The terrestrial isopods (Isopoda: Oniscidea) of Greece. 29th contribution: The genus *Armadillidium* (Armadillidiidae), supplement[1]

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Abstract

Armadillidium anconanum, up to now only known from Italy, is recorded for the first time from Greece (possibly introduced). The diagnostic characters are illustrated by SEM-photographs. This adds up to 60 species of *Armadillidium* known from Greece. Additionally, the difficult taxonomical situation of *Armadillidium fossuligerum* is discussed.

K e y w o r d s : Isopoda, Oniscidea, *Armadillidium*, Greece, new species record.

Zusammenfassung

Armadillidium anconanum, bisher nur aus Italien bekannt, wird zum ersten Mal aus Griechenland gemeldet (möglicherweise eingeschleppt). Die diagnostischen Merkmale werden durch REM-Fotografien illustriert. Damit sind nunmehr 60 *Armadillidium*-Arten aus Griechenland nachgewiesen. Des Weiteren wird die schwierige taxonomische Situation von *Armadillidium fossuligerum* diskutiert.

Contents

1 Introduction

Between 2006 and 2012 the author published a series of six papers on the genus *Armadillidium* known from Greece (Schmalfuss 2006a, b, 2008, 2010, 2011, 2012). They contain descriptions, illustrations of all diagnostic characters and distribution maps of 59 Greek species presently considered as valid. A summarizing list of these species is given in Schmalfuss (2013). The present article is a supplement to this revision of the Greek *Armadillidium* species, in which a first Greek record of a probably introduced Italian species is presented. So now 60 species of *Armadillidium* are known from Greece. In addition the complicated case of *Armadillidium fossuligerum* is discussed.

Abbreviation

SMNS Staatliches Museum für Naturkunde Stuttgart (+ number of isopod collection), Germany

Acknowledgments

S. Huber (Oberuhldingen/Germany) has donated the isopod material used in this article. Dr. S. Taiti (Florence/Italy) gave advice for the identification of *A. anconanum*, he and Dr. S. Sfenthourakis (Nicosia/Cyprus) helped to improve the original manuscript. Dr. K. Wolf-Schwenninger (SMNS) operated the scanning electron microscope. To all of them I wish to express my sincere thanks.

2 A first Greek record of *Armadillidium anconanum* Verhoeff, 1928

Bibliography

Verhoeff 1928: 98, 103, 108, fig. 6; Arcangeli 1954: 9 (see Manicastri & Taiti 1994); Manicastri & Taiti 1994: 142, figs. 8a–h; Argano et al. 1995: 21.

New material from Greece

7 ♂♂, 4 ♀♀, eastern Macedonia, Chalkidikí, Zográfou, humid stream valley, leg. S. Huber & A. Schönhofer, 22.VIII.2009 (SMNS 1996).

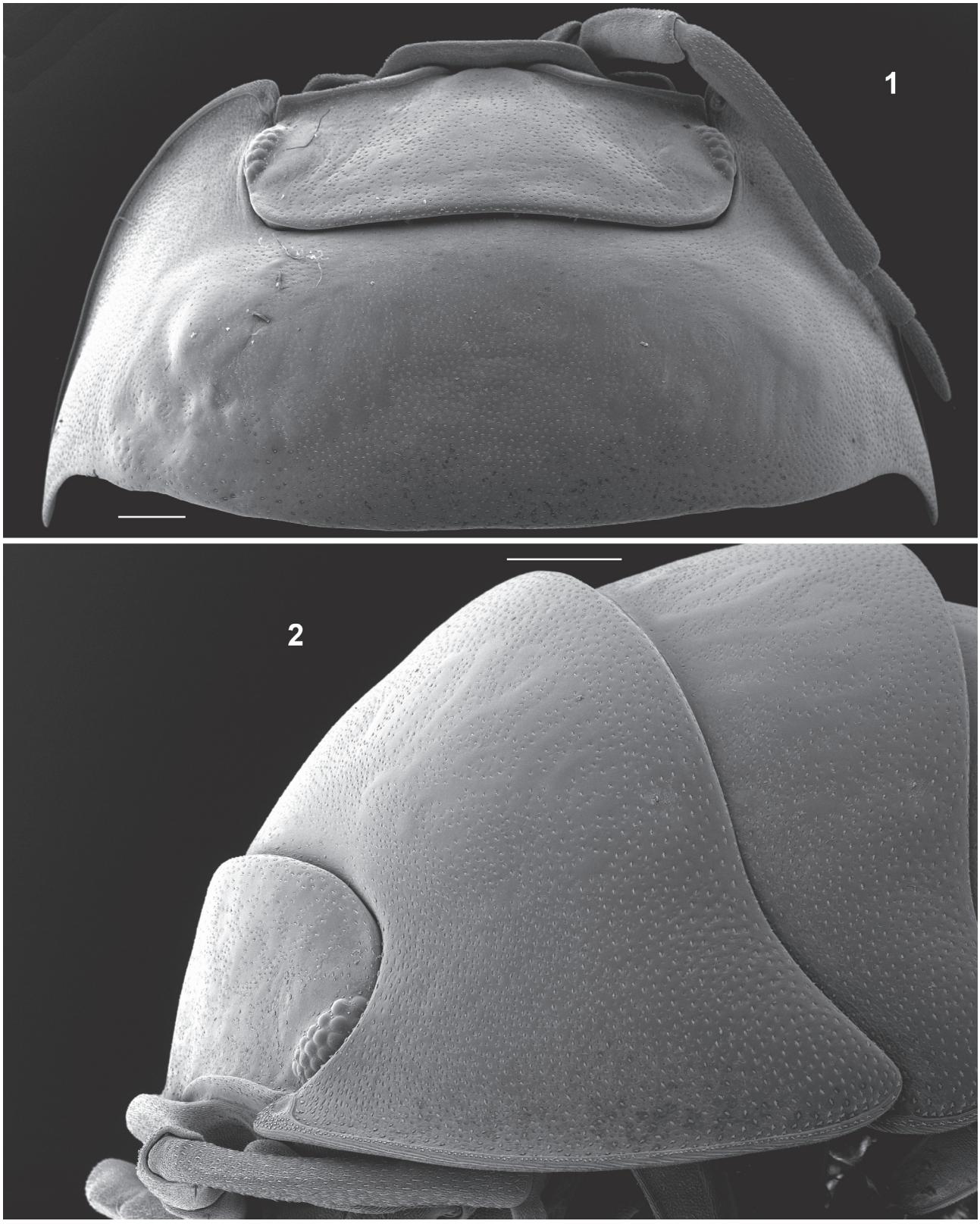
Diagnostic characters

Maximum dimensions: 15.0 × 7.3 mm.

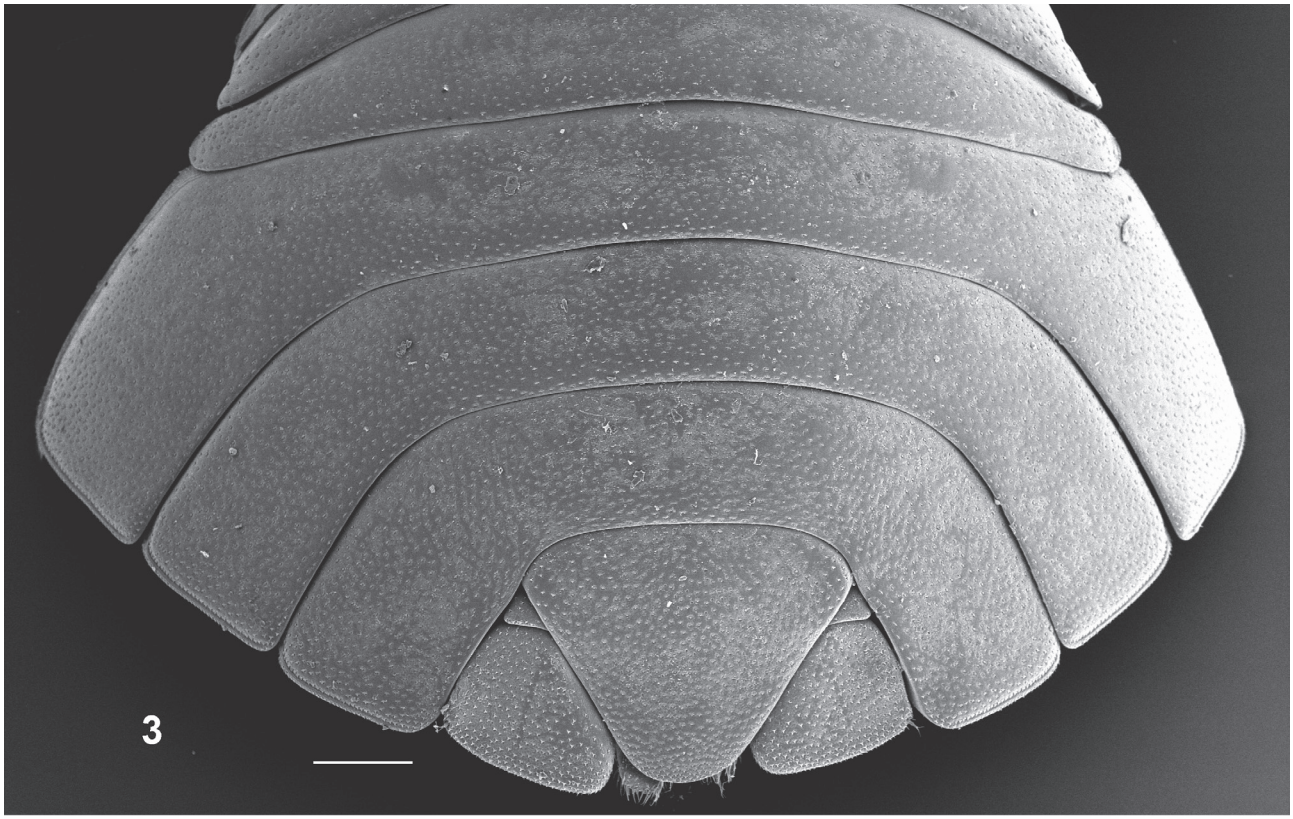
Coloration: Tergal parts blackish brown, partly mottled with yellowish speckles, more so in females.

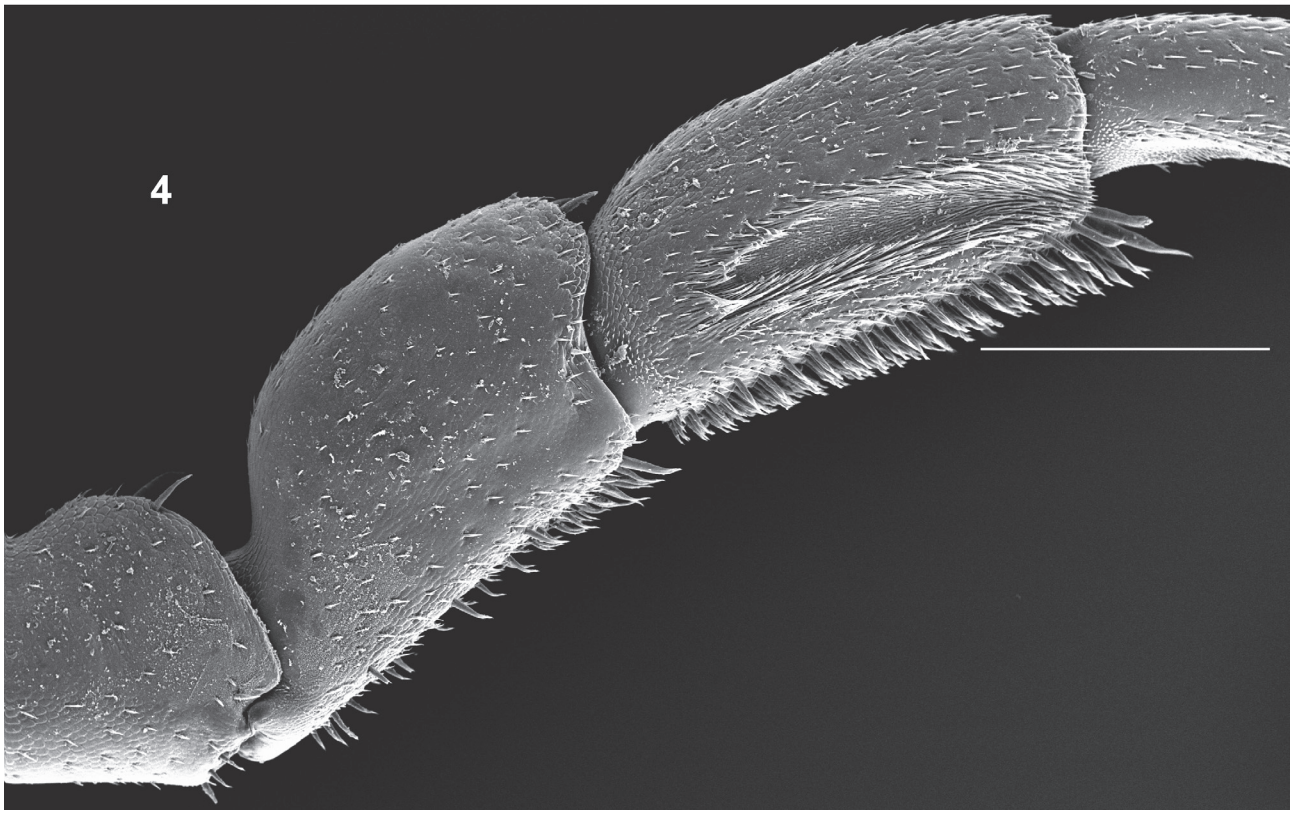
Cuticular structures: Tergites smooth (Fig. 1).

[1] 28th contribution see Stuttgarter Beiträge zur Naturkunde A, Neue Serie 5: 73–101 (2012).

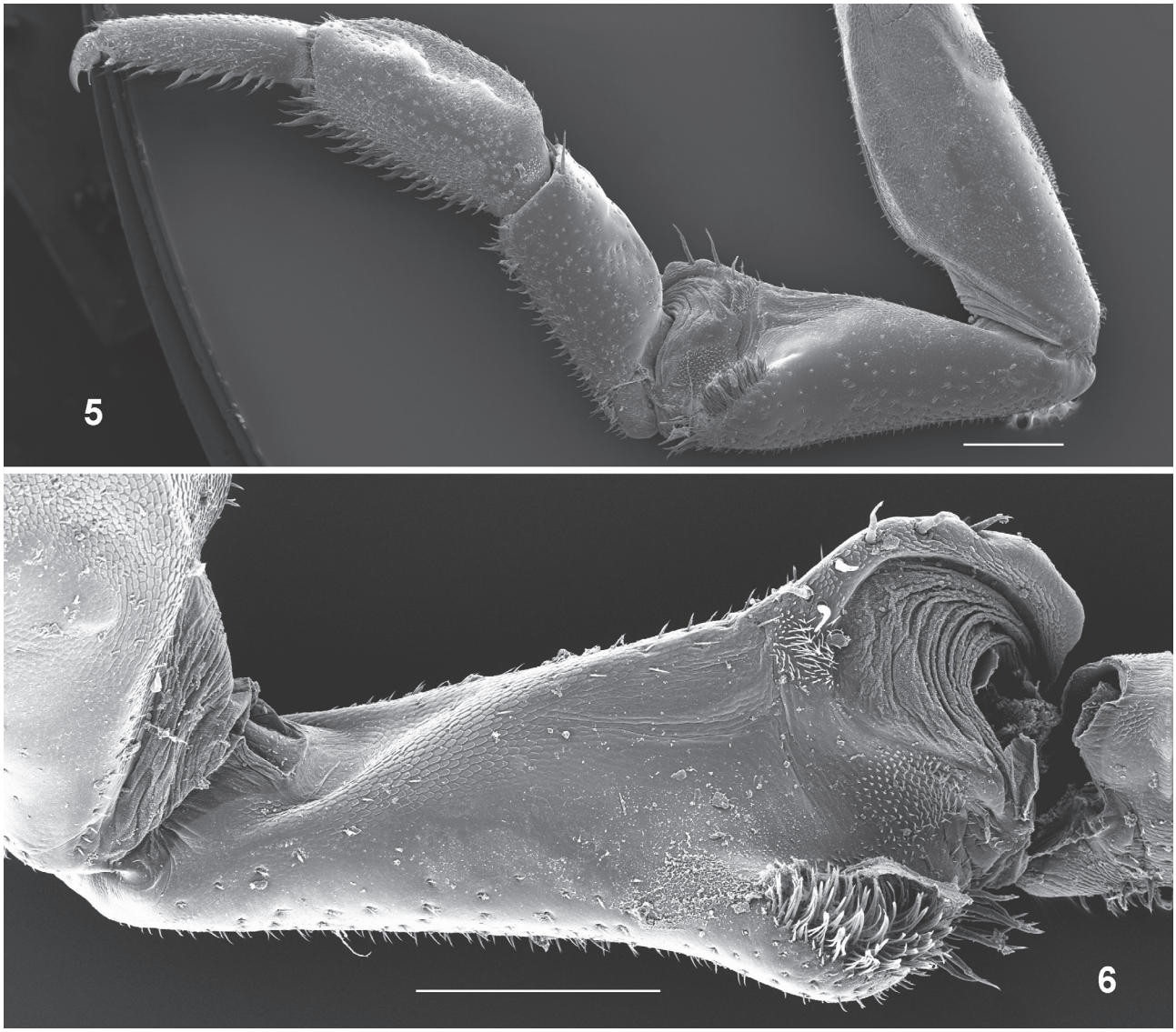


Figs. 1–2. *Armadillidium anconanum* (Greece, Chalkidikí, SMNS 1996). – **1**. ♂, 16.5 × 7.3 mm, head and pereon-tergite 1, dorsal view. **2**. ♀, 12.0 × 5.5 mm, head and pereon-tergite 1, lateral view. – Scales: 0.5 mm.





Figs. 3–4. *Armadillidium anconanum* (Greece, Chalkidikí, SMNS 1996), ♂, 16.5 × 7.3 mm. – **3**. Pleon, dorsal view. **4**. Pereopod 1, frontal view. – Scales: 0.5 mm.



Figs. 5–6. *Armadillidium anconanum* (Greece, Chalkidikí, SMNS 1996), ♂, 16.5 × 7.3 mm. – **5**. Pereopod 7, frontal view. **6**. Ischium 7, frontodorsal view. – Scales: 0.5 mm.

Frontal shield from behind surpassing frontal margin, upper margin straight, laterally with obtuse angles (Fig. 1); lateral lobes bent backwards, in frontal view rounded trapezoidal. Pereon-epimeron 1 with frontal corner bent upwards, hind margin concave (Figs. 1, 2). Telson wider than long, with straight sides and broadly rounded apex (Fig. 3). Flagellum of antenna in adults with distal segment slightly longer than proximal one. Male carpus 1 with ventral brush of spines (Fig. 4). Male carpus 7 dorsally enlarged (Fig. 5). Ischium 7 frontally with protruding ridge and brush of spines (Figs. 5, 6). Male pleopod-exopodite 1 with very short pointed hind-lobe, medial margin convex (Fig. 7).

Distribution

Central eastern Italy (provinces Forlí, Pesaro, Ancona and Perugia, for detailed localities see Manicastri & Taiti 1994); Greece (probably introduced): eastern Macedonia, Chalkidikí, Zográfou (see map Fig. 8).

3 Remarks on *Armadillidium fossuligerum* Verhoeff, 1902

After the re-description of the type specimens of *A. fossuligerum* in Schmalfuss (2012) I had come to the conclusion that the species, as it was defined in Schmalfuss

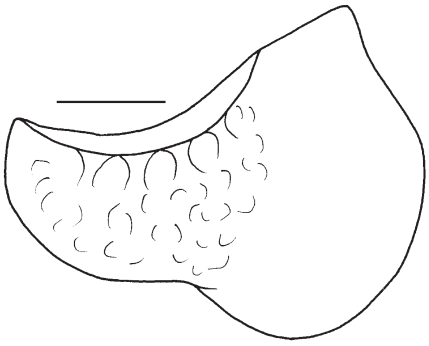


Fig. 7. *Armadillidium anconanum* (Greece, Chalkidikí, SMNS 1996), ♂, 16.5 × 7.3 mm, pleopod-exopodite 1, dorsal view. – Scale: 0.5 mm.

Fig. 8. First Greek record of *Armadillidium anconanum*.

(2008), should be split up in a number of very similar but morphologically separable species. A renewed very detailed investigation of all samples showed, however, that a high variability inside the samples leads to transitional forms which do not allow a clear separation into morphologically defined populations. This variability concerns shape and proportions of the frontal triangle (especially in dorso-caudal view), the hind margin of the pereon-epimeron 1, the shape and proportions of the telson, and the structure of the male ischium 7. So for the moment the most reasonable solution seems to keep this group as *A. fossuligerum* sensu lato, including also the material from ex-Yugoslavian Macedonia and from southwestern Bulgaria. Future research on this issue should also include molecular studies, which may help to define the systematic situation more clearly.

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