**Introduction**

Skyros is with an area of approximately 209 km2 the largest of the Thellesian Sporades, a group of islands within the Aegean archipelago. It is situated in the western Aegean sea, quite isolated from other islands with the closest being Euboea 40 km away. Additionally it is approximately 50 km from the remaining Thellasian Sporades. It stretches roughly from north-west to south-east with two major mountains and a depression in the middle of the island. Mount Kochylas is tallest at 792m and dominates the south-eastern part, while Mount Olympus is quite a bit lower at 402 in the north-western part. We see that the north-western part has large areas covered in coniferous forests, especially *Pinus halepensis* Miller, maquis with Juniperus phoenicea L., and is generally covered in lush, green vegetation. The south-eastern part is mostly covered in dry, spiny phrygana an maquis containing *Quercus coccifera* L. 1753*,* *Quercus ilex* L. and *Acer sempervires* L.. The lower parts of the island contain some beaches with large amounts of dry and wet seaweed, and in some of the higher places we see bare, steep cliffs. The south-eastern part is largely uninhabited with only few permanent structures to be found, most being near or by the coast, while the northern part contains the main city of the island as well as other, smaller settlements. The whole island shows signs of extensive grazing by the goats which can be seen roaming the islands, with large flocks being seen especially in the south-eastern part. Some wild, roaming horses can also be seen on the south-eastern part of the island where they also contribute slightly to the grazing.

Not much work have looked at the Staphylinidae fauna of the western Aegean islands before, and Only the two trips included here have been conducted, one for nine days in 2015 and one for five days in 2019 (REF LINE?). Thus, in order to investigate the Staphylinidae fauna of Skyros a trip was made by the authors in the end of March 2019. We tried collecting as broadly as possible, to get closer to a true species list for the island and thus we used both various methods and habitats to get as broad a sample as possible. Although no previous trip to Skyros had been made, Volker Assing har been collecting the Staphylinidae of the Aegean islands for the past twenty-odd years. He has collected from Chios (Assing, 2015a, 2016a), Corfu (Assing et al., 2018), Crete (Assing, 2013a, 2015b), Cyprus (Assing, 2017b, 2017a; Assing and Wunderle, 2001), Ikaria (Assing, 2017c), Karpathos (Assing, 2016b), Kos (Assing, 2017a), Lesbos (Assing, 2005, 2016a, 2017a), Rhodes (Assing, 2013b, 2017a) and Samos (Assing, 2015c, 2016a, 2017a).

Staphylinidae, commonly known as rove beetles, are an extremely diverse group of beetles with more than 50.000 species currently known, although quite a few are only known as singletons (Solodovnikov et al., 2013). They are very diverse in their ecological preference as well as their feeding habits and are found in every corner of the world (Thayer, 2016). While generally quite small, usually from 4-8mm, some species grow to be more than 30mm. Most species are quite flat and slender beetles which are able to maneuver through many cryptic habitats, especially because of their flexible hind segments (Thayer, 2016).

**Materials and Methods**

We have gathered our data from two trips to Skyros, one in April 2015 and one in the end of March 2019. While the first trip was under decent collecting conditions, with warm and sunny weather, the second trip was unfortunately during a very cold and windy week, following a very cold winter. Thus, not much activity was seen during this second trip, neither above nor beneath cover. To collect, we used Winkler eclectors, pitfall traps as well as hand collecting from ground-based microhabitats, carcasses found in the wild and in goat, sheep, horse and cow dung. We also swept vegetation in certain localities and installed a combined Flight Intercept Trap (FIT) and Malaise trap at site E. Salted water and cheap Greek wine was used as a preservative for the lower pans of the FIT as well as the pitfall traps set during the first trip. All hand- or trap-collected material was eventually preserved in containers within 96% alcohol. Most of our sifted material was from leaf litter or other similar plant debris, while a couple of samples were collected sifting soil around grass roots. The sifted material was sorted using both Winkler eclectors as well as manually in warm conditions to extract as many specimens as possible. During our second trip, very little activity was seen above ground, and this was reflected in our pitfall traps as they either yielded nothing or very little. Below is a full list of localities, and a map showing the distribution of these sites has also been generated (figure 1):  
GREECE, Skyros Isl., list taken entirely from (Kræmer, 2015)**:** leg. L. Kræmer, A. Brunke, S. Selvantharan & A. Solodovnikov 2015: **A:**1 km E of Skyros airport nr. Trachy, N38°57.561’, E024°30.096’, 20 m, 16.IV.2015, farmland, sifting debris and hand collecting nr. creek.; **B:** S of the airport, N38°56.726’, E024°29.029’, 50 m, 11.IV.2015, pine forest: a) sifting leaf litter, b) sweeping vegetation.; **C**: 0.91 km N of Atsitsa, N38°55.584’, E024°27.933’, 16.IV.2015, stony beach, in seaweeds.; **D**: S of Atsitsa, N38°54.690’, E024°28.358’, 110 m, 11.IV.2015, pine forest/evergreen understory: a) sifting in creek valley; b) under bark.; **E**: 3.3 km SW of Atsitsa, N38°54.127’, E024°29.961’, 200 m, 12.IV.2015, pine forest/evergreen understory: a) sifting leaf litter, b) sweeping vegetation, c) FIT d)Malaise trap, e) pitfall traps.; **F**: 1.4 km S of Skyros nr. Lino, N38°53.539’, E024°34.373’, 18.IV.2015, sandy pebble beach, sifting seaweeds.; **G**: Nr. Aghios Fokas, N38°52.458’, E024°28.756’, 10 m, 12.IV.2015, hillside nr. coast w. *Euphorbia*: a) sweeping vegetation, b) under stones.; **H**: Dekatria Hill, SW slopes, N38°52.039’, E024°30.035’, 250 m, 12.IV.2015, dry pine forest/scrubby understory: a) sifting leaf litter, b) under bark.; **I**: Kochylas Range, NW slopes, N38°50.902’, E024°35.124’, 440 m, 14.IV.2015, maple forest: a) sifting leaf litter, b) under rocks, c) hand collected.; **J**:Kochylas Range, NW slopes, N38°50.647’, E024°35.484’, 580 m, 14.IV.2015, maple forest:a) sifting leaf litter, b) in dung.; **K**: Kochylas Range, SW slopes, N38°50.382’, E024°34.919’, 300 m, 13.IV.2015, rocky pastures. *Euphorbia*: a) under stones, b) in dung, c) on carrion.; **L**: Kochylas Range, SW slopes, N38°50.210’, E024°35.424’, 530 m, 13.IV.2015, maple forest: a) sifting leaf litter, b) under stones, c) pitfall traps.; **M**: Kochylas Range, NW slopes, N38°50.238’, E024°35.554’,550 m, 17.IV.2015, maple forest: a) sifting leaf litter, b) on ground.; **N**: Kochylas Range, NW slopes, N38°50.011’, E024°35.799’, 640 m, 17.IV.2015, maple dominated forest: a) sifting leaf litter, b) hand collecting.

Greece, Skyros isl. From our current trip: leg. A. Bogri, A. K. Hansen, A. Marstrand, A. Solodovnikov 2019: **O:** SE of Nifi, N38°48.355', E24°34.461', 0 m, 27.III.2019, grazed meadow with *Quercus coccifera* patches: a) sifting leaf litter, b) sifting meadow and grass, c) under rocks, d) pitfall traps.; **P:** SE of Nifi, N38°48.321', E24°35.208', 103 m, 27.III.2019, dry creek in *Quercus* and *Acer* forest: a) sifting litter and flood debris, b) hand collecting,c) pitfall traps.; **Q:** Around Skyrian Horse Lake, N38°48.0510', E024°38.612', 373 m, 27.III.2019, meadow with artificial lake: a) on dung, b) under rocks.; **R:** SW of Skyros city, N38°53.469', E24°32.433', 44m, 28.III.2019, near lake, hand collecting.; **S:** SW of Skyros city, N38°53.400', E24°31.297', 137 m, 28.III.2019, *Pinus* forest with *Pinus brutia* and *Pinus halepensis*: a) sifting leaf litter, b) hand collecting.; **T:** SW of Skyros city, N38°54.1488', E24°30.2466', 217 m, 28.III.2019, pine forest with laurel: a) pitfall traps, b) hand collecting, c) sifting.; **U:** N of Atsitsa, N38°55.5852', E24°27.9646', 0 m, 28.III.2019, around beach and nearby meadow: a) sifting, b) hand collecting.; **V:** N of Skyrian Horse Lake, N38°48.278', E24°38.143', 384m, 29.III.2019, mountainous forest: a) hand collecting, b) sifting leaf litter.; **W:** Near Kalamitsa, N38°50.465', E24°33.913', 4m, 29.III.2019, beach with seaweed debris: sifting seaweed and other beach litter.

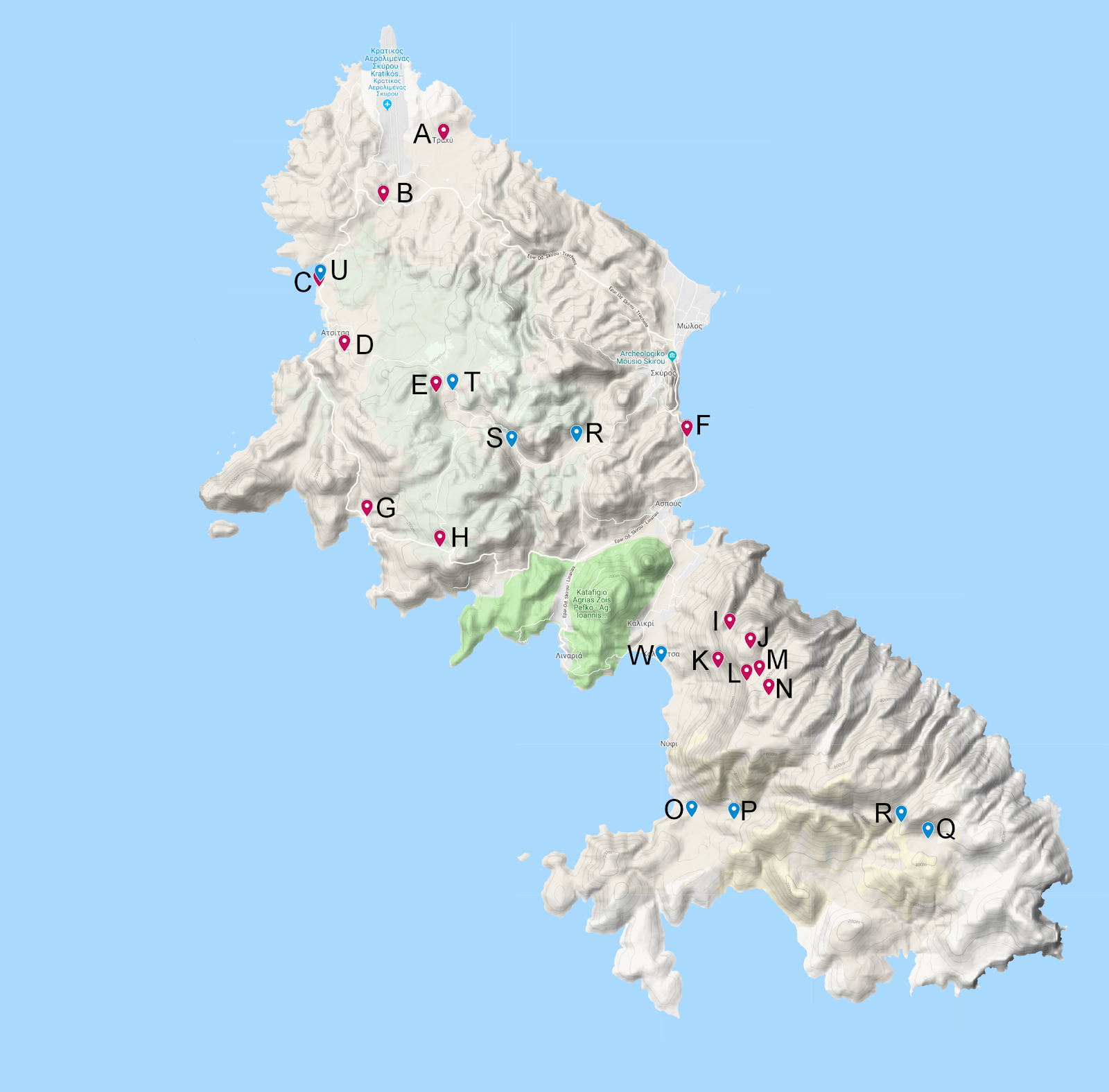


Figure 1. Sampling localities at Skyros Island. Localities marked in red (A-N) were sampled in 2015 and those marked in blue (O-W) were sampled in 2019.

**Results**

After our two trips to Skyros, we have collected a total of 65 species, although some remain identified only as morphospecies. These species are compiled below in table 1, with localities marked by their abbreviations.

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Table 2. Species composition and distribution of Staphylinidae on Skyros. Localities (Capital letters) here match those in figure 1 as well as our list of localities (see Materials and Methods section). The collecting methods (lower case letters) are marked according to our list of localities. In brackets we indicate the number of specimens collected from each locality using the respective method. Some (A-N) are from an earlier trip (Kræmer, 2015), while the rest (O-W) are from our current trip.

**Introduction**

The third largest of the Greek Dodecanese Islands with an area of approximately 290 km2, Kos is situated in the southeastern Aegean Sea. The nearest distance to the southwestern Turkish coast (Muğla), to which it was connected until the Pleistocene (TRIANTIS & MYLONAS 2009), is less than 5 km. The island has only one major mountain, the Dikeos range with the highest elevation at 843 m. While most of the area at lower altitudes is characterized by arid habitats, populated places, and more or less intensely cultivated land, rather extensive pine and cedar forests are still present at intermediate and higher altitudes. There are no permanent streams or rivers on the island; major wetlands are a salt lake (Alikes) in the north and a swamp (Psalidi) with mainly reed vegetation in the northeast. The vegetation of the area near the summit of Dikeos is characterized by cedar, more or less scattered shrubs on the steep slopes, grazed stony grassland, and phrygana. The Staphylinidae faunas of several larger East Mediterranean islands (Crete, Cyprus, Rhodos, Lesbos, Samos, Chios, Karpathos) have been addressed recently. The known overall diversities and numbers of endemic species are as follows: Crete (total species number not assessed; 67 named plus several unnamed species endemic), Cyprus (325 species in total, 27 of them endemic), Rhodos (131 species; eleven species endemic, three of them unnamed), Lesbos (201 species; eleven endemic species, nine of them named), Samos (140 species in total; 18 species endemic, seven of them undescribed), Karpathos (69 species; eleven species endemic, three of them undescribed), Chios (43 species; two species endemic, one of them undescribed). The figures for total species numbers are based on ASSING (2005, 2013a-b, 2015a-c, 2016a-b) and ASSING & WUNDERLE (2001). They include recent additions (Assing 2017a, b) and the additional records reported in the appendix of this paper; those for Cyprus are based also on SCHÜLKE & SMETANA (2015). Unlike the figures for endemic species, those for total species numbers are strongly biased, especially owing to different study intensities (number of collectors; duration of study period(s) and number of field trips) and different study seasons. For more details regarding species numbers, numbers of endemic species, and other island-related aspects of previously studied East Mediterreanean islands see the articles cited above.

Practically nothing was previously known about the staphylinid fauna of Kos. The only records I have been able to find are those of Medon dilutus pythonissa (SAULCY, 1865), M. semiobscurus (FAUVEL, 1875), and M. subfusculus FAGEL, 1969 (ASSING 2009b, 2013c), Micranops pilicornis (BAUDI, 1870) (ANLAŞ & FRISCH 2014), Scopaeus debilis (HOCHHUTH, 1851) (FRISCH 1999), Megalinus flavocinctus (HOCHHUTH, 1849) (BORDONI 2014), and of Myrmecopora fugax (ERICHSON, 1839) (ASSING 1997). In order to explore the staphylinid fauna of Kos, a field trip was conducted by the author in December 2016. This field trip focused on the autochthonous epigeic fauna of various forest, shrub, grassland, and ruderal habitats. Special habitats such as compost and dung, which generally host a great diversity of widespread Staphylinidae, were largely neglected. Additional material came from a short field trip conducted by Heinrich Meybohm in April 2012. In an appendix, additional records of Staphylinidae from Cyprus, Rhodos, Samos, and Lesbos are reported, and the Carabidae collected during the 2016 field trip are listed. The section on Carabidae is authored by Thomas Forcke, Keltern.

Material and methods

The material treated in this study is deposited in the following public and private collections: MNHUB ........... Museum für Naturkunde der Humboldt-Universität, Berlin (J. Frisch) NMP ................. National Museum of Natural History, Praha (J. Hájek) cApf ................. private collection Wolfgang Apfel, Eisenach cAss .................. author´s private collection cBra .................. private collection Volker Brachat, Geretsried cFel cFel .................. private collection Benedikt Feldmann, Münster cFor .................. private collection Thomas Forcke, Keltern cMey ................ private collection Heinrich Meybohm, Großhansdorf The Pselaphinae, Scydmaeninae, and Carabidae are all deposited in cBra, cMey, and cFor, respectively. Reference material of the remaining species is deposited in MNB and cAss. The maps were created using MapCreator 2.0 (primap) software.

**Results**

During the time of the 2016 field trip, Kos was unusually cold for the season. Moreover, there had been only little precipitation in the preceding months, so that all the temporary streams were dry. Consequently, the conditions for recording Staphylinidae were not optimal, particularly not regarding riverine and other wetland fauna, as well as the species typically collected from under stones, such as myrmecophiles. In all, 514 adult specimens of Staphylinidae were collected in various localities distributed across most of the island (Map 1) during the 2016 field trip. Additional 53 specimens came from the field trip conducted by Heinrich Meybohm in 2012. The material is composed of 54 species, two of them possibly unnamed (Atheta (Mocyta) sp. 1, Kenotyphlus sp.), three of them previously recorded, and the remainder reported from Kos for the first time (Tab. 1). Five of these species (Amarochara wunderlei; Atheta laevigata; Oligota anatolica; Leptomastax orousseti, Quedius curtidens) even represent first records from Greece. Of special interest is the record of Quedius curtidens, which had not been recorded since the original description, which is based on a unique holotype. Including the previously recorded species, the currently known staphylinid fauna of the island includes 58 species (see checklist), a diversity intermediate between figures for Chios and Karpathos. Most of the material was collected by sifting. Owing to the weather conditions, only very

**LITTERATURE**

Assing, V. (2005). Two new species and new records of Staphylinidae from the Greek island Lesbos (Insecta: Coleoptera). Linzer Biol. Beitr. *37*, 1035–1046.

Assing, V. (2013a). On the Staphylinidae (Coleoptera) of Crete , Greece. Stuttgarter Beiträge Zur Naturkunde, Ser. A *30*, 83–102.

Assing, V. (2013b). On the Staphylinidae of Rhodes, Greece. Linzer Biol. Beitr. *45*, 1587–1613.

Assing, V. (2015a). On the Staphylinidae of the Greek island Chios ( Insecta : Coleoptera ). Linzer Biol. Beitraege *47*, 43–55.

Assing, V. (2015b). On the Staphylinidae (Coleoptera) of Crete II. Seven new species, a new synonymy, and additional records. Stuttgarter Beiträge Zur Naturkunde, Ser. A *30*, 95–112.

Assing, V. (2015c). On the Staphylinidae of the Greek island Samos (Coleoptera: Staphylinidae). Koleopterol. Rundschau *85*, 81–102.

Assing, V. (2016a). On the Staphylinidae of the Greek island Lesbos II, with supplementary notes on the fauna of Samos and Chios. Koleopterol. Rundschau *86*, 103–138.

Assing, V. (2016b). On the Staphylinidae of the Greek island Karpathos (Insecta: Coleoptera). Linzer Biol. Beitraege *48*, 253–263.

Assing, V. (2017a). On the Staphylinidae of the Greek island Kos, with an appendix on Carabidae and additional records from other islands (Insecta: Coleoptera). Linzer Biol. Beitraege *49*, 191–205.

Assing, V. (2017b). A revision of the Alevonota species of the Palaearctic region. II. A new species from Cyprus and additional records (Coleoptera: Staphylinidae: Aleocharinae). Linzer Biol. Beitraege *49*, 229–234.

Assing, V. (2017c). On the Staphylinidae of the Greek island Ikaría, with supplementary notes on the fauna of Samos (Coleoptera: Staphylinidae). Koleopterol. Rundschau *87*, 89–116.

Assing, V., and Wunderle, P. (2001). On the Staphylinidae of Cyprus (Coleoptera). Entomol. Zeitschrift *111*, 34–41.

Assing, V., Brachat, V., and Meybohm, H. (2018). On the Staphylinidae of the Greek island Corfu (Insecta : Coleoptera). Beiträge Zur Entomol. *68*, 31–67.

Solodovnikov, A., Yue, Y., Tarasov, S., and Ren, D. (2013). Extinct and extant rove beetles meet in the matrix: Early cretaceous fossils shed light on the evolution of a hyperdiverse insect lineage (Coleoptera: Staphylinidae: Staphylininae). Cladistics *29*, 360–403.

Thayer, M.K. (2016). Staphylinidae Latreille, 1802. In Zoology Online, (Berlin, Boston: De Gruyter).