In contrast to the other Swedish Lias species suture lines are not uncommonly preserved in *E. spinaries*; those of specimens LO 3930 and LO 3934 are figured in figs. 8, a—b.

DIMENSIONS. —

	LO 3936	LO 3937	lectotype
Diameter	41 mm (= 1.00)	110? mm (= 1.00)	106 mm (= 1.00)
Thickness	?	40 » (= 0.36) 44 » (= 0.40)	34 » (= 0.32) 37 » (= 0.35)
Umbilicus	18 » (= 0.44)	67 » (= 0.61)	49 » (= 0.46)
Height of last whorl	17 » (= 0.42)	46 » (= 0.42)	35? » (= 0.33)

The double measurements under "thickness" refer to costal and intercostal thicknesses. The last part of the lectotype is damaged.

REMARKS. — The species here recorded is like *E. resupinatum* (SIMPSON) but it has a less quadrate whorl section and a tendency towards the development of feeble keel furrows (see also WALLISER, 1956, p. 202). The keel is also more prominent and sharper, at least in the case of the Swedish specimens. QUENSTEDT's (1883, pl. 11, figs. 9, 10) figures of small specimens closely resemble LO 3936 (pl. IX, fig. 2) and have convex-outwards, at times looped, ribs. The ribs of the lectotype are always concave outwards, as far as could be ascertained as the inner whorls are not visible, and the ribs of BUCKMAN's (1927) figure are straight to very slightly concave outwards. No such strong ventral furrows as figured by HYATT (1889, pl. 6, fig. 14) occur on any of our specimens nor on the lectotype (cf. pl. XI, fig. 1 b).

The tendency of the ventrolateral tubercles to degenerate, shown by almost all of the specimens in the present collection may be discerned in the last part of the form figured by BUCKMAN (1927, pl. dccxxxvii, A—B). There is also a tendency for weakening of the tuberculation on the lectotype, but this is not so dominant as in the Swedish material.

It seems likely that *E. spinaries* produced on the one hand *E. resupinatum* by suppression of the keel and enfeeblement of the tubercles and *E. lundgreni* sp. nov. on the other by suppression of the ribbing and the tuberculation but development of the keel and increase in the height of the whorl section.

Euagassiceras lundgreni sp. nov.

Pl. XII, figs. 1, a—b; pl. XIII, fig. 2; figs. 10, 11, a—c

NAME. — B. LUNDGREN.

MATERIAL. — Three specimens.

HOLOTYPE. — Specimen LO 3938 T figured in pl. XII, figs. 1, a—b, and figs. 10, 11, a—c.

Fig. 10. *Euagassiceras lundgreni* sp. nov. Holotype (LO 3938 T). Portion of a suture line. (× 1).

PARATYPES. — LO 3940 t and LO 3941 t.

REPOSITORY. — Lund.

PROVENANCE. — Döshult.

COLLECTORS. — The holotype was collected by H. SJÖGREN, the collectors of the other specimens are unknown.

AGE. — Lower Sinemurian; *sauzeanum* subzone of the *semicostatum* zone.

DIAGNOSIS. — A species of the genus *Euagassiceras* with the following characteristics. Shell size large for the genus, whorl section on inner whorls quadrate becoming much higher than broad on outer whorls; keel always strong and sharp and with broad, shallow side furrows on the inner whorls that almost disappear on the body chamber. Inner whorls with well spaced, stout ribs and feeble bullate ventrolateral tubercles, which weaken and disappear on adult whorls. Growth lines strong. Body chamber at least two thirds of a whorl.

DESCRIPTION. — Specimen LO 3938 is the largest and most complete specimen (diameter = 225 mm; thickness = 47 mm) and was chosen as holotype. It consists of slightly more than half a whorl of the body chamber and much of the inner whorls, which are, however, not well preserved. The body chamber is virtually smooth, although it bears

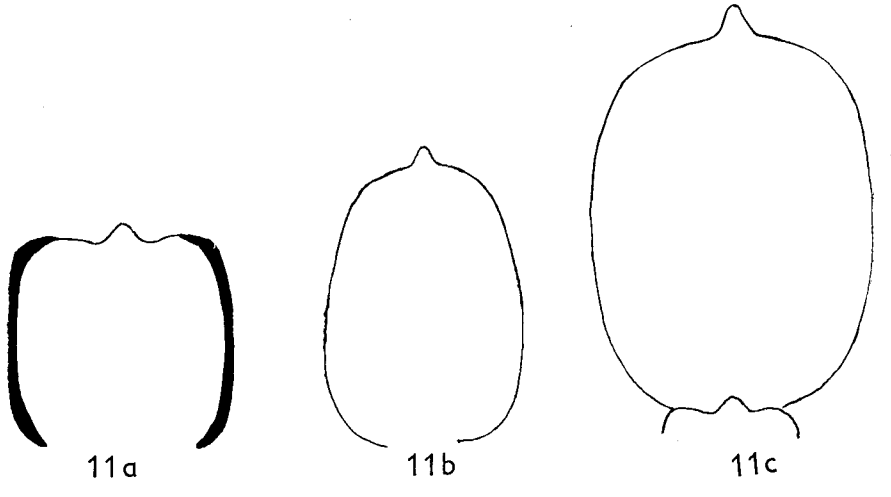

Fig. 11. *Euagassiceras lundgreni* sp. nov. Holotype (LO 3938 T). Figures illustrating the development of the whorl section; a, at a whorl radius of 68 mm; b, at a whorl radius of 108 mm; c, at a whorl radius of 130 mm. (× 0.8).

flattened rib remnants that are strongest near the umbilical margin but which weaken appreciably towards the venter, although they may cause faint bulges at the ventrolateral angle. The surface bears moderately pronounced growth lines that are mainly straight, but which contain a small kink in the middle. The vestigial ribbing of the last preserved whorl weakens progressively towards the apertural end. The whorl section is here high, the venter arched and the keel fairly strong. The ornament of the second last whorl differs strikingly from that of the final whorl; the whorl section is square, the keel is relatively lower and broader with broad, shallow side furrows and there are moderately stout ribs that develop a slight swelling at the ventrolateral margin; these form definite tubercles at the beginning of the second last whorl. There are 10—11 ribs on half of the second last whorl.

Owing to the state of preservation of the innermost whorls no remarks may be made on their ornament. The rib remnants of the final whorl are concave forwards. The development of the whorl section is illustrated in fig. 11; the whorl section changes gradually from quadrate to ovaloid (with a H/B ratio of 1.5 falling to 1.4) with rounded ventral and umbilical shoulders.

Specimen LO 3941 t is a slightly crushed, well preserved half of a body chamber, 212 mm in diameter. It is somewhat more strongly ornamented than specimen LO 3938 T and has rather pronounced rib folds, there being eight on the specimen (see pl. XIII, fig. 2). These folds are irregularly located and of irregular strength, and are stronger towards the apertural end than at the beginning of the fragment. There are swellings at the ventrolateral margin at the terminations of the most pronounced folds. The keel is strong and rounded and has very faint side furrows.

Specimen LO 3940 t is the external mold of part of a large whorl. It indicates that the original specimen was smoother than either of the foregoing and the folds are scarcely discernible.

REMARKS. — *Euagassiceras lundgreni* differs from all other species of the genus by becoming smooth in the adult and by the high whorl section. Amongst related species there is none with which it may be directly compared, although it seems to have been derived from *Euagassiceras spinaries* (QUENSTEDT).

Paracoroniceras nudaries (QUENSTEDT) (1884, p. 113, pl. 14, fig. 5) from the Lower Sinemurian is somewhat similar but the keel is stronger with more definite side furrows, the whorls seem to be more depressed and the coiling is more involute; the riblets on the flanks are more regularly developed and more densely situated.

The most similar form is a homeomorph from the *obtusum* zone of the Upper Sinemurian of Endinger, Germany, *Eparietites undaries* (QUENSTEDT). The original to QUENSTEDT (1884, pl. 20, fig. 2) is here designated as lectotype (Tübingen; QUENSTEDT collection of originals (unnumbered)) and figured (pl. XIII, figs. 1, a—b). Apart from being younger than

Euagassiceras lundgreni it has more angular whorls, the keel is stronger and there are rather deep side furrows and feeble side tubercles; it is also more involute.

Subfamily Arnioceratinae Spath, 1924

Genus *Arnioceras* Hyatt, 1867

Type species. — *Arnioceras cuneiforme* Hyatt.

Arnioceras cf. *falcaries* (Quenstedt)

Pl. XIV, fig. 5

1858 *Ammonites falcaries* Quenstedt, p. 70.

?1881 *Ammonites falcaries* Quenst., Lundgren, p. 55, pl. 2, fig. 8.

1884 *Ammonites falcaries* Quenstedt, Quenstedt, p. 102, pl. 13, figs. 13—15.

1931 *Arnioceras falcaries* Quenstedt, Jaworski, p. 120, pl. 2, fig. 4; pl. 4, fig. 4; pl. 6, fig. 3.

?1951 *Arnioceras falcaries* Quenst. sp., Troedsson, p. 240.

1956 *Arnioceras falcaries* (Qu.), Walliser, p. 207, Encl. E, fig. 10.

Material. — Four specimens.

Repository. — Lund, LO 439 (original to Lundgren, 1881, pl. 2, fig. 8), LO 3939, LO 3942, LO 3943.

Provenance. — Döshult, borehole at Oregården, 53.0—53.5 m depth.

Collectors. — The specimen figured by Lundgren (1881) was collected by H. Sjögren, the specimens from Oregården were collected by G. Troedsson; the collector of the remaining material is unknown.

Age. — Lower Sinemurian; *scipionianum* subzone? of the *semicostatum* zone.

Description. — The specimen figured by Lundgren is accurately drawn; it is a small fragment of the outer part of a whorl and has a strong, rounded keel (LO 439). There are no side furrows to the keel and the shoulders slope pronouncedly. The keel is a hohlkiel and it is crossed by strong growth lines that swing strongly forwards from the costal terminations; after proceeding straight for about 3 mm they swing obliquely up onto the keel. The ribs are fairly strong; they swing sharply forwards at the ventrolateral margin and then rapidly fade out; they are flared at the ventrolateral shoulder.

Specimen LO 3939 is a smaller though more complete example (pl. XIV, fig. 5). There are about 17 ribs at a diameter of 16 mm; these are slightly sigmoid on the flanks and at the ventrolateral angle they flare slightly then sweep sharply forwards. They do not reach the strong, rounded keel. The second last whorl of the small specimen is smooth, apart from faint folds in the middle portion.

Similar fragments occur in the cores from the borehole at Oregården at a depth of about 53 m and are referred here for the time being. The specimens from the cores still retain the aragonitic shell material (e. g. LO 3942), whereas LO 3939 has much calcitized shell preserved; LO 439 is a steinkern.

REMARKS. — The essential features considered by QUENSTEDT to mark *Arnioceras falcaries* are, the sigmoidal ribbing, the lack of keel furrows, and the nature of the whorl section. The original specimen on which the species was founded is missing and JAWORSKI (1931, p. 121) proposed the original to pl. 13, fig. 13 as neotype (inadvertently termed lectotype). The Swedish fragments are all too small to permit accurate determination; nevertheless they suggest at least close affinity, if not identity, with the species in question. In both, the ribs always form a concave-outwards arch and swing forwards at almost a right angle on the venter, but fail to reach the keel. The venters are moreover strongly arched.

As regards the rib density of the species it is noteworthy that the neotype is more densely ribbed than other specimens placed with it by JAWORSKI (1931, pp. 122, 123). For example, at a diameter of 36.5 mm one of the forms has 19 ribs compared with the 27 of the neotype, and another example has on its last whorl 17 ribs, where the neotype possesses 23 (cf. 17 ribs at a diameter of 16 mm for specimen LO 3939).

The ventrolateral flares of the Swedish specimens do not occur in any of the typical forms, as far as the writer could ascertain and the apparent rib thickenings shown in QUENSTEDT's (1884) pl. 13, fig. 13 are actually sites of damage.

Arnioceras sp. indet.

Pl. XIV, figs. 1, a—b

MATERIAL. — One specimen.

REPOSITORY. — Stockholm, G. I. C 1024.

PROVENANCE. — Beach at Hittarp (cf. map), northwestern Skåne.

COLLECTOR. — The author.

AGE. — Sinemurian; *Arnioceras* species range from the top of the *bucklandi* zone to the top of the *semicostatum* zone.

DESCRIPTION. — The sides of the whorls are smooth up to a diameter of 12 mm when faint ribs appear. These become later a little sharper, straight and radially orientated. The venter is smooth up to a diameter of 12—13 mm after which a feeble, blunt keel develops; the keel becomes gradually sharper and somewhat more prominent. No ventral grooves occur up to a diameter of 25 mm.

The whorl section is almost circular up to a diameter of 8 mm after which it becomes subquadrate and at around a diameter of 15 mm the sides become slightly convergent. At a diameter of 22 mm there are

14 ribs to the half whorl. The maximum diameter of the specimen is roughly 35 mm; it is septate throughout.

Two other specimens that are probably conspecific with G. I. C 1024 come from a depth of 53.0—53.5 m in the borehole at Oregården. They are figured in pl. XIV, figs. 1, 3 (nos. LO 3943, LO 3947). The crushed, aragonitically preserved shell of LO 3943 consists of three whorls and it has a maximum diameter of approximately 14 mm. The ribs are sharp and radial and there are about 11 of them to the half whorl. LO 3947 is a cast with four whorls and somewhat less dense ribbing than LO 3943.

DIMENSIONS. — The dimensions, as far as ascertainable, of G. I. C 1024 are given below:

(1)			(2)		
diameter	= 35 mm	(= 1.00)	diameter	= 26 mm	(= 1.00)
umbilicus	= 17 »	(= 0.49)	umbilicus	= 12 »	(= 0.47)
			whorl thickness	= 8 »	(= 0.31)

REMARKS. — The fragmentary specimen from Hittarp is of considerable stratigraphic importance as it is the only ammonite yet found in the beach section between Hittarp and Hälsingborg and, apart from *Arnioceras*? sp. indet. from Kulla Gunnarstorp (see p. 152), the only ammonite from the beach section. Owing to the fragile nature of the specimen and the danger attending the removal of the coarse, gritty matrix it was forwarded to Dr. D. DONOVAN, Bristol, for preliminary examination. The author wishes here to express his thanks to Dr. DONOVAN for the time and trouble expended on the specimen and for the valuable comments furnished thereon.

The inner whorls bear some resemblance to the first stages of certain *Gyrophioceras* from the *angulatum* zone as regards the straight ribbing, but no representatives of this genus are known that display the initial smooth development of the present specimen; their whorls are moreover narrow and increase slowly in height and the umbilicus is also wider than in this specimen.

It differs also from the slightly similar inner whorls of the genera *Metophioceras* and *Primarietites*, both as regards the smooth stage and the lack of ventral furrows from a very early phase in the development.

The earliest possible age then for the outcrop in the beach at Hittarp is the uppermost part of the *bucklandi* zone (*bucklandi* subzone).

The Hittarp specimen was found in a course, gravelly sediment containing abundant plant fragments and it seems likely that it drifted ashore to be eventually cast inland by a storm (see REYMENT, 1958, p. 163).

Arnioceras? sp. indet.

Pl. IX, fig. 3

MATERIAL. — One specimen.

REPOSITORY. — Lund, LO 3944. Mold in the collection at the University of Stockholm.

PROVENANCE. — Spit on the northern side of the streamlet at Kulla Gunnarstorp.

COLLECTOR. — G. TROEDSSON.

AGE. — Sinemurian; *Arnioceras* species range from the top of the *bucklandi* zone to the top of the *semicostatum* zone.

DESCRIPTION. — The present specimen consists of the internal mold of a form of maximum diameter of 20 mm. The whorls are subquadrate with slightly inflated sides and with a rounded, arched venter. The ribs are straight, radial and with a tendency to widen towards the venter. As far as could be ascertained, the keel is weak, there are no side furrows and the ribs do not reach the keel. The inner whorls are smooth. There are about 21—22 ribs on the last preserved whorl, which is septate at its end.

DIMENSIONS. —

diameter	= 20	mm	(= 1.00)
umbilicus	= 8	»	(= 0.40)
whorl height	= 6	»	(= 0.30)

REMARKS. — The present specimen is important as it is the only ammonite from the beach section to the north of Hittarp. It differs from the specimen described in the foregoing as *Arnioceras* sp. indet. in having more rounded whorls, blunter and more numerous ribs, and a narrower umbilicus. As the venter could not be satisfactorily studied no definite generic assignation is attempted.

SUBFAMILY ASTEROCERATINAE SPATH, 1946

Genus *Eparietites* SPATH, 1924

TYPE SPECIES. — *Ammonites tenellus* SIMPSON.

Eparietites sp. indet.

Pl. XV, figs. 2, a—b

1951 *Arietites* (s. l.) sp., TROEDSSON, p. 241, pl. 24, fig. 11.

MATERIAL. — One specimen.

REPOSITORY. — Lund, S. G. U. 1024.

PROVENANCE. — Kattslösa (TROEDSSON's bed 8).

COLLECTOR. — G. TROEDSSON.

AGE. — Upper Sinemurian; *denotatus* subzone of the *obtusum* zone.

DESCRIPTION. — The fragmentary specimen bears six ventral terminations of ribs that bend over sharply and fade out at the ventrolateral margin. The keel is high and sharp with concave areas on either side. The whorl section is highly compressed with slightly convergent sides. The ribs run

together as they fade out at the ventrolateral shoulder and form thereby a sort of subkeel. The overall length of the specimen is 16 mm.

REMARKS. — The narrow venter and high keel with concave zones on either side of this specimen clearly indicate it to belong to *Eparietites*. Although the fragment is too small to permit a definite specific assignation it may be compared with *Eparietites denotatus* (SIMPSON) (WRIGHT, 1881, pl. 22) but it has much more compressed whorls and the ventral bends of the ribs are less strong and more sudden.

With the recognition of the present specimen as an *Eparietites* and the reference of TROEDSSON's "*Coroniceras sauzeanum*" to the genus *Promicroceras* there is no conclusive evidence left for his assignation of the lower part of the Kattslösa sequence to the *semicostatum* zone (cf. TROEDSSON, 1951, p. 118).

As therefore none of the ammonites known from the Lower Sinemurian (*semicostatum*) Döshult formation have yet been found in the Kattslösa section it may be concluded that this sequence, as studied by TROEDSSON, begins chronologically in the *obtusum* zone. It is conceivable, that higher Upper Sinemurian ammonites will be found, and TROEDSSON's record of Pliensbachian is in itself possible, on the basis of the present evidence, although the fragments identified by him (TROEDSSON, 1951, p. 241) as "*Uptonia jamesoni*?" have not yet been traced.

The specimen in question was referred by TROEDSSON (1951, p. 241) to *Arietites* (s. l.) and compared with *Arnioceras falcaries* (QUENSTEDT), and also with *A. geometricum* (OPPEL); it has, however, nothing in common with any species of *Arnioceras* as evinced by the strong forward bend of the ribs. On *Arnioceras* species the ribs are straight at small diameters and curves may only be developed at advanced stages of growth.

SUBFAMILY CYMBITINAE BUCKMAN, 1919

Genus *Cymbites* NEUMAYR, 1878

TYPE SPECIES. — *Ammonites globosus* ZIETEN.

REMARKS. — The genus *Cymbites* was proposed by NEUMAYR (1878, p. 64) for small shells with rounded whorls, a body chamber of from half to two thirds of a whorl and with a characteristic rostrum. Species of the genus also have strongly depressed inner whorls that later become rather compressed and may even be higher than broad. The venter is rounded and usually arched on the body chamber and provided with a feeble, rounded keel in some cases. The surface of the shell may be smooth but it is usually ornamented with feeble, flattish striae that tend to group into bundles on flat folds.

Cymbites striaries (QUENSTEDT) would seem to be a primitive representative of the genus which has not yet lost all the attributes of the euagassiceratid ancestor. In the Dorset sequence *C. striaries* occurs below the earliest horizon with *C. laevigatus* (SOWERBY), which further strengthens

this standpoint (cf. DONOVAN, 1957, p. 417). Species of the genus also occur in the *turneri* zone and up to the *stellare* subzone of the *obtusum* zone. *Euagassiceras personatum* (SIMPSON) provides a possible link between *Euagassiceras* and *Cymbites* (cf. BUCKMAN, 1920, pl. 187); it occurs in the *scipionianum* subzone of the *semicostatum* zone.

RANGE. — Lower Sinemurian (*sauzeanum* subzone) up to the Upper Sinemurian *stellare* subzone).

Cymbites striaries (QUENSTEDT)

Pl. XV, figs. 1, a—b; 3—5; figs. 12, a—c; 13

1858 *Ammonites striaries* QUENSTEDT, p. 70, pl. 8, fig. 5.

1881 *Ammonites striaries* QUENSTEDT, LUNDGREN, p. 54, pl. 2, fig. 9.

1884 *Ammonites striaries* QUENSTEDT, QUENSTEDT, p. 105, pl. 13, fig. 24.

1952 *Euagassiceras striaries* (QUENSTEDT), DONOVAN, p. 745.

MATERIAL. — Four specimens.

REPOSITORY. — Lund, LO 440, LO 3943—5.

PROVENANCE. — Dompäng, marl pit at Döshult, borehole at Oregården at a depth of about 53 m.

COLLECTORS. — Two specimens were collected by H. SJÖGREN and G. TROEDSSON, the other collectors are unknown.

AGE. — Lower Sinemurian; *sauzeanum* subzone of the *semicostatum* zone.

DESCRIPTION. — Specimen LO 440, the original to LUNDGREN (1881, p. 54, pl. 2, fig. 9) is a fairly complete specimen with the aperture preserved (see pl. XV, fig. 5). The figure given by LUNDGREN is accurate in all respects. The flanks of the inner whorls are ornamented with faint umbilical bulges but these are entirely absent on the last half whorl. Strongly falcoid striae cover the flanks; they curve sinuously on the sides of the shell and sweep sharply forwards on the venter to the weakly defined keel. The venter is acutely rounded and the flanks almost parallel and only slight inflated. The growth lines cross the keel. There are no side furrows. The apertural margin follows the course of the growth lines but its ventral part is extended into a rostrum. These striae on the last few millimeters of the venter are crowded and finer than their predecessors. A slight constriction sets off the apertural margin; it is confined to the flanks and shallows out before reaching the ventrolateral margin. The body chamber occupies about two thirds of the last whorl.

Fig. 12. *Cymbites striaries* (QUENSTEDT); a, whorl section of LO 440, drawn off just behind the aperture (× 1); b, whorl section of LO 3945 (× 3); c, whorl section of the last preserved part of LO 3943 (× 1).

Specimen LO 3943 is an almost complete, although in places crushed, representative of the species. It is composed of four whorls, as also is LO 440, there are umbilical bulges on the inner whorls but none on the last half whorl. The specimen is figured in pl. XV, fig. 5.

LO 3945 displays the inner whorls. At a diameter of 12 mm they are strongly depressed (see fig. 12 b). There are relatively broad, flat striations on the flanks and crossing the venter and there is no keel, nor are the striations strongly sigmoidal or grouped in bundles.

LO 3944 (pl. XV, fig. 4) is the crushed impression of the aperture and part of the body chamber of a specimen from the borehole at Oregården.

DIMENSIONS. —

	LO 440	
diameter	= 24 mm	(= 1.00)
thickness	= 6 »	(= 0.25)
umbilicus	= 9 »	(= 0.37)
height of last whorl	= 8 »	(= 0.33)

REMARKS. — The Swedish material agrees fairly well with the original (here refigured; pl. XV, figs. 1, a—b). Comparison of our specimens with the holotype at Tübingen showed that the whorls of the latter are somewhat broader, although not as quadrate as depicted in QUENSTEDT's fig. 24 m. QUENSTEDT's figure is idealized and does not show that the striae cross over the feeble keel. The rostrum is incorrectly reconstructed and the last part of the body chamber is not preserved (cf. QUENSTEDT, 1884, pl. 13, fig. 24 and this paper, pl. XV, figs. 1, a—b). The Pforen specimen is composed of five whorls (LO 440 has four, LO 3943 has four) of which about two thirds of the last is body chamber. The subcostate bundling of the striae, already remarked upon in the foregoing description, is also apparent on QUENSTEDT's specimen. Concerning the bundling of the striae QUENSTEDT (1884, p. 105) observed, "Die Streifen treten recht deutlich hervor, bündeln sich sogar stellenweis, als wollten sie sich zu feinen Rippen entwickeln".

It is of interest to note that the umbilici of the Swedish specimens are of the same relative proportion as that of the holotype, namely, 38 pct, whereas that of the specimen referred to the species by DONOVAN (1952, p. 745) is 43 pct. Despite the slightly squarer whorls of the German specimen there are sufficient points of agreement to warrant inclusion of our material in the species. The type is from the Lower Sinemurian of Pforen.

Fig. 13. *Cymbites striaries* (QUENSTEDT). Suture line of specimen LO 3943 at a diameter of 11 mm. (× 5).

DONOVAN (1952, p. 745) chose as lectotype of the species in question the specimen figured by QUENSTEDT (1884, pl. 13, fig. 24) noting at the same time its probable identity with the original figure (QUENSTEDT, 1858, pl. 8, fig. 5).

The figures given by DONOVAN (1957, figs. 1—8) of *Cymbites laevigatus* (SOWERBY) indicate that this species, although similar in form, tends to be only about half the size of *C. striaries*. The apertural rostrum of *C. striaries* is long and straight and the apertural constriction is much less strongly developed (pl. XV, fig. 5); the venter is more strongly and angularly arched on the last whorl of *C. laevigatus* and the species lacks a vestigial keel.

SPATH (1942, p. 267) subdivided the *sauzeanum* subzone into an upper division with *Euagassiceras* spp. and a lower typified by the occurrence of *Cymbites striaries* (QUENSTEDT). These two subdivisions may be of only local English validity for in Sweden, both at Oregården and Döshult, *C. striaries* occurs together with *Euagassiceras resupinatum* and *E. spinaries*. The specimen attributed by HYATT (1889, pl. 9, fig. 14, 15) to *C. striaries* (as "*Agassiceras striaries*") does not seem to belong to this species.

FAMILY OXYNOTICERATIDAE HYATT, 1875

Genus *Oxynoticeras* HYATT, 1875

TYPE SPECIES. — *Ammonites oxynotus* QUENSTEDT.

Oxynoticeras? sp. indet.

Fig. 14, a—b

MATERIAL. — 11 specimens.

REPOSITORY. — Stockholm, Geologiska Institutet, G. I. C 1207—10, plus unnumbered specimens.

PROVENANCE. — Kulladal, southeastern Skåne.

COLLECTOR. — The author.

AGE. — Upper Sinemurian; *oxynotum* subzone of the *oxynotum* zone.

REMARKS. — Several fragments with sharp inner whorls that eventually develop subacute venters are referred provisionally to *Oxynoticeras*. The specimens are all ferruginized casts with smooth sides.

The whorl shape shown, namely, sharp inner whorls becoming rounder suggests that the specimens referred here may be related to *Fastigiceras*

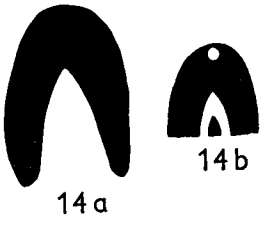

Fig. 14. *Oxynoticeras*? sp. indet.; a, whorl section of G. I. C 1207; b, whorl section of G. I. C 1208. (× 2).

BUCKMAN, 1919, which is characterized by a more rounded venter than in true *Oxynoticeras*. Another genus with a similar venter is *Metoxynoticeras* from the Lower Pliensbachian, of which *Fastigiceras* seems to be the forerunner, and the dwarf *Cheltonia*, contemporary with *Oxynoticeras*, is also comparable.

The subgenus *Gleviceras* BUCKMAN of *Oxynoticeras*, which usually has a sharp keel capping the rounded venter, is in some species similar to our form. For example, *O. (G.) subguibalianum* PIA (cf. DONOVAN, 1958, pl. 1) has no keel on the rather broadly rounded venter.

FAMILY EODEROCERATIDAE SPATH, 1929

Genus *Promicroceras* SPATH, 1925

TYPE SPECIES. — *Ammonites planicosta* SOWERBY.

Promicroceras sp. juv.

Pl. XIV, fig. 4

1951 *Coroniceras sauzeanum* (D'ORBIGNY), TROEDSSON, p. 241.

MATERIAL. — Two specimens.

REPOSITORY. — Lund, nos. 561, 565.

PROVENANCE. — Lower part of the Kattslösa section.

COLLECTOR. — G. TROEDSSON.

AGE. — The range of the genus *Promicroceras* is from the topmost subzone of the Lower Sinemurian (*birchi* subzone of the *turneri* zone) to the lower part of the Upper Sinemurian (*stellare* subzone of the *obtusum* zone).

REMARKS. — Two fragmentary specimens from near Gantofta in the Kattslösa section are referred here. They have quadrate whorls, blunt ribs and no distinct tubercles, although there is a slight swelling at the ventrolateral margin. The ribs flatten somewhat on the venter. There is no keel. The resemblance with *Euagassiceras resupinatum* is slight and at the diameter of the present specimens *Euagassiceras* species are either quite smooth or just feebly ribbed with another type of costation.

Promicroceras sp. juv. occurs immediately below *Eparietites* sp. in the lower part of the sequence at Kattslösa. As the genus *Eparietites* is indicative of the *denotatus* subzone at the top of the *obtusum* zone it seems likely that the beds with *Promicroceras* are the chronologic equivalents of the *stellare* subzone.

FAMILY POLYMORPHITIDAE HAUG, 1887

Genus *Polymorphites* HAUG, 1887

Subgenus *Polymorphites* s. str.

TYPE SPECIES. — *Ammonites polymorphus* QUENSTEDT.