

THE DECAPOD CRUSTACEAN GENERA *PLESIONIKA* BATE
(NATANTIA) AND *MUNIDA* LEACH (ANOMURA) IN THE AEGEAN SEA

BY

A. KOUKOURAS¹), A. KALLIANIOTIS²) and D. VAFIDIS²)

¹) Aristoteleio University of Thessaloniki, Department of Zoology, GR-540 06 Thessaloniki, Greece

²) Fisheries Research Institute, NAGREF, GR-640 07 Nea Peramos, Kavala, Greece

***Plesionika antigai* Zariquiey Alvarez, 1995**

Material. — 3 ♂♂, 5 ♀♀ (1 ovig.), sta. 2, off Iraklion, Crete I., depth 200-400 m, silty substratum, 10/vii/1996. Max. Cl ♂ = 25.0 mm; max. Cl ♀ (ovig.) = 28.0 mm.

This Atlanto-Mediterranean species is reported for the first time in the eastern Mediterranean. Up to date it was known from the western (e.g., Zariquiey Alvarez, 1955) and the central Mediterranean (e.g., Manning & Frogliia, 1982), and from the southern Adriatic (e.g., Frogliia, 1972).

***Plesionika giglioli* (Senna, 1903)**

Material. — 1 ♂, 2 ♀♀ (1 ovig.), sta. 4, Tilos I., depth 180 m, silty substratum, 23/vi/1995; 2 ♀♀ (ovig.), sta. 1, off Rethymno, Crete I., depth 120-280 m, silty substratum, 3/vii/1995; 1 ♂, sta. 5, Kos I., depth 150-310 m, silty substratum, 19/vi/1995. Max. Cl ♂ = 10.3 mm; max. Cl ♀ (ovig.) = 12.5 mm.

This endemic Mediterranean species is reported for the first time from the eastern Mediterranean. Up to date, it was known only from the western (e.g., Senna, 1903; Zariquiey Alvarez, 1968) and the central Mediterranean (e.g., Arena & Li Greci, 1973).

***Plesionika heterocarpus* (Costa, 1871)**

Material. — 2 ♂♂, 8 ♀♀ (3 ovig.), sta. 2, off Rethymno, Crete I., depth 100-180 m, silty substratum, 3/vii/1995; 12 ♂♂, 6 ♀♀, sta. 6, off west coast of Kalimnos I., depth 110-120 m, silty substratum, 6/vii/1995; 3 ♂♂, 7 ♀♀ (6 ovig.), sta. 8, off SW coast of Chios I., depth 80-400 m, silty substratum, 16/vi/1995; 4 ♂♂, 7 ♀♀ (3 ovig.), sta. 9, off north coast of Skiathos I., depth 40-120 m, sand-silty and silty substratum, 22/vi/1995; 5 ♂♂, 2 ♀♀, sta. 10, Thermaikos Gulf, depth 60-100 m, silty substratum, 22/v/1996; 5 ♂♂, 6 ♀♀, sta. 11, Thermaikos Gulf, depth 80-160 m, silty substratum, 22/v/1996; 2 ♂♂, 4 ♀♀, sta. 12, Toronaios Gulf, depth 60-100 m, silty substratum, 18/v/1995; 12 ♂♂, 10 ♀♀, sta. 13, off SW coast of Thasos I., depth 150-200 m, silty substratum, 22/v/1995. Max. Cl ♂ = 24.6 mm; max. Cl ♀ = 24.2 mm.

This Atlanto-Mediterranean species was known from the area of the Sea of Marmara (Ostroumoff, 1896), off the east coast of the Peloponnisos (Adensamer,

1898), the west coast of Turkey (Koçatas, 1981; Katagan et al., 1988) and the northern Aegean Sea (Koukouras et al., 1992). It was also known from the western Mediterranean (e.g., Forest, 1965), the central Mediterranean (e.g., Heldt & Heldt, 1954), the Adriatic (e.g., Froglija, 1972) and the Levantine Sea (e.g., Lewinsohn & Holthuis, 1964).

***Plesionika martia* (A. Milne-Edwards, 1883)**

Material. — 1 ♂, 1 ♀ (ovig.), sta. 1, off Rethymno, Crete I., depth 80-300 m, silty substratum, 19/ix/1994; 1 ♂, sta. 9, off the north coast of Skiathos I., depth 80 m, silty substratum, 21/iv/1995; 1 ♂, 1 ♀, sta. 8, off the SW coast of Chios I., depth 75 m, silty substratum, 16/iv/1995. Max. Cl ♂ = 20.1 mm; max. Cl ♀ (ovig.) = 25.1 mm.

This Atlanto-Mediterranean species was known from the Aegean Sea off the east coast of the Peloponnisos and the Sporades Islands (Adensamer, 1898), the west coast of Turkey (Katagan et al., 1988) and the northern Aegean Sea (Koukouras et al., 1992). Also reported from the western Mediterranean (e.g., Adensamer, 1898) the central Mediterranean (e.g., Arena & Li Greci, 1973) and the Adriatic (e.g., Froglija, 1972).

***Plesionika narval* (Fabricius, 1787)**

Material. — 2 ♂♂, sta. 1, off Rethymno, Crete I., depth 120-280 m, silty substratum, 3/vii/1995; 2 ♀♀, sta. 2, off Iraklion, Crete I., depth 50 m, silty substratum, 26/vi/1995. Max. Cl ♂ = 22.6 mm; max. Cl ♀ = 26.2 mm.

This Atlanto-Mediterranean species was known from the northern Aegean Sea, off the Alexandroupolis coast (Drensky, 1951) and in the southern Aegean Sea, south of Rhodos I. and Chalki I. (Thessalou-Legaki et al., 1989). It has been recorded from western Mediterranean (e.g., Zariquiey Alvarez, 1968), the central Mediterranean (e.g., Heldt & Heldt, 1954; Arena & Li Greci, 1973), and the Adriatic (e.g., Pesta, 1918).

Other species of the genus *Plesionika* known from the Aegean sea are:

***Plesionika acanthonotus* (S. I. Smith, 1882)**

This Atlanto-Mediterranean species has been reported in this area from off the NW coast of Crete I. (Adensamer, 1898, as *Pandalus geniculatus*), off the south coast of the Chalkidiki peninsula (Koukouras, 1973) and the west coast of Turkey (Katagan et al., 1988). In the remaining Mediterranean it is known from the western basin (e.g., Cartes et al., 1993), the central Mediterranean (e.g., Arena & Li Greci, 1973) and the Adriatic Sea (e.g., Froglija, 1972).

***Plesionika edwardsii* (Brandt, 1851)**

A cosmopolitan species (Chace, 1985) known in this area from the Evoikos Gulf (Koukouras & Kattoulas, 1974), the Korinthiakos Gulf (Kaspiris, 1990), the Thermaikos Gulf, and the Gulf of Kavala (Koukouras et al., 1992). Also known from the western Mediterranean basin (e.g., Forest, 1965), the central Mediterranean (e.g., Forest, 1967), the Adriatic (e.g., Bombace & Frogliia, 1973), and the Levantine Sea (Holthuis & Gottlieb, 1958).

So, out of the eight species of the genus *Plesionika* known from the Mediterranean, only *P. ensis* (A. Milne-Edwards, 1881) has not been found in the Aegean. This Atlanto-Mediterranean species is known in the Mediterranean only from the coast of Malaga, Alboran Sea (García Raso, 1981).

The species collected of the genus *Munida* are the following:

***Munida curvimana* A. Milne-Edwards & Bouvier, 1894**

Material. — 2 ♂♂, sta. 7, Andros I., depth 100-250 m, silty substratum, 12/vi/1995. Max. Cl ♂ = 17.3 mm.

An Atlanto-Mediterranean species known in the Aegean only from the Saronikos Gulf (Vamvakas, 1970) and in the southern Aegean (Koukouras et al., 1992; D'Udekem d'Acoz, 1995). Known also from the western Mediterranean (e.g., Zariquiey Alvarez, 1968), the central Mediterranean, the Gulf of Taranto (Pastore, 1972), and the Israel coast (Holthuis & Gottlieb, 1958).

***Munida intermedia* A. Milne-Edwards & Bouvier, 1899**

Material. — 2 ♂♂, sta. 3, Astypalea I., depth 280-350 m, silty substratum, 25/vi/1995. Max. Cl ♂ = 8.2 mm.

An Atlanto-Mediterranean species reported in the eastern Mediterranean only from the NW coast of Turkey in the Aegean (Katagan et al., 1988). Known from various localities of the western Mediterranean (e.g., Forest, 1965; Zariquiey Alvarez, 1968), the central Mediterranean (Arena & Li Greci, 1973), and the Adriatic Sea (Števcíć, 1969).

***Munida rutllanti* Zariquiey Alvarez, 1952**

Material. — 3 ♂♂, 2 ♀♀, sta. 8, Chios I., depth 200 m, silty substratum, 18/v/1995; 8 ♂♂, 6 ♀♀, sta. 9, off Skiathos I., depth 250 m, silty substratum, 2/vi/1996. Max. Cl ♂ = 18.0 mm; max. Cl ♀ = 18.1 mm.

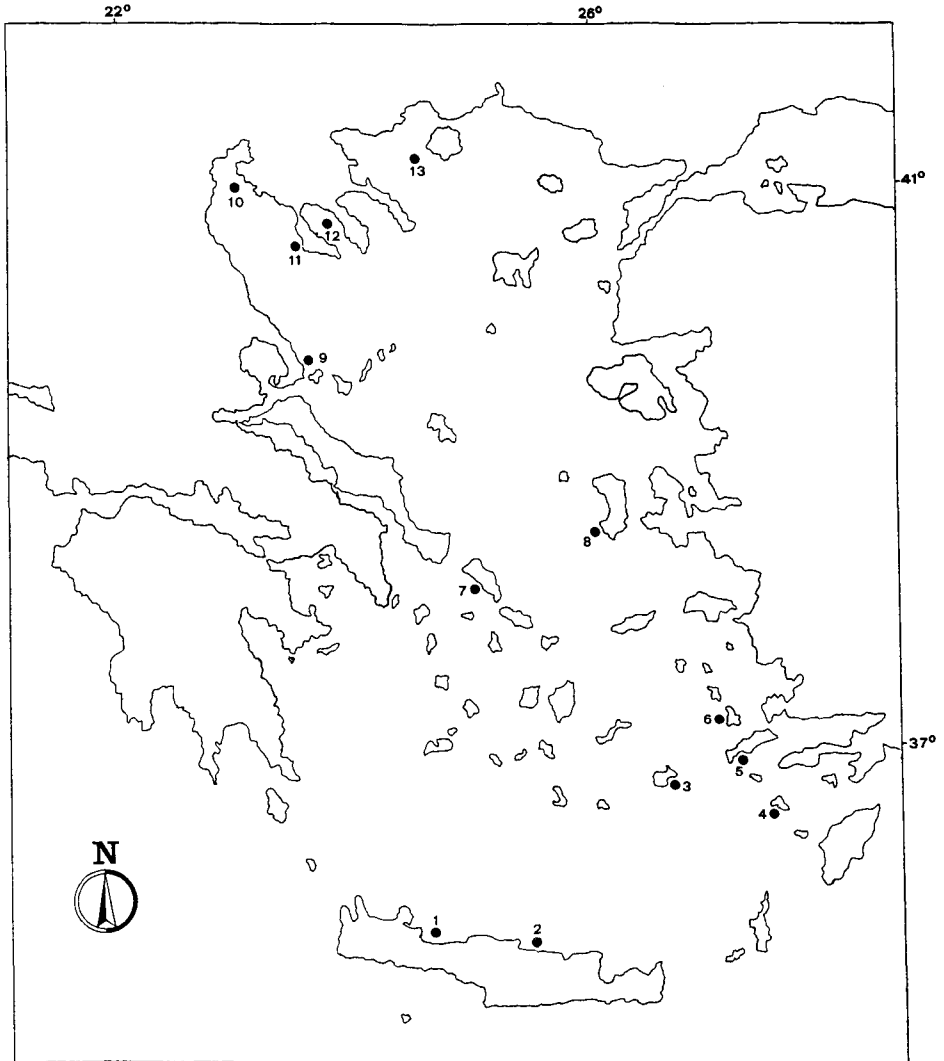


Fig. 1. Map indicating the sampling stations in the Aegean Sea.

An Atlanto-Mediterranean species known in the Aegean from Evoikos Gulf (Koukouras & Kattoulas, 1974), off the coast of the Chalkidiki peninsula (Koukouras et al., 1992) and the SW coast of Turkey in the Aegean Sea (Katagan et al., 1988). It has been reported from only a few localities in the western Mediterranean (e.g., Zariquiey Alvarez, 1968; Sardá & Palomera, 1981).

Other species of the genus *Munida* known from the Aegean Sea are:

***Munida rugosa* (Fabricius, 1775)**

This Atlanto-Mediterranean species is known from various localities in the Aegean (Ostroumoff, 1896; Adensamer, 1898; Koukouras, 1973; Türkay, 1976; Türkay et al., 1987; Koukouras et al., 1992; D'Udekem d'Acoz, 1995), as well as in the western Mediterranean (e.g., Zariquiey Alvarez, 1968), the central Mediterranean (e.g., Pastore, 1972) and the Adriatic (e.g., Heller, 1863; Števcíć, 1969).

***Munida tenuimana* G. O. Sars, 1872**

An Atlanto-Mediterranean species known from the area of the Sea of Marmara (Ostroumoff, 1896) and the northern Aegean (Kisseleva, 1963, as *M. perarmata*). In the remaining Mediterranean, it has been reported only from the western basin (e.g., Senna, 1903; Zariquiey Alvarez, 1968; both as *M. perarmata*), and the Adriatic (e.g., Pesta, 1918).

So, all the five Mediterranean species of *Munida* are also known from the Aegean Sea.

REFERENCES

- ADENSAMER, T., 1898. Decapoden gesammelt auf S. M. Schiff "Pola" in den Jahren 1890-1894. Berichte der Kommission für Erforschung des östlichen Mittelmeeres. XXII. Zoologische Ergebnisse. XI. Denkschr. Akad. Wiss. Wien, **65**: 597-628.
- ARENA, P. & F. LI GRECI, 1973. Indagine sulle condizioni faunistiche e sui rendimenti di pesca dei fondali batiali della Sicilia occidentale e della bordura settentrionale dei banchi della soglia Siculo-Tunisina. Quad. Lab. Tecnol. Pesca, **1** (5): 157-201.
- BOMBACE, G. & C. FROGLIA, 1973. Premières remarques sur les peuplements de l'étage bathyal de Basse Adriatique. Rapp. Comm. int. Mer Médit., **22** (4): 93-94.
- CARTES, J. E., F. SARDÁ & P. ABELLÓ, 1993. Decapod crustaceans collected by deep-water trawls (between 1000 and 2200 m) in the Catalan Area (North-Western Mediterranean). Bios. Macedonia, Greece, **1** (1): 206-221.
- CHACE, F. A., JR., 1985. The Caridean shrimps (Crustacea: Decapoda) of the Albatross Phillipine Expedition, 1907-1910, part 3: Fam. Thalassocarididae and Pandalidae. Smithsonian Contr. Zool., **411**: 1-143.
- DRENSKY, P., 1951. Über Entomostraca und Malacostraca (Cr.) aus dem Agäischen Meer. Ann. Univ. Sofia, (Biol.) **46** (3): 235-250.
- FOREST, J., 1965. Campagnes du "Professeur Lacaze-Duthiers" aux Baléares: Juin 1953 et Août 1954. Crustacés Décapodes. Vie et Milieu, **16** (1-B): 325-413.
- —, 1967. Sur une collection de Crustacés Décapodes de la région de Porto Cesareo. Description de *Portunus pestai* sp. nov. Thalassia Salentina, **2**: 3-29.
- FROGLIA, C., 1972. Preliminary report on the Crustacea Decapoda of Adriatic deep waters. Thalassia Jugoslavica, **8** (1): 75-79.

- GARCÍA RASO, J. E., 1981. Crustáceos decápodos del litoral de Malaga (Region Sur — Mediterranea Española). Familia Pandalidae Haworth 1825. Trab. Monogr. Dep. Zool. Univ. Granada, (n.ser.) **4** (3): 83-92.
- HELDT, H. & J. H. HELDT, 1954. Les Crustacés comestibles des mers Tunisiennes et leur pêche. Annales Stat. océanogr. Salammbô, **9**: 3-16, pls. 1-10.
- HELLER, C., 1863. Die Crustaceen des südlichen Europa. Crustacea Podophthalmia. Mit einer Übersicht über die horizontale Verbreitung sämtlicher europäischer Arten, i-xi, 1-336.
- HOLTHUIS, L. B. & E. GOTTLIEB, 1958. An annotated list of the Decapod Crustacea of the Mediterranean coast of Israel with an appendix listing the Decapoda of the Eastern Mediterranean. Bull. Res. Council. Israel, **7** (B): 1-126.
- KASPIRIS, P., 1990. Deep-water Crustacea (Decapoda, Natantia) from the Korinthiakos Gulf, Greece. Ann. Musei Goulandris, **8**: 263-267.
- KATAGAN, T., A. KOÇATAS & H. BENLİ, 1988. Note préliminaire sur les Décapodes bathyaux de la côte Turque de la mer Egée. Rapp. Comm. int. Mer Méditerranéen, **31** (2): 23.
- KISSELEVA, M. I., 1963. La distribution du benthos quantitative et qualitative dans la mer Egée. Trudy Sevastopol biol. Stat., **16**: 192-200. [In Russian.]
- KOÇATAS, A., 1981. Liste préliminaire et répartition des Crustacés Décapodes des eaux Turques. Rapp. Comm. int. Mer Méditerranéen, **27** (2): 161-162.
- KOUKOURAS, A., 1973. Contribution to the study of the decapod Crustacea of Greece. Hellenic Oceanol. Limnol., **11**: 745-770. [In Greek.]
- KOUKOURAS, A., C. DOUNAS, M. TÜRKAY & E. VOULTSIADOU-KOUKOURA, 1992. Decapod crustacean fauna of the Aegean Sea: New information check list. Affinities. Senckenbergiana marit., **22** (3/6): 217-244.
- KOUKOURAS, A. & M. KATTOULAS, 1974. Benthic fauna of the Evvoia coast and Evvoia Gulf, III. Natantia (Crustacea: Decapoda). Sci. Ann. Fac. Phys. Mathem. Univ. Thessaloniki, **14**: 369-382.
- LEWINSOHN, C. & L. B. HOLTHUIS, 1964. New records of decapod Crustacea from the Mediterranean coast of Israel and the eastern Mediterranean. Zoöl. Meded., Leiden, **40** (8): 45-63.
- MANNING, R. B. & C. FROGLIA, 1982. On a collection of decapod Crustacea from southern Sardinia. Quad. Lab. Tecnol. Pesca. Ancona, **3** (2/5): 319-334.
- OSTROUMOFF, A., 1896. Comptes-rendus des dragages et du plancton de l'expédition du "Selianik". Bull. Acad. Sci. St. Petersburg, **5**: 33-92.
- PASTORE, M., 1972. Decapod Crustacea in Taranto's and Catania's Seas and a discussion on a new species of Dromiidae (Decapoda, Brachyura) in the Mediterranean Sea. Thalassia Jugoslavica, **8** (1): 105-117.
- PESTA, O., 1918. Die Decapodenfauna der Adria: i-x, 1-500. (Leipzig).
- SARDÁ, E. & I. PALOMERA, 1981. Crustáceos Decápodos capturados durante la campaña "Mediterraneo II" (Marzo, 1977) en el Mar Catalan. Res. exp. Cient., **9**: 143-150.
- SENNA, A., 1903. Nota sui Crostacei Decapodi. Le esplorazioni abissali nel Mediterraneo del R. Piroscrafo "Washington" nel 1881. II. Bull. Soc. ent. Italiano, **34**: 235-367.
- ŠTEVČIĆ, Z., 1969. Lista desetonožnih rakova Jadrana. Bioloski Vestnik, **17**: 125-134.
- THESSALOU-LEGAKI, M., A. FRANTZIS, K. NASSIOKAS & S. HATZINIKOLAOU, 1989. Depth zonation in a *Parapandalus narval* (Crustacea, Decapoda, Pandalidae) population from Rhodos Island, Greece. Estuar. coast. Shelf Science, **29**: 273-284.
- TÜRKAY, M., 1976. Ein Fund von *Paragalene longicrura* (Nardo, 1886) in der Agäis (Decapoda: Brachyura). Crustaceana, **30** (1): 108.
- TÜRKAY, M., G. FISCHER & V. NEUMANN, 1987. List of the marine Crustacea Decapoda of the northern Sporades (Aegean Sea) with systematic and zoogeographic remarks. Inv. Pesquera, Barcelona, **51** (suppl. 1): 87-109.

- UDEKEM D' ACOZ, C. D', 1995. Contribution à la connaissance des Crustacés Décapodes Helléniques II: Penaeidea, Stenopodidea, Palinuridea, Homaridea, Thalassinidea, Anomura, et note sur les Stomatopodes. Bios, Macedonia, Greece, **3**: 51-77.
- VAMVAKAS, C., 1970. Peuplements benthiques des substrats meubles du sud de la Mer Egée. Téthys, **2** (1): 89-129.
- ZARIQUIEY ALVAREZ, R., 1955. Una nueva especie del género *Plesionika* Bate. Decápodos españoles VIII. Publ. Inst. Biol. aplic. Barcelona, **19**: 105-113.
- —, 1968. Crustáceos Decápodos Ibéricos. Invest. Pesquera, Barcelona, **32**: 1-510.

First received 8 April 1997.

Final version accepted 17 June 1997.

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

The following Opinion, partly dealing with Crustacea, has been published on 30 June 1998 on pp. 124-128 of vol. 55 part 2 of the Bulletin of Zoological Nomenclature. Copies of this Opinion can be obtained free of charge from the Executive Secretary, I.C.Z.N., c/o The Natural History Museum, Cromwell Road, London SW7 5BD, United Kingdom (e-mail: iczn@nhm.ac.uk).

Opinion 1897. *Glomeris* Latreille, 1802 (Diplopoda), *Armadillo* Latreille, 1802, *Armadillidium* Brandt in Brandt & Ratzeburg, 1831, and *Armadillo vulgaris* Latreille, 1804 (currently *Armadillidium vulgare*) (Crustacea, Isopoda): generic and specific names conserved.

NOTICE TO CONTRIBUTORS

1. 'Crustaceana' publishes papers, dealing with Crustacea, from all branches of zoology.
2. Papers submitted must be in English, French, or German. US English will be allowed for native speakers from the U.S.A. only; other authors should express themselves in UK English. Papers in French or German will require an English translation of the title. An abstract (résumé, Zusammenfassung) of up to 300 words, both in English and in a different language, has to precede the main text. Translation of titles and abstracts can be provided for by the editors.
3. Papers should, as a rule, not exceed 32 printed pages in length. If longer papers are accepted, the supernumerary pages may be charged.
4. Papers should preferably be under the responsibility of three authors at most. Systematic papers with more than three authors will invariably be refused.
5. Manuscripts are to be sent in duplicate to the secretary of the Editorial Board (see inside front cover) or may be submitted through any other member of the board, but definite acceptance can be executed exclusively through the office of the Secretary.
6. Manuscripts should be in their final form for printing. The text should be concise and clear and, as a rule, contain no footnotes. It must be type-written on one side only of good quality white typing paper. Double spacing between the lines and broad margins have to be used throughout the manuscript, including the lists of references and captions.
7. Manuscripts should contain no other indications than those for italics, and these should be restricted to (1) scientific names of genera and lower categories and (2) statistical symbols. Even if these have already been typed in italics (which preferably should not be the case), they are to be singly underlined by the author(s). All other editorial indications are to be left to the editors.
8. Manuscripts refused either for lack of space or because of insufficient quality, will be returned by ordinary (air)mail, not registered. Authors are thus advised to await acceptance prior to providing the original artwork, otherwise possible loss of this will be entirely their own responsibility. Once accepted, the availability of a version of the paper on floppy disk (WP 5.0 or 5.1 for DOS or WORD for MacIntosh) will be appreciated.
9. Scientific names of the species category must be followed by author and date at least once in the main text, preferably the first time mentioned, and also once in every caption that states the name. In table headings mention of author only will suffice. Brackets have to be properly placed according to the International Code of Zoological Nomenclature.
10. Units of variables should conform to the Système International (SI).
11. Tables may be used only if absolutely necessary but, even then, ought to be kept to a minimum. Each table must be typed on a separate sheet of paper, be provided with a concise but clear heading, and be numbered by a Roman numeral.
12. Illustrations must be in final form for printing. As a rule, the original artwork will be required for that purpose. Line drawings in black ink on good quality drawing paper or on tracing paper mounted on rigid white cardboard. Photographs and other halftone illustrations should be produced on white glossy paper and be mounted on rigid white cardboard. For all figures goes that both lettering and mounting should be of professional quality and be provided for by the author(s). Figures that are damaged in any way cannot be accepted. Therefore, they ought to be packed and mailed with adequate protection and in a flat position: not in a scroll.
13. Illustrations should preferably be prepared in such a way, that they all require the same reduction. Their ultimate dimensions, including the caption, should fit within the 126×193 mm page format. Reduction factors should range between 33 and 75% of the original size; factors below 25% are not acceptable. Authors should indicate on the back of each figure or plate: (1) reduction factor, (2) serial number(s) of the figures in Arabic numerals, (3) their proper name(s), and (4) the short title of the paper.
14. Captions for all illustrations should be typed together on one or more separate sheets and should always mention the name(s) of the species concerned, if relevant.
15. Position of all figures and tables, as desired, must be indicated in pencil in the margin of the main text section of the manuscript.
16. References in the text should mention author and date, e.g., 'Recent investigations (Jones, 1969) ...' or 'Jones (1969) remarked ...'. Authors' names should not be in capitals. The use of indications like 'loc. cit.' etc., must be avoided.