Burrows of *Solecurtus strigilatus* (LINNÉ) and *S. multistriatus* (SCACCHI).

(Bivalvia: Tellinacea).

With 1 Text-Figure, 2 Tables, and 3 Plates.

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Abstract.


Burrows of the bivalves *Solecurtus strigilatus* and *S. multistriatus* were investigated by in situ resin casting in the Northern Adriatic.

In general, resin casts have the shape of a J. Different sections can be recognized and correspond to the animal's morphology: an upper V-shaped part is formed by the separated siphons; the second, wide section corresponds to the posterior extension of the mantle cavity; the third part reaches to a sediment depth of up to 27 cm and corresponds to the shell in cross-section; a fourth part with irregular shape can be attributed to the escape reaction due to the casting method. The position of the animals within their burrows in 16-17 cm sediment depth can be recognized by imprints of the shell-sculpture and ligament.

In addition, information on study sites, sediments, associated fauna, and burrowing behaviour of both species is given. The burrow morphology of Solecurtidea and Solenidae in relation to animal morphology and life habit is discussed.

Kurzfassung.


Bauten der Bivalven *Solecurtus strigilatus* und *S. multistriatus* wurden in der Nordadria zwischen 2 und 11 m Tiefe mit Kunstharz ausgegossen.

Die Ausgüsse haben generell die Form eines J. Korrespondierend zur Morphologie der Tiere lassen sich verschiedene Baubeschnitte erkennen: der oberste Abschnitt ist V-förmig und wird von den getrennten Siphonen gebildet; der Zweite ist weit und lang und wird von der hinteren Verlängerung des Mantelraumes gebildet; der dritte gerade Abschnitt hat einen

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Zusätzlich werden Angaben zum Untersuchungsgebiet, zu dessen Sedimenten, zu der dort vorkommenden Fauna, und zum Grabeverhalten beider Arten angeführt. Im Anschluß werden die Bauformen der Solecurtidae und Solenidae in Zusammenhang mit der Morphologie der Tiere und deren Lebensweise diskutiert.

Introduction.

Burrowing animals play an important role in marine sediments. Along with polychaetes and crustaceans, bivalves are among the most common group of burrowers. About 74% of the 227 genera of the Bivalvia are members of the infauna (Stanley 1970).

The majority of the infaunal species are mobile deposit feeders (e.g., the family Nuculanidae) or live buried in the upper few centimeters of the sediment (e.g., Veneracea). Members of the Tellinacea, Myacea, and Lucinacea live in deeper burrows. Their burrows, however, are restricted to the volume of the body and siphons. Only the Solenidae, Solemyidae, and Solecurtidae live in permanent burrows with volumes exceeding that of the animal's body. These families have been termed as "tube builders" by Stanley (1970).

Several species of Solecurtidae have been investigated anatomically and morphologically in order to clarify systematic uncertainties (Graham 1934, 1937; Yonge 1949). Accounts on their biology exist for some American species (Morse 1919; Pohlo 1973; Holland & Dean 1977; Villarroel & Stuardo 1977; Viegas 1982). Burrows of Solecurtidae studied by digging in intertidal areas or using X-rays in aquaria, have been described for Tagelus plebeius and T. divisus (Frey 1968; Stanley 1970). Recently, Bromley & Asgaard (1986) studied burrows and burrowing behaviour of S. strigilatus.

This paper deals with the description of two types of solecurtid burrows as studied by in situ resin casting.

Material and Methods.

Systematic Position and Geographical Distribution.

Solecurtus belongs, within the superfamily Tellinacea, to the family Solecurtidae. This family is separated into four subfamilies of which the Solecurtinae comprise 7 recent and 1 fossil genera (Vokes 1980).

Nordsieck (1969) and Parenzan (1976) list three species which occur in the Mediterranean:

1. *S. strigilatus* (Linne): This species also occurs in the Atlantic from Portugal in the north to Senegal in the south. It lives in water depths from 47 to 157 m but also in the sandy littoral. Vavova (1935) found this species in mud in 30 m depth near Rovinj.

2. *S. multistriatus*: Some nomenclatural problems exist with this species. Nordsieck (1969) lists it under the name *S. scopulus multistriatus* Scacchi as a Mediterranean subspecies of the Atlantic *S. scopulus* (Turton); he mentions that the
synonym *candidus Renier* is not valid. The description and figure of this species, however, were not sufficient to identify the specimens collected on mud bottoms in the Gulf of Trieste. By comparing these specimens with material in the collections of the Museum of Natural History, Vienna, they proved to be identical with specimens deposited under the name *S. candidus*. The description and figure of *S. candidus* in *Parenzan* (1976) show also good agreement with the Adriatic specimens. On the other hand, *Parenzan* lists *S. multistriatus* and *S. scopulus* as synonyms, but mentions that this species occurs only in the Mediterranean in 40 m in mud.

3. *S. albus* (Blainville): This species occurs only in the Mediterranean and is probably also an as yet poorly defined variation or subspecies (Nordsiek 1969; Parenzan 1976).

**Sampling and Resin Casting.**

Specimens were dug out while snorkeling or using SCUBA. Additional empty shells were also collected by hand. Resin casts were made using the SHINN-method (Shinn 1968; for details of method see Perovesler & Dworschak 1985). Animals, shells, and resin casts were measured in the laboratory with sliding calipers.

Observations on burrowing behaviour were carried out in Rovinj, Yugoslavia, using narrow aquaria filled with natural sediment.

Sediment analysis were performed according to Buchanan & Kain (1971).

**Morphology.**

The shell of *S. strigilatus* is equivalve and almost equilateral; the anterior and posterior extremities are rounded and gape widely. It is elliptical in cross-section, the ligament a strong dark brown band. The outer sculpture consists of concentric lines and oblique transversal ribs (25-30) in the middle region. The outside is pink in colour and shows two white radiating bands (Pl. 1 fig. 2; Pl. 2 fig. 9).

The shell of *S. multistriatus* is similar in shape, the umbo lying a little more anteriorly than in *S. strigilatus*. The oblique transversal ribs are more numerous (38-55) and occur in two groups, one group in the middle region and a second group of typically S-shaped ribs in the posterior region (Pl. 3 fig. 13).

The soft parts of the body cannot be retracted completely into the shell in both species. Characteristic is the capacious posterior extension of the mantle cavity (designated as PM by Yonge 1949). This region can be extended during reburrowing to 1.5 times the length of the animal’s shell. Distally located are the separate siphons, which may reach the length of the shell. Anteriorly, the strong foot can be protruded to nearly shell-length (Pl. 1 fig. 2).

**Environmental Setting.**

The investigations were carried out in two bays S of Rovinj and in two sites in the Gulf of Trieste.

Rovinj is located on the west coast of the peninsula of Istria (Northern Adriatic). The coastline is broken up into many islands and small bays.

The Bay of *Kuvi*, 2 km S of Rovinj, is bordered by rocks. Fine muddy sediments form the intertidal, while the bottom in 2 to 3 m water depth consists of medium fine sand (Tab. 1) and is characterized by wave ripples. The bottom at this
depth has only a sparse epifauna consisting of the gastropod Cerithium rupestre and hermit crabs; the infauna is represented by the polychaete Chone dunneri and the bivalves Tellina tenuis and Venus gallina. The burrow openings of Solecurtus strigilatus are conspicuous lebensspuren on this bottom. Their density was estimated to be between 2 and 5 per 10 m²; paired holes occur in groups of 2 to 3 in 1 m². Here, two resin casts of S. strigilatus-burrows (Ss 2 and Ss 3) were made in July 1983.

The Bay of Veštar is situated 5 km S of Rovinj. The rocks bordering the bay extend to a depth of 2 to 3 m. Below this, the bottom consists of medium sand (Tab. 1) becoming finer towards the centre. Here, a resin cast of a S. strigilatus-burrow (Ss 1) was made by J. Ort in July 1972.

Position 7 is situated in the Gulf of Trieste 2 km E of the mouth of the Isonzo. The sediment in 11 m water depth is mud (Tab. 1). The overlying water is very turbid and shows a strong stratification due to the influence of the river. This bottom is populated by a large number of the brittle star Ophiotrix quinquemaculata and several species of Actiniaria. The infauna is represented by the polychaete Chaetopterus variopedatus and the crustaceans Upogebia tāpica and Squilla mantis. Here, a specimen of S. multistriatus was dug out of the sediment in August 1984; two resin casts (Sm 1 and Sm 2) were made here by P. Pervesler in August 1985.

Position 8 is situated 3 km W of Piran (Gulf of Trieste). The sediment in 22 m water depth is a medium sand with about 5% clay (Ranke 1976). Here, two specimens of S. multistriatus were collected from the sediment surface during the mass mortality event in September 1983 (see Stachowitsch 1984: Fig. 17).
Results.

Openings.

Burrow openings of *S. strigilatus* are characterized by paired circular holes (Pl. 1 fig. 1) with a diameter of 13 to 25 mm with a distance from each other of 35 to 60 mm. One hole, that of the ingestion siphon, is always slightly larger than the other; the downward direction of the burrow can be recognized from above. The edges of the siphons, which are fringed on their inner side by 6 blunt lobes, are visible in undisturbed animals 5 mm below the sediment surface (Fig. 1).

Burrow openings of *S. multistriatus* are less obvious; resin casts show that the two siphon openings originate at the bottom of a slit-shaped funnel (5 cm × 2 cm; Pl. 3 figs. 10-11).

Burrow Shape.

*Solecurtus strigilatus*.

In general, burrows have the shape of a J (Pl. 1 figs. 3-5; Pl. 2 figs. 6-7). Four distinct burrow sections can be recognized in the resin casts:

1. The upper section, beginning at the sediment surface, is V-shaped and is formed by the separate siphons. The two branches diverge by an angle of 25° and are circular in cross-section (10 to 25 mm in diameter; Fig. 1A), the diameter of the branch formed by the ingestion-siphon always being about 50% thicker than that of the egestion-siphon. The diameter of both branches increases by 50% from the surface to the depth where they join.

   The dip angle of the ingestion-siphon-branch ranges between 55 and 75°, that of the egestion-siphon-branch between 75 and 90°.

2. Below the junction of the two branches in a sediment depth between 4 and 7 cm the burrow becomes wider. This section is formed by the posterior extension of the mantle cavity (PM). The cross-section of this section is constricted-elliptical (3.5-5.5 cm × 1.6-3.0 cm; Fig. 1B) immediately below the siphon junction, circular (diameter 3-4.5 cm; Fig. 1C) in the middle part, and elliptical (2.5-3.5 cm × 1.4-3.0 cm) in the lower part. The dip angle of this section ranges between 30 and 55°.

3. The third section is separated from the preceding one by a marked decrease in diameter; the cross-section is elliptical (2.5-3.5 cm × 1.5-2.5 cm) corresponding to the cross-section of the animal's shell, and remains constant (Fig. 1D-E). The long axis is nearly vertical. A marked keel on the upper side originates from the strong ligament of the shell; imprints of the posterior shell-edges are visible on both sides (Pl. 2 fig. 8). The dip angle of this portion ranges between 25 and 45°.

4. At their lowest point the resin casts become irregular in cross-section and thinner in diameter. This portion, which was mixed with sand represents the escape trace of the animal. This portion leads either further downwards as in Ss 3 (Pl. 2 fig. 6) or to the sediment surface as in Ss 1 and Ss 2 (Pl. 1 figs. 3 and 5).

*Solecurtus multistriatus*.

Burrows of *S. multistriatus* (Pl. 3 figs. 10-11) are in general very similar to those of *S. strigilatus*. They differ from the latter in the following features:

1. The siphons open at the bottom of a funnel and are constricted (diameter 6.6-9 mm increasing downwards to 10-14 mm).
2. The section formed by PM is less widened, being circular to elliptical in cross-section in the middle (18.5-22 × 20-22.5 mm).

3. The keel is less obvious; the longer axis of the elliptical cross-section (dorsal-ventral plane of animal) lies obliquely (Sm 1) or nearly horizontally (Sm 2). In both resin casts the imprints of the oblique transversal ribs are visible only on the upper sides (Pl. 3 fig. 12).

4. The transition from the permanent burrow (sections 1-3) to the escape structure is less marked (the soft sediment did not collapse behind the animal). In Sm 2 the animal escaped through two adjacent burrows of *Upogebia tipica* (Pl. 3 fig. 11).

**Burrow Wall.**

According to the resin casts, the burrow wall is smooth in the permanent part of the burrow. The upper portion of each siphon is lined with mucus; small chimneys
(5 mm high, 5 mm wall thickness) due to erosion can occasionally be observed surrounding both openings. In Ss 3 a small burrow containing a small portunid crab branches off the ingestion siphon (Pl. 2 fig. 6). In S. strigilatus the wall of the escape burrow is rough due to collapsing of the sand behind the animal. The floors of S. multistratatus-burrows are not as smooth as the roofs. In both species, imprints of the shell’s sculpture mark the life-position of the animal.

**Burrow Dimensions.**

The dimensions of the burrows are summarized in Tab. 2. The relationships between shell-length (L in mm) and shell-height (H in mm) (H = 0.4043 L + 2.0827; r = 0.9722; n = 8) and between L and shell-breadth (B) (B = 0.3576 L –

<table>
<thead>
<tr>
<th></th>
<th>Ss 1</th>
<th>Ss 2</th>
<th>Ss 3</th>
<th>Sm 1</th>
<th>Sm 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3.5</td>
<td>3.0</td>
<td>5.0</td>
<td>2.5</td>
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<tr>
<td>L_{shell}</td>
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<td>5.0</td>
<td>8.3</td>
<td>5.1</td>
<td>4.8</td>
</tr>
<tr>
<td>L_{1} (single siphons)</td>
<td>8.0</td>
<td>4.0</td>
<td>7.0</td>
<td>5.5</td>
<td>6.0</td>
</tr>
<tr>
<td>L_{2} (PM)</td>
<td>9.0</td>
<td>12</td>
<td>14</td>
<td>7.5</td>
<td>6.0</td>
</tr>
<tr>
<td>L_{1-3} (permanent)</td>
<td>55</td>
<td>31</td>
<td>46</td>
<td>36</td>
<td>33</td>
</tr>
<tr>
<td>L_{total}</td>
<td>69</td>
<td>50</td>
<td>90</td>
<td>54</td>
<td>42</td>
</tr>
<tr>
<td>T_{total}</td>
<td>27</td>
<td>25</td>
<td>27</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
<td>T_{animal}</td>
<td>17</td>
<td>17</td>
<td>16</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>V_{1} (single siphons)</td>
<td>21.3</td>
<td>9.9</td>
<td>57.2</td>
<td>9.3</td>
<td>8.3</td>
</tr>
<tr>
<td>V_{2} (PM)</td>
<td>49.8</td>
<td>71.6</td>
<td>200.0</td>
<td>25.9</td>
<td>29.2</td>
</tr>
<tr>
<td>V_{3}</td>
<td>124.1</td>
<td>32.9</td>
<td>176.4</td>
<td>51.9</td>
<td>39.6</td>
</tr>
<tr>
<td>V_{1-3} (permanent)</td>
<td>195.3</td>
<td>114.4</td>
<td>433.6</td>
<td>87.2</td>
<td>77.2</td>
</tr>
</tbody>
</table>

*) up to the junction with Upogebia-burrows.
2.6447; \( r = 0.9133; n = 8 \) allow the calculation of the size of the inhabitant from the cross-sections of the resin casts where the imprints of the shell are visible.

This shows that PM reaches between 1.5 (Ss 1) and 2.4 (Ss 2) times the length of the shell; the burrow below the position of the shell is between 2 (Ss 2) and 5.3 (Ss 1) times shell length (Fig. 1). Between 46.4 (Ss 1) and 83.2% (Ss 2) of the total burrow volume is occupied by the animal; the proportion of the volume of PM to total permanent burrow volume ranges between 25.5 and 62.8%.

**Burrowing Behaviour.**

When removed from its burrow, *S. strigilatus* makes strong attempts at reburrowing. The burrowing sequence is in general the same as that described for bivalves by Trueman & Brand & Davis (1966) and summarized by Stanley (1970). Once erected, *S. strigilatus* moves vertically into the sediment. An animal with a shell length of 75 mm needs between 3 and 5 min from erection to complete burial. The resulting burrowing rate index is 1.3 and classifies *S. strigilatus* as a moderately rapid burrower according to Stanley (1970). After burial of the body, the animal continues to move downwards, although more obliquely. During this phase the loosening of sand in front of the animal by ejection of water from the ventral mantle margins is especially visible. The complete burrow including the lower shaft, is completed in one day. At first the two siphons lie together in a V-shaped sediment depression; a separation of the siphons is formed 1 to 2 days later.

**Discussion.**

The general shape of the *Solecurtus*-burrows described in this study are very similar to those of other Solecurtidae. *Tagelus plebeius* and *T. divisus* also show an upper V-shaped burrow portion enclosing the separate siphons and a main burrow with a diameter corresponding to that of the animal (Frey 1968; Holland & Dean 1977). In contrast to *Solecurtus*, these burrows are nearly vertical and of uniform diameter below the junction of the siphons. This is due to the different morphology of the two genera: *Tagelus* has only a very small posterior mantle cavity; both separate siphons can be withdrawn into the shell (see Stanley 1970: Pl. 30 figs. 3-5). In *Solecurtus*, however, the posterior extensions of the mantle cavity is very large (Pl. 1 fig. 2). Burrow morphology thus reflects the morphology of its inhabitant.

The resin casts also show that the posterior extension of the mantle cavity is much wider and longer in natural burrows than it is during re-burrowing movements or in aquaria. Furthermore, the resin casts allow the determination of the animal’s position in its burrow. Yonge (1949) mentions that the powerful ligament acts against the pressure of the substratum, holding the animal in position within the burrow. This function of the ligament is demonstrated by the fact that the ventral mantle margins gape widely when the animal is removed from its burrow. Shell pressure against the surrounding burrow wall results in imprints of the shell’s sculpture. In mud even very fine ribs are formed and replicated in the resin casts. This allows the identification of the burrow inhabitant even if the animal was not entombed in the resin cast (e.g., *S. multistriatus* from Pos. 7; Pl. 3 figs. 12-13).
A permanent burrow portion below the bivalve also exists in Tagelus and in members of the Solenidae (Fraenkel 1927; Frey 1968; Stanley 1970; Holland & Dean 1977). This enables retreat without burrowing when disturbed. Fraenkel (1927) reported that the downward movement in Solen is initiated by stimulation of the siphon. He observed in aquaria that the foot is anchored in the lower part of the burrow; contraction of the longitudinal muscles of the foot draws the animal downwards. Additionally, the closing valves emit a jet of water from the siphons and further support downward movement. The effect of this water-jet is also visible in the resin casts, where it led to incomplete filling of the PM-region. In Ss 1 a third branch beside the ingestion-branch was formed (Pl. 1 fig. 5). The escape reaction of S. strigilatus is continued by a rapid digging further into the sediment. This is supported by a jet of water directed anteriorly which assists the foot in penetrating the sediment (Bromley & Asgaard, 1986).

In Tagelus, an intertidal inhabitant, this channel of retreat reaches a depth of over 40 cm (Frey 1968; Stanley 1970). Frey (1968), in discussing the paleoecological implications of Tagelus burrows, argues that burrows are useful in paleobathymetric reconstructions: deep burrows reflect intertidal conditions. The burrows Solecurtus from the subtidal provide only little information on the environment. No differences in general burrow shape and burrow depth exist between the two species although they occur in very different biotopes — S. strigilatus in medium to fine sands influenced by wave action, S. multistriatus in firm mud or sand in deeper bottoms. Therefore, in burrows of Solecurtus the generic-specific architecture prevails over the environmental influence.

Acknowledgements.

This study was supported by Projects Nos. 5059 and 5915 of the „Fonds zur Förderung der wissenschaftlichen Forschung in Österreich“. I am grateful to Drs. J. Ott and P. Pervesler for providing me with their material. My thanks are due to Dr. R. Roetzell for performing sediment analysis, to Prof. M. Mizzaro for help in photography, and to Drs. J. Ott, L. Salvini-Plawen, P. Steininge, and M. Stachowitsch for critical reading of the manuscript.
References.


Plate 1.

*Solecurtus strigilatus* from the Adriatic Sea near Rovinj. — i: ingestion siphon; e: egestion siphon. The arrow marks the position of the ligament.

Fig. 1. Burrow opening. — Black and white copy of a slide made by K. Fedra. — Scale 1 cm.

Fig. 2. Specimen of *S. strigilatus* with partially extruded foot and posterior extension of the mantle cavity (PM) — Scale 1 cm.

Figs. 3-4. Resin cast Ss 2, Bay of Kuvi, Rovinj, 2 m depth. — Scale 10 cm.
3. Side view.
4. View from above.

Fig. 5. Resin cast Ss 1 in side view, Bay of Vestar, 5 m depth. — Scale 10 cm.

Tafel 1.

*Solecurtus strigilatus* aus der Adria nahe Rovinj. — i: Ingestionssipho; e: Egestionssipho. Die Pfeile weisen auf die Lage des Ligaments.

Fig. 1. Bautenöffnung, Schwarzweißkopie eines Dias von K. Fedra. — Maßstab 1 cm.

Fig. 2. Lebendes Tier mit teilweise ausgestrecktem Fuß und hinterer Erweiterung des Mantelraumes (PM). — Maßstab 1 cm.

Fig. 3-4. Kunstharzausguß Ss 2, Bucht von Kuvi, Rovinj, 2 m Tiefe. — Maßstab 10 cm.
3. Seitenansicht.

Fig. 5. Kunstharzausguß Ss 1 in Seitenansicht, Bucht von Vestar bei Rovinj, 5 m Tiefe. — Maßstab 10 cm.
P. C. Dworschak:
Burrows of *Solecurtus strigilatus* (Linne) and *S. multistriatus* (Scacchi)
(Bivalvia, Tellinacea).
Plate 2.

*Solecurtus strigilatus* from the Adriatic Sea near Rovinj. — i: ingestion siphon; e: egestion siphon. Arrows mark the position of the ligament.

Figs. 6-7. Resin cast Ss 3, Bay of Kuvi near Rovinj, 2 m depth. — Scale 10 cm.
7. View from above.

Fig. 8. Close-up of resin cast Ss 3 in oblique view showing keel formed by the ligament and imprints of the rounded posterior edge of the animal’s shell. — Scale 1 cm.

Fig. 9. Left valve of the shell in side view showing sculpture and white bands. — Scale 1 cm.

Tafel 2.

*Solecurtus strigilatus* aus der Adria nahe Rovinj. — i: Ingestionssiphon; e: Egestionssiphon. Der Pfeil weist auf die Lage des Ligamentes.

Fig. 6-7. Kunstharzausguß Ss 3, Bucht von Kuvi, Rovinj, 2 m Tiefe. — Maßstab 10 cm.
7. Ansicht von oben.

Fig. 8. Nahaufnahme des Kunstharzausgusses Ss 3. — Man beachte den vom Ligament gebildeten Kiel sowie den Abdruck des Vorderrandes der Schale. — Maßstab 1 cm.

Fig. 9. Seitenansicht der linken Schale. — Man beachte die schrägen Querrippen und die weißen Bänder. — Maßstab 1 cm.
P. C. Dworschak:
Burrows of Solecurtus strigilatus (Linne) and S. multistriatus (Scacchi)
(Bivalvia, Tellinacea).
**Plate 3.**

*Solecurtus multistriatus* from the Gulf of Trieste. — i: ingestion siphon; e: egestion siphon. Arrows mark the position of the ligament.

Figs. 10-11. Resin casts Sm 1 and Sm 2 in side view, 11 m depth, Pos. 7 Aurisina – Punta Sdobba. — Scale 10 cm.

10. Sm 1.

11. Sm 2, two burrows of the thalassinidean *Upogebia típica* to the left, the bivalve escaped through both burrows.

Fig. 12. Close up-of resin cast Sm 2 showing imprints of the oblique transversal ribs of the shell. — Scale 1 cm.

Fig. 13. Right valve in side view showing sculpture of oblique transversal ribs. — Specimen collected at Pos. 8 (depth 22 m) near Piran. — Scale 1 cm.

**Tafel 3.**

*Solecurtus multistriatus* aus dem Golf von Triest. — i: Ingestionssiphon; e: Egestionssiphon. Der Pfeil weist auf die Lage des Ligamentes hin.

Fig. 10-11. Kunstharzausgüsse Sm 1 und Sm 2 von Pos. 7 des Transektes Aurisina – Punta Sdobba, 11 m Tiefe. — Maßstab 10 cm.

10. Sm 1.

11. Sm 2, rechts zwei Bauten des thalassinen Krebses *Upogebia típica*, die Bivalve floh vor dem Harz durch beide Krebsbauten.

Fig. 12. Nahaufnahme des Kunstharzausgusses Sm 2 mit den Abdrücken der schrägen Querrippen der Schale. — Maßstab 1 cm.

Fig. 13. Rechte Schale in Seitenansicht. Man beachte die schrägen Querrippen besonders im hinteren Bereich. — Exemplar aufgesammelt auf Pos. 8 nahe Piran beim Massensterben im Sept. 1983 — Maßstab 1 cm.
P. C. Dworschak:
Burrows of *Solecurtus strigilatus* (Linné) and *S. multistriatus* (Scacchi) (Bivalvia, Tellinacea).