to the furrow (or line) separating aspidosoma (prodorsum) and podosoma. Posteriorly, this furrow can be united with the disjugal furrow; it is known from Actinotrichida and Opilioacarida, where it is often incomplete and (partly) indistinct. *V.* aspidosoma, disjugal, furrow, podosoma. *Ref.* Grandjean, *1970 (236): 820. Van der Hammen, 1972: 11; 1974a: 213. *F.* abjugal; *D.* abjugal.

Abnormal, *adj.* Deviating from the norm; not normal. *V.* aberrant, anomaly, atypical, individual variations. *F.* anormal; *D.* abnormal.

Absence, *n.* State of being away; non-existence. The fact, with reference to an element (organ), of being away from (not occurring at) a place where it is expected to be present (where it is typically present). The absence of an organ can be normal (a normal variation, a vertition, a mutation) or abnormal (an anomaly). *V.* abnormal, anomaly, carency, deficiency, individual variations, mutation, presence-absence discontinuity, vertition. *Contr.* presence. *Ref.* Grandjean, 1939 (59): 3; 1948 (115): 1-2; 1971 (239): 231. *F.* absence, *n.f.*; *D.* Fehlen, *n.n.*

Acarid, *adj.* Pertaining to mites. *F.* acaridien; *D.* Milben-.

Acarida, *n.pl.* Mites. The name refers to an artificial, polyphyletic group of Chelicerata, generally characterized by the presence of a gnathosoma, and by the occurrence of a hexapod larva. *V.* Actinotrichida, Anactinotrichida, gnathosoma, hexapod larva. *Ref.* Latreille, 1802: 63. Nitzsch, 1818: 246. Petrunkevitch, 1955: 93. Van der Hammen, 1961: 178.

Acaridida, *n.pl.* One of the four groups of Actinotrichid mites distinguished here. *V.* Actinotrichida. *Syn.* Astigmata (part) (Canestrini),

- Cryptostigmata (Sarcoptidae) (Berlese), Sarcoptiformes (part) (Reuter). *Ref.* Canestrini, 1892: 564-569. Berlese, 1897: 1-190, pls. 1-15. Reuter, 1909: 246. Van der Hammen, *1968c: 405-406; 1972a: 288.
- Acarization**, *n.* Development, in the course of evolution, of a mite habitus (especially characterized by the presence of a gnathosoma). Two groups of Chelicerata have been subject to acarization, viz., Actinotrichida and Anactinotrichida: *V.* arthropodization, gnathosomatization. *Ref.* Athias-Henriot, *1970: 73-74; 1973: 257. *F.* acarisation, *n.f.*; *D.* Acarisation, *n.f.*
- Acarocecidium**, *n.* Gall (excrecence produced on plants) caused by gall-mites. *V.* domatium. *F.* acarocécidie, *n.f.*; *D.* Acarocecidie, *n.f.*
- Acarological**, *adj.* Pertaining to acarology, to the study of mites. *F.* acarologique; *D.* acarologisch.
- Acarologist**, *n.m.* Specialist in acarology. *F.* acarologue, *n.m.*; *D.* Acarologe, *n.n.*
- Acarology**, *n.* Branch of zoology, dealing with mites. The science of mites. *F.* acarologie, *n.m.*; *D.* Acarologie, *n.f.*
- Acarus**, *n.m.* Oldest generic name referring to mites. The first-known use of it is by Aristotle (Historia Animalium, book V, chapter 32), where the word *akari* is a singular noun; the name is supposed to refer to *Carpoglyphis lactis* (L.). From the Greek singular noun *akari*, the Latin singular noun *acarus* has been derived. The name *acarus* was used by Scaliger (1557) as referring to the itch mite of man. Linnaeus (1735) classified four species of mites (a tick, a *Parasitus*, the itch mite of man, and a *Trombidium*; together with a Pseudoscorpion and an Insect) with his genus *Acarus*; in 1758 his genus *Acarus* comprised 31 species (among which two species of Pseudoscorpions; three species of mites were classified with the Insect genus *Pediculus*). As a result of a decision of the International Commission on Zoological Nomenclature, *Acarus siro* L. is now considered the type-species of the genus *Acarus*. Although the word *siro* (first mentioned in literature in 1363) originally referred to itch in man (related names are cited for many languages), *Acarus siro* L. is considered the valid name of the flour mite (= *Tyroglyphus farinae* (L.)). The gender of the name *Acarus*, although sometimes regarded as neuter, is now officially decided as masculine. *Ref.* Linnaeus, 1735: tab. Regnum animale (sub. Aptera); 1758: 615. Oudemans, 1926: 4-11, 215-218, 265-266, 274-275. Anonymous, 1929: 20-24; 1958: 418-422; 1958a: 75-86.
- Accessory**, *adj.* Additional. Qualifies, in leg chaetotaxy, those tarsal setae which appear after the larval stage (in the case of legs I-III) and after the protonymphal stage (in the case of leg IV). Accessory setae are

inserted proximally of the fundamental setae; they are arranged in verticils and files. They are defined by the file of which they form part, and by the level of formation (accessory setae are idionymous and eustasic). *V.* eustasic, file of phaneres, fundamental, idionymy, verticil. *Ref.* Grandjean, 1941 (70): 42-43, 47-50; 1958 (190): 277-308, figs. 1-6. *F.* accessoire; *D.* akzessorisch.

Accessory glands. Glands in relation with genital ducts. They are known from the males of many mites and, more rarely, from females where they are less developed. They can be unpaired or occur in one or more pairs (sometimes even be numerous). *V.* male reproductive system. *Ref.* Vitzthum, 1931: 12, 40, 71, fig. 89; 1940: 398, 400-401, 403, 412, 430, 432, 437-438, 440-443, 449. Woodring, 1970: 429, 431, 433-435, 440, 450, figs. 1-2, 8-10, 13-14, 23. Witte, 1975: 265-266, 271; 1975a: 153, fig. 1. *F.* glandes accessoires; *D.* akzessorische Drüsen.

Acetabular, adj. Pertaining to an acetabulum. *F.* acétabulaire; *D.* acetabular.

Acetabulum (*ac.*), *n.* Socket or cavity of the prosomatic exoskeleton, in which the base of an appendage (coxa or trochanter) is articulated. *V.* cotyloid cavity, coxa, promotor/remotor swing, trochanter. *Ref.* Michael, 1884: 130, 328. Grandjean, 1952 (140): 24-27, figs. 1, 2; 1968 (233): 359-363, fig. 1. Van der Hammen, 1968: 32. *F.* acétabulum, *n.m.*; *D.* Acetabulum, *n.n.*

Acondylar, adj. Pertaining to an articulation (eudesmatic or adesmatic) without condyles. *Ref.* Couzijn, 1974: 382. *F.* acondylien; *D.* acon-dyl.

Acron, n. Anterior, non-segmental part of the precheliceral region, originally at the anterior extremity of the body. In Spiders, in the course of embryonic development, some parts of acronal origin are integrated in the rostral gland, whilst other parts constitute the archicerebrum. In mites, the naso (in Actinotrichida) and the intercheliceral gland could be of acronal origin. *V.* intercheliceral gland, naso, precheliceral, telson. *Ref.* Janet¹, *1899: 295; 1899a: 12-14. Vandel, 1949: 93, 95, 96-98, 101. Legendre, 1958: 213-214; 1959: 396, 408, 449-450. *F.* acron, *n.m.*; *D.* Akron, *n.n.*

Acronal, adj. Pertaining to the acron. *F.* acronien; *D.* akronal.

¹ In Janet's original definition of the term (referring to insects), the acron comprises several anterior somites. The term is now defined in a more restricted sense.

Actinedida², *n.pl.* One of the four groups of Actinotrichid mites distinguished here. *V.* Actinotrichida. *Syn.* Prostigmata + Myobiidae (Kramer), Prostigmata (part) + Hydracarina + Astigmata (Vermiformia) (part) (Canestrini), Prostigmatida (Van der Hammen, 1968 a), Trombidiformes (part) (Cunliffe), Trombidiformes (part) + Eriophyiformes (Phytoptiformes) (Reuter). *Ref.* Kramer, 1877: 219–247. Canestrini, 1892: 564–565, 569–578. Reuter, 1909: 246. Cunliffe, 1955: 209–218. Van der Hammen, 1968a: 275–276; 1968c: 405; 1972a: 280–281, 287.

Actinopilin, *n.* Axial, anisotropic matter of the Actinotrichid setae, exhibiting strong birefringence, optically uniaxial, negative, optically heterogeneous, with radial structure. In a transverse section of a seta, the optic axis is everywhere a radius of the circle of section. Actinopilin is iodophile and insoluble in basic hypochlorites. *V.* anisotropic, birefringence. *Syn.* actinochitin(e) (Grandjean, 1935, 1947, 1954; Van der Hammen, 1961). *Ref.* Grandjean, 1935 (26): 36–37; 1935 (27): 119; 1947 (113): 306, 310–312; 1954 (162): 344; *1962 (209): 264; 1970 (236): 798–803, 807. Van der Hammen, 1961: 174–175. *F.* actinopiline, *n.f.*; *D.* Actinopilin, *n.n.*

Actinopilinous, *adj.* Consisting of actinopilin. *F.* actinopilineux; *D.* actinopilinös.

Actinopilous, *adj.* Presenting setae with an axis of actinopilin. *F.* actinopileux; *D.* actinopilös.

Actinotrichida, *n.pl.* Group of mites classified with the chelicerate class Epimerata, and different from Anactinotrichida by: the absence of coxae and sternum, the presence of epimera and a sejugal furrow or interval, the presence (in primitive species) of two femora, the absence of a palpal apotele, the presence of a podocephalic canal, the presence in the setae of an axis of actinopilin, and (generally) the presence of trichobothria. Four groups of Actinotrichida are distinguished here, viz., Actinedida, Oribatida, Acaridida and Tarsonemida. *V.* classification of Chelicerata, classification of mites. *Syn.* Acari-formes (Zachvatkin), Actinochitinosi (Grandjean, 1935–1936), Trombidi-Sarcoptiformes (Oudemans). *Ref.* Oudemans, 1931: 318. Grandjean, 1935 (27): 123–126; 1936 (31): 84–85, 88; 1936 (37): 438–442; 1970 (236): 800–807, 809–812, 813, 814. Zachvatkin, 1952: 10–24, figs. 1–15. Van der Hammen, *1961: 179; 1972a: 275–276, 280–281, 283, 286–287, 289; 1977a: 316.

² The name of the group is derived from the generic name *Actineda* C. L. Koch, 1836: fasc. 1 (6, 7). (Cf. also C. L. Koch, 1842: 57, pl. 6, fig. 39).

- Actinotrichous**, *adj.* Pertaining to Actinotrichida. *F.* actinotriche; *D.* actinotrich.
- Adactyl**, *adj.* Qualifies an appendage, an ambulacrum or an apotele of which the unguis have disappeared or nearly disappeared as a result of regression. *V.* ambulacrum, appendages, apotele, bidactyl, monodactyl, tridactyl, unguis. *Ref.* Grandjean, *1951 (134): 41. *F.* adactyle; *D.* adaktyl.
- Adactyly**, *n.* Condition, of an appendage, an ambulacrum or an apotele, of being adactyl. *F.* adactylie, *n.f.*; *D.* Adaktylie, *n.f.*
- Adanal segment (AD)**. Segment XIV of Actinotrichida, and one of the paraproctal segments; its base level is protonymphal. *V.* anal segment, paraproctal, paraprocts, peranal segment, pseudanal segment. *Ref.* Grandjean, *1939 (64): 279–280. Van der Hammen, 1969: 183–185, 197–198, figs. 1–3; 1970 (62): 9, fig. 1A, tab. 1. *F.* segment adanal; *D.* adanales Segment.
- Additional**, *adj.* Qualifies elements added to a normal system, e.g. the additional porosity in species of the family Galumnidae (Oribatida). *Ref.* Grandjean, 1956 (174): 134. *F.* additionnel; *D.* additionell.
- Adelonymous**, *adj.* Characterized by adelonymy. *F.* adélonymique; *D.* adelonym.
- Adelonymy**, *n.* Quality of an organ of not being capable of receiving a designation which is not collective, and which would have permitted of recognition among other homonymous organs (either in the course of ontogenetic development, or in a comparative study of a natural group). *Contr.* idionymy. *Ref.* Van der Hammen, *1975: 380; 1979: 426. *F.* adélonymie, *n.f.*; *D.* Adelonymie, *n.f.*
- Adenotaxy**, *n.* Arrangement (number and distribution) of the orifices of tegumentary glands. *Ref.* Athias-Henriot, *1969a: 485–492. *F.* adénotaxie, *n.f.*; *D.* Adenotaxie, *n.f.*
- Adesmatic**, *adj.* Qualifies a segment of an appendage, or an articulation between segments of an appendage, without its own tendons and muscles. *Contr.* eudesmatic. *Ref.* Couzijn, *1974: 381; 1976: 461, 490. *F.* adesmatique; *D.* adesmatisch.
- Adoral (or)**, *adj.* Near the mouth. In Actinotrichida the term pertains to the lateral lips (adoral setae, adoral sclerite, etc.). *V.* lateral lips. *Ref.* Grandjean, *1936 (36): 402; 1938 (47): 61, 64; 1957 (182): 242. *F.* adoral; *D.* adoral.
- Adult**, *adj.* With the characters of an adult. *F.* adulte; *D.* adult.
- Adult** (*Ad* in an ontogenetic notation; *ad.* in an enumeration of materials), *n.* Mature animal; last stage of the postembryonic development; single representative of the adult phase. It is marked by the complete

development of the reproductive system and the primary and secondary sexual characteristics. *V.* female, life-cycle, male, maturity, post-embryonic development, sexual dimorphism. *Contr.* immature. *Ref.* Van der Hammen, 1974a: 218; 1978: 55. *F.* adulte, *n.m.*; *D.* Adultus, *n.m.*

Adult moult. Repetition- or growing-moult taking place in the adult stage, and resulting in an isophenon of the adult. Adult moults are normal phenomena in Amblypygi and some groups of Spiders. The rare occurrence of adult moults in mites is probably abnormal (? atavistic). *V.* atavism, growing-moult, isophenon, moulting, repetition-moult. *Syn.* postimaginal molt (Furumizo & Wharton). *Ref.* Michener, 1946: 352-353. Imamura, 1952: 447-451. Robaux, 1974: 95. Furumizo & Wharton, 1976: 730-733, fig. 1. *F.* mue adulte; *D.* adulte Häutung.

Adult phase. Last phase of the postembryonic development. It includes the adult. *V.* adult, life-cycle, phase, postembryonic development. *Contr.* immature phase. *Ref.* Van der Hammen, 1978: 46, 55. *F.* phase adulte; *D.* adulte Phase.

Aedeagus, n. *V.* penis.

Age, n. Moment in ontogeny. The age of an animal with stases is that of his ontogenetic level (convention for the study of evolution). *Ref.* Grandjean, 1951 (136): 274; 1954 (160): 414; 1957 (184): 477. *F.* âge, *n.m.*; *D.* Alter, *n.n.*

Aggenital, adj. Pertaining to the region flanking (in Actinotrichida) on both sides the genital region. *Ref.* Grandjean, *1933 (12): 49, 50, 53, 54, 56, 58, figs. 13, 21; 1933 (13): 218, fig. 3A. *F.* aggénital; *D.* aggenital.

Alassostasy, n. Orthostasic period in the evolution of the life-cycle, characterized by secondary changes in the protostasic life-cycle. These changes refer to neoteny, to regression or inhibition of one or more levels (protelattosis, metelattosis), and to the formation of isophena (plethomorphosis). *V.* evolution of the life-cycle, inhibition, isophenon, metelattosis, orthostasy, plethomorphosis, protelattosis, protostasy, regression. *Ref.* Van der Hammen, *1975: 379; 1978: 55, fig. 6. *F.* alassostasie, *n.f.*; *D.* Alassostasie, *n.f.*

Aleatory, adj. Depending on chance. The term is used to characterize organs which can be either existing or lacking, i.e. organs having a probability of existence unequal to zero or one. *V.* presence-absence discontinuity, vertition. *Ref.* Grandjean, 1939 (56): 1-4. *F.* aléatoire; *D.* aleatorisch.

Alimentary canal. Series of organs for the ingestion and digestion of

food (solid or fluid), and extending from mouth to anus (if present; the gut can end blindly). Generally, the following parts can be distinguished: mouth (and gullet), pharynx, oesophagus, midgut (incl. stomach) and caeca, hindgut (rectum) and anus. *V.* anus, digestion, gullet, ingestion, mouth, oesophagus, pharynx. *Ref.* Vitzthum, 1931: 10-11, 33-35, 64-65, 92-94, 105; 1940: 266-299, figs. 266-304. T. E. Hughes, 1959: 157-164, pls. 46-48. Knülle, 1959: 385-386. Legendre, 1967: 212-218; 1968: 414. *F.* tube digestif; *D.* Verdauungskanal, *n.m.*

Alternation, *n.* State characterized by the repeated succession, by turns, of two different things (example: the alternation, on the legs of certain species, of verticils of four, and verticils of three setae). *Ref.* Grandjean, 1943 (87): 70; 1947 (104): 70-71. *F.* alternance, *n.f.*; *D.* Abwechslung, *n.f.*

Alternation of generations. Occurrence, in the life-history of a species, of two or more different forms belonging to alternating generations, usually with sexual, resp. parthenogenetic reproduction (cyclic parthenogenesis). *V.* parthenogenesis, reproduction. *Ref.* Keifer, 1942: 117-129, figs. 10-11, pls. 165-169, tab. 1-2. *F.* alternance des générations; *D.* Generationswechsel, *n.f.*

Ambulacral, *adj.* Pertaining to an ambulacrum. *F.* ambulacraire; *D.* ambulakral.

Ambulacrum (AM), *n.* Terminal part of a leg, in regular contact with the substratum. It is a functional unit. The essential part of an ambulacrum is constituted by the apotele. It can, moreover, comprise a pretarsus and a pulvillus. Two types can be distinguished: simple ambulacra (without pretarsus) and compound ambulacra (with pretarsus). *V.* apotele, pretarsus, pulvillus. *Ref.* Raspail, *1834: 179. Michael, 1901: 61-62. Vitzthum, 1931: 49-51, figs. 65-67. Grandjean, 1941 (73): 422-429, figs. 1-2; 1943 (88): 303-310, figs. 1-2; 1947 (101): 76-79; 1947 (113): 328-329; 1954 (162): 338-339. Van der Hammen, 1970b: 23. *F.* ambulacre, *n.m.*; *D.* Ambulakrum, *n.n.*

Ambulatory, *adj.* Pertaining to walking. Qualifies appendages with a locomotory function, in contradistinction to those with a tactile or a prehensile function, etc. *V.* locomotion, prehensile, tactile. *F.* ambulatoire; *D.* Geh-.

***Amphidehiscence**, *n.* Type of proterodehiscence, in which the line of dehiscence cuts off part of the prodorsum; ventrally, this line passes in front of the sejugal furrow. In this way the anterior part of the exuviae is completely separated, like a hood (the hatching animal is hooded). This type of dehiscence is known from Erythraeidae (Acti-