LIST OF THE PLEUROTOMIDÆ OF SOUTH AUSTRALIA, WITH DESCRIPTIONS OF SOME NEW SPECIES.

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PLATE III.

Since the publication of "A list of Aquatic Mollusca inhabiting South Australia" by Mr. D. J. Adcock in 1893, a considerable number of species have been discovered, principally through the researches of Dr. J. C. Verco, who has placed in my hands for identification and description the Pleurotomidæ found by him. Mr. Adcock and Mr. Bednall have also kindly sent me a considerable number of specimens for comparison; so that I have had pretty good material to work upon. Most of the species are very small, and some are at first sight so much alike that the mere sorting of them has been no little labour. The generic distinctions are still very unsatisfactory, and it may be thought that I have taken liberties with certain of them by placing the species in what seem to me the most natural and convenient groups.

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From Mr. Adcock's list I have removed some names, and added others, out of which sixteen are new, making a total of thirty-seven species.

1. Surcula Quori, Reeve, Conch. Icon., *Pleurotoma*, sp. 137. This is the largest species recorded of South Australian Pleurotomidæ. It

para, raiche.) openeers dun.

- 3. Drillia Walcote, Sowerby, Proc. Zool. Soc. 1893, p. 487, pl. xxxviii, figs. 7, 8. Spencer's Gulf; also St. Vincent's Gulf, 13 fathoms (Verco).
- --- var. pallida. Nearly white, with a pale-buff basal zone, and the longitudinal ribs less prominent. With shell sand from Macdonnell Bay (Adcock).
- 4. DRILLIA EXARATA, Reeve, Conch. Icon., Pleurotoma, sp. 201. St. Vincent's Gulf (Verco).

5. Drillia dimidiata, n.sp. Pl. III, Fig. 2.

Testa fusiformis, tenuicula, pallida, antice balteo lato rubro, maculis rufis marginato ornata; spira acuminata, apice obtuso; anfractus 7½, declives, superne leviter concavi, inferne convexiusculi, sulcis numerosis angustissimis spiraliter insculpti, costis longitudinalibus obliquis, irregularibus, paucis, latiusculis sed parum elevatis; sutura anguste canaliculata; anfractus ultimus spiram fere æquans, costis indistinctis vel obsoletis, basim versus attenuatus, haud rostratus; apertura mediocriter lata; columella rectiuscula, tenuiter callosa,

labrum acutum, obsolete crenulatum, antice leviter sinuatum, sinu postico lato et profundo. Long. 10:50, diam. 4:50 mm.

Hab.—Backstairs Passage, 16-18 fathoms (Verco).

I have only seen three specimens of this species, of which only one is adult. The shell is of simple character, with the spire about as long as the body-whorl, which slopes gently to the base without rostrum. The lower half of the whorl is pink, spotted at the margin of the zone with somewhat deeper red.

6. Drillia Bednalli, n.sp. Pl. III, Fig. 3.

Testa elongato-turrita, albida, lineis fuscis numerosis cingulata; spira acuminata, apice papillari; anfractus 9½, primi 2-3 laves, cæteri convexi, obtuse angulati, supra angulum leviter concavi, spiraliter sub-obsolete lirati; costis longitudinalibus ad angulum leviter elevatis, aliter vix conspicuis; sutura leviter impressa, carina parva marginata; anfractus ultimus spiram paulo brevior, convexus, basim versus acuminatus, vix rostratus; apertura oblonga, mediocriter lata; columella leviter contorta; labrum tenue, postice mediocriter sinuatum. Long. 16, diam. 5 mm.

Hab.—St. Vincent's Gulf (Verco).

A very characteristic species, marked with brown transverse lines, about six on the body-whorl. The specimens vary somewhat; the type being pretty distinctly longitudinally ribbed, and the ribs raised to form a crown at the angle; in other individuals the ribs are obsolete, only the nodules at the angle remaining; and one large dead specimen obtained by Dr. Verco at Backstairs Passage (20 fathoms), has but the very faintest sign of nodules and no trace of ribs. This last the very faintest sign of nodules and no trace of ribs. This last specimen measures 20 mm., and although it does not exhibit the characteristic brown lines, I have, after careful comparison, no doubt as to its identity. Other specimens are pure white, without lines, but being dead shells I take them to be simply bleached, and not, as one might at first sight suppose, examples of a colourless variety.

7. Drillia gratiosa, n.sp. Pl. III, Fig. 1.

Testa elongata, glabra, rufo-carnea, flammis rubris latiusculis irregularibus longitudinaliter pieta; spira producta, acuta, ad apieem obtusa; anfractus 9, leviter convexi, læves, sutura impressa sejuneti; anfractus ultimus breviusculus, leviter inflatus, basim versus contractus, vix rostratus; apertura ovalis; columella sinuata, labrum acutum, postice late et profunde sinuatum. Long. 17.50, diam. 6 mm. *Hab.*—St. Vincent's Gulf (Verco).

A smooth shell, pink, with longitudinal red flames; the spire is acutely elongate, but the apex blunt and papillary.

Of this species I have only seen one adult (dead), one young (fresh)

specimen, and a fragment.

8. Drillia saxea, n.sp. Pl. III, Fig. 4.

Testa turrita, solida, alba; spira acutiuscula, ad apicem obtusa; anfractus 6½, convexi, obscure angulati, longitudinaliter obscure plicati, aliter læves; anfractus ultimus spiram brevior, ad basim

truncatus, haud rostratus; apertura curta, latiuscula; labrum leviter inflexum, postice late et profunde sinuatum; columella fere recta. Long. 7, diam. 3 mm.

Hab.—St. Vincent's Gulf (Verco).

A little, stony, white shell, with a short mouth, and lip slightly inflexed; in form it resembles D. Hottentota, Smith.

9. Daphnella dulcis, n.sp. Pl. III, Fig. 5.

Testa oblonga, subfusiformis, alba, dilute fusco irregulariter maculata, antice zona pallide purpurascente, fusco-marginata pieta, ad apicem fusca; spira acuminata, apice papillari; anfractus 6, primi 2 læves, rotundati, cæteri convexi, obtusissime angulati, spiraliter densissime lirati; anfractus ultimus oblongus, vix inflatus, spiram paulo superans, basim versus leviter contractus, vix rostratus; apertura breviuscula, mediocriter lata; columella levissime contorta, fusco tineta; labrum obsolete crenulatum, postice late et profunde sinuatum. Long. 11, diam. 2.50 mm.

· Hab.—St. Vincent's Gulf (Verco).

A charming little shell, delicately coloured and sculptured. The apex is obtuse and papillary, the whorls convex and very obscurely angled; there are no longitudinal ribs, but the whole surface of the shell is very finely and closely spirally ridged.

Var. alba.—Testa omnino alba.—A perfect fresh specimen of pure shining white, without colour or markings, was taken by Dr. Verco in

same locality.

10. DAPHNELLA FRAGILIS, Reeve, P.Z.S. 1845, p. 111; Conch. Icon., sp. 179=lymnææformis, Reeve (non limneiformis, Kiener), loc. eit. sp. 325. Specimens dredged by Dr. Verco in St. Vincent's Gulf vary much in size, the largest being nearly 20 mm. in length.

11. DAPHNELLA DILUTA, n.sp. Pl. III, Fig. 6.

Testa oblongo-ovata, albida, fulvo sparsim maculata; spira acute conica; anfractus 6, convexi, rotundati, spiraliter subtilissime striati; anfractus ultimus spiram superans, ovalis, haud rostratus; apertura latiuscula, labrum tenue, arcuatum, postice mediocriter sinuatum. Long. 10, diam. 4.25 mm.

Hab.—Backstairs Passage, 20 fathoms (Verco).

This shell has much finer strive than D. fragilis, and is of a shorter and more ovate form.

12. DAPHNELLA (?) FALLACIOSA, n.sp. Pl. III, Fig. 7.

Testa elongato-turrita, sordide alba; spira acuminata, apice papillari; anfractus 6½, convexi, vix angulati, spiraliter dense striati, primi 2 læves, sequentes 2-3, longitudinaliter plicati; sutura anguste canaliculata; anfractus ultimus spiram fere æquans, superne obscurissime angulatus, basim versus leviter attenuatus, haud rostratus; apertura latiuscula; labrum tenue, postice breviter sinuatum; columella rectiuscula. Long. 10, diam. 3.25 mm.

Hab.—St. Vincent's Gulf (Verco).

A shell of simple character, with a rather long spire and short

mouth; closely spirally striated, only the upper whorls showing ribs or plice. It is with some uncertainty that I place this with Daphnella.

13. DAPHNELLA BITORQUATA, n.sp. Pl. III, Fig. 9.

Testa parva, ovata, rugosa, nigro-fusca, albo interruptim zonata; spira obtusiuscula, gradata; anfractus 4½, sub-quadrate angulati, spiraliter lirati, longitudinaliter subtilissime lamellati; anfractus ultimus spiram superans, inflatus, supra medium leviter biangulatus, undique liris conspicuis rugosis instructus; apertura lata; labrum arcuatum, postice mediocriter sinuatum. Long. 4·50, diam. 2·50 mm. *Hab.*—Spencer's and St. Vincent's Gulfs (Adcock).

This little shell is very dark brown, relieved by a pale zone between two white keels, crossed by dark-brown streaks. The transverse lire are pretty prominent, and the whole surface is roughened by minute laminæ. Another specimen sent me by Mr. Adcock is almost entirely white.

14. DAPHNELLA (TERES) MIMICA, n.sp. Pl. III, Fig. 10.

Testa turrita, alba; spira elongata, acutiuscula; anfractus 6, convexi, rotundati, superne leviter concavi, undique liris conspicuis alternatim minoribus instructi, inter lirus lamellis minutis oblique longitudinaliter sculpti; anfractus ultimus spiram brevior, ad basim contractus, brevissime rostratus; columella parum contorta; apertura ovata; labrum tenue, arcuatum, sinu postico, latiusculo. Long. 7, diam. 2.50 mm.

Hab.—St. Vincent's Gulf (Verco).

This little shell bears rather a curious resemblance to the British D. teres. I have only seen three specimens, the type here described being the largest; the two smaller ones are shorter in proportion, and not so concave at the top of the whorls.

Var. fusca.—A dark-brown variety, represented by a single specimen

in Mr. Adcock's collection.

15. DAPHNELLA VERCOI, n.sp. Pl. III, Fig. 8.

Testa acuminato-ovata, rugosa, tenuis, pallida, stramineo irregulariter maculata et strigata; spira acuta; anfractus 81, primi 2 læves, cæteri convexi, obtuse angulati, spiraliter dense lirati, lamellis obliquis minutissimis confertissimis sculpti; costis longitudinis obliquis parum elevatis, plerumque indistinctis et evanidis; anfractus ultimus spiram sub-æquans, leviter inflatus, supra angulum convexiusculus, basim versus contractus, vix rostratus; apertura lata; columella rectiuscula; labrum tenue, postice mediocriter sinuatum. Long. 20, diam. 9 mm.

Hab.—Backstairs Passage, 6-20 fathoms.

A thin, delicately sculptured shell, of which the ribs are of an undecided character, entirely disappearing on the last whorl. The spiral lire are narrow and close, and crossed by extremely delicate and profuse oblique lamine. The type specimen, besides the irregular light-brown markings, has two narrow zones below the periphery; while others are pale straw-colour, without markings. All the

specimens are similar in detail of sculpture, but sometimes the longitudinal ribs are only to be seen on the upper whorls; and in one shell sent me by Mr. Bednall from St. Vincent's Gulf, the body-whorl is distinctly ribbed.

16. CLATHURELLA MODESTA, Angas, Proc. Zool. Soc. 1877, p. 38, pl. v, fig. 15. St. Vincent's Gulf.

17. CLATHURELLA LAMELLOSA, n.sp. Pl. III, Fig. 11.

Testa parva, abbreviato-turrita, straminea, fusco sparsim maculata; anfractus 5; apicales læves, cæteri tabulati, valde angulati, spiraliter tricarinati, lamellis pulcherrimis longitudinaliter ornati; sutura canaliculata; anfractus ultimus spiram æquans, quadricarinatus, ad basim contractus, liratus, breviter rostratus; apertura latiuscula; labrum arcuatum, postice profunde sinuatum. Long. 4, diam. 2 mm.

Hab.—St. Vincent's Gulf (Verco).

A very characteristic little shell, with angular whorls forming a tabulated spire; the spiral keels, of which there are four on the bodywhorl, as well as the interstices, are crossed by fine close lamellæ. The unique specimen is straw-coloured, with a single brown blotch

- 18. CLATHURELLA LALLEMANTIANA, Crosse, Journ. de Conch. 1865, p. 423, pl. ii, fig. 5. I think Cl. incrusta, Ten.-Woods (Proc. Roy. Soc. Tasm. 1876, p. 136), is the same; but I cannot agree with Mr. Tryon as to the identity of C. Letourneuxiana, Crosse (Journ. de Conch. 1865, p. 425, plate ii, fig. 7). The latter species I have not seen from South Australia.
- 19. CLATHURELLA TINCTA, Reeve, Proc. Zool. Soc. 1846, p. 5; Conch. Icon., Pleurotoma, sp. 347.

 - = albifuniculata. Reeve, Conch. Icon., Pleurotoma, sp. 350. = rubroguttata, H. Adams, Proc. Zool. Soc. 1872, p. 14, pl. iii, fig. 25.
 - = rufozonata, Angas, Proc. Zool. Soc. 1877, p. 38, pl. v, fig. 13.

The spots and lines vary in number, size, and colour, from black to orange, and occasionally the species occurs white without spots.

- 20. CLATHURELLA PARVULA, Reeve, Proc. Zool. Soc. 1845; Conch. Icon., Pleurotoma, sp. 254.
 - = Clathurella crassina, Angas, Proc. Zool. Soc. 1880, p. 416, pl. xl,
- ?= Mangilia philomena, Ten.-Woods, Roy. Soc. Tasm. 1875, p. 141.

Reeve's description of this species is somewhat inadequate, and he gives no dimensions, but judging from a series of specimens, I am convinced that Angas' crassina cannot be separated from it. The fine fresh specimens submitted to me are yellowish, with a brown band below the periphery, tinged with brown at the sutures, between the ribs, and on the lip and columella. Worn specimens are sometimes white, and probably there is a white variety. Angas mistook bleached specimens of this species for *Pleurotoma spurca*, Hinds, which, although somewhat similar in general appearance, may be clearly distinguished

by the decided outward curve of the lip forming a sharp angle on each side of the sinus.

From the description I think Tenison-Woods' Mangilia philomena is a synonym for Clathurella parvula, but, in the absence of a figure, and not having seen an authentic specimen, I cannot say with certainty.

21. CLATHURELLA BICOLOR, Angas, Proc. Zool. Soc. 1871, p. 18, pl. i, fig. 20. This species may be distinguished from the smaller forms of *C. parvula*, by its more elongated and less angular form.

22. Mangilia Adcocki, nom. nov.

I propose this name for the *M. bella* of Adams and Angas (Proc. Zool. Soc. 1863, p. 419, pl. xxxvi, fig. 6), their name being preceupied by Hinds. Tryon (Manual of Conchology, vol. vi, p. 270) considers it identical with *M. Boakei*, Nevill, a Ceylon shell with which, from the figure and description, it seems to me to have but little affinity. Adcock's list gives as a synonym *M. gracilina*, Ten.-Woods, but I have sought the records in vain for the name. *M. Adcocki* is an elegantly formed shell, with a very acute spire and moderately attenuated base; the ribs are numerous, thick and rounded, crossed by numerous rather faint spiral sulci. Fresh, adult specimens are much larger than Adams' type, measuring 16–19 mm. in length. It is a true *Mangilia*, though approaching *Cythara* in form.

23. Mangilia picta, Adams and Angas, Proc. Zool. Soc. 1863, p. 419, pl. xxxvii, fig. 7.

= Meredithæ, Ten.-Woods, Proc. Roy. Soc. Tasm. 1875, p. 142. = tæniata, Ten.-Woods, ibid. 1878, p. 36.

This species varies somewhat in form, and considerably in colouring. The type has a broad brown band occupying the upper half of the body-whorl; some specimens are pale straw-colour without markings, and others are covered with brown spiral linear bands; and usually a brown line appears just above the angle.

Hab.—Spencer's and St. Vincent's Gulfs.

24. Mangilia St.-Galle, Ten.-Woods, Roy. Soc. Tasm. 1876, p. 137; and var. *Benedicti*. I have not been able to identify this species.

25. Mangilia alucinans, n.sp. Pl. III, Fig. 12.

Testa breviter fusiformis, straminea, spiraliter fusco interruptim lineata; spira acuminata, acutiuscula, gradata; anfractus 7-8, obtuse angulati, spiraliter leviter sulcati, costis longitudinalibus crassis, rotundatis, rectis instructi; anfractus ultimus spiram æquans, superne obtuse angulatus, deinde leviter convexus, basim versus attenuatus, haud rostratus; apertura mediocriter lata, utrimque angustior; columella rectiuscula; labrum arcuatum, postice vix sinuatum. Long. 6·50, diam. 3 mm.

Hab .- Yankalilla Bay.

This species may be distinguished by its thick, rounded, straight ribs; the spiral grooves are more or less distinct. Some specimens

are nearly white; in others numerous brown spiral lines cross the ribs, interrupted by the interstices, as in *M. pieta*. There is generally a brown line just above the angle.

--- var. ornata, Pl. III, Fig. 13. Spira longior; costis maculis fuscis pulcherrime ornatis. A beautifully marked shell, with a longer spire than the type, from Yankalilla Bay; belonging to Mr. Adcock.

Shells of this species have been mistaken for M. Vincentina, Crosse, and also for M. lineata, Reeve. The type of the former is a little plain brown shell, with very obscure bands of darker brown. It is more sharply angular, and the ribs are thinner than in M. alucinans. M. lineata, Reeve (Conch. Icon., Mangelia, sp. 42) is a synonym for M. rugulosa, Philippi, a Mediterranean species, of which M. pura, Reeve (sp. 63), is another synonym. There is no doubt Mr. Angas mistook different forms of the species I now call M. alucinans for these.

- 26. Mangilla insculpta, Adams and Angas, Proc. Zool. Soc. 1863, p. 420, pl. xxxvii, fig. 8. The characters of this species are somewhat obscure, but it is more narrowly cylindrical and high-shouldered than others of the group. I have picked out a few specimens from a mixed lot of Dr. Verco's St. Vincent's Gulf shells.
- 27. Mangilia Hexagonalis, Reeve, Proc. Zool. Soc. 1845, p. 118, Conch. Icon., *Pleurotoma*, sp. 293. St. Vincent's Gulf.
- 28. Mangilia paucimaculata, Angas, (Glyphostoma) Proc. Zool. Soc. 1880, p. 416, pl. xl, fig. 7. St. Vincent's Gulf.
- 29. Mangilia Vincentina, Crosse, Journ. de Conch. 1865, p. 422, t. xi, fig. 6. Among all the South Australian shells I have examined, none are quite conformable to Crosse's type of this species.

30. Mangilia connectens, n.sp. Pl. III, Fig. 14.

Testa fusiformis, utrimque acuminata, sordide albida, spira acute turrita; anfractus 7, angulati, superne declives, infra angulum leviter convexi, spiraliter dense striati, liris spiralibus paucis tenuissimis cingulati; costis longitudinalibus circiter 9, leviter obliquis, tenuibus; anfractus ultimus basim versus leviter constrictus, striis obliquis conspicuis; apertura obliqua; columella rectiuscula; labrum tenue, postice late sed vix profunde sinuatum. Long. 8, diam. 3 mm.

Hab .- St. Vincent's Gulf.

An almost colourless shell, tapering anteriorly, and with a sharpish, turreted spire; the body-whorl being of about the same length as the spire. It is finely striated throughout, besides having thin, spiral, and somewhat distant ridges, though in some specimens these ridges are by no means prominent. The longitudinal ribs are narrow and slightly oblique. The specimens, in which the sculpture is more pronounced, seem to connect this species with *Clathurella*.

31. Mangilia inornata, n.sp. Pl. III, Fig. 15.

Testa fusiformis, alba; spira acuminata, acutiuscula; anfractus 7, primi 2 læves, sequentes angulati, spiraliter obscurissime lirati, longitudinaliter sub-inconspicue costati, superne subconcavo-declives,

infra angulum leviter convexi; anfractus ultimus spiram fere æquans haud costatus, liris spiralibus numerosis per-inconspicuis sculptus, basim versus attenuatus, levissime constrictus; apertura oblonga; columella recta; labrum tenue, postice breviter sinuatum. Long. 8.50, diam. 3 mm.

Hab.—St. Vincent's Gulf.

A white shell, resembling in form the typical ribbed *Mangilia*, but the ribs are only faintly discernible on the spire, and obsolete on the body-whorl.

32. Mangilia alticostata, n.sp. Pl. III, Fig. 16.

Testa elongato-turrita, hexagonalis, sordide albida; spira perelongata, ad apicem acuta; anfractus 8, planulati, spiraliter striati, costis longitudinalibus 6, elevatis, acutissimis, continuis instructi; anfractus ultimus brevis, basim versus constrictus, obtuse angulatus, brevissime rostratus; apertura oblonga, breviuscula; labrum acutum, sinu postico latiusculo. Long. 13, diam. 4 mm.

Hab.—St. Vincent's Gulf.

Shell like an exaggerated form of *M. hexagonalis*, Reeve, with longer spire, and ribs more prominent and acutely angular.

33. Mangilia cuspis, n.sp. Pl. III, Fig. 17.

Testa fusiformis, utrimque acuminata, albida, antice fusco late zonata, ad apicem fusca; spira acute turrita; anfractus 8, primi 3 (apicales) minuti, politi, cæteri obtuse angulati, spiraliter dense lirati, costis numerosis, angularibus instructi; anfractus ultimus supra angulum leviter concavus, infra convexiusculus, basim versus attenuatus; columella levissime contorta; apertura elongata; labrum tenue, postice brevissime sinuatum. Long. 8·50, diam. 3 mm.

Hab .- St. Vincent's Gulf.

Allied to M. connectens, with finer sculpture, and distinguished by its sharp brown apex and the brown lower half of the body-whorl.

- 34. Mangilia anomala, Angas, (Purpura) Proc. Zool. Soc. 1877, pl. v, fig. 1. This certainly belongs to the Pleurotomidæ, and was, in my opinion, correctly placed by Professor Tate in the genus Mangilia (Proc. Linn. Soc. New South Wales, vol. v, p. 131), although Mr. Tryon thought well to replace it in the family Purpuridæ.
- 35. Mangilia Australis, Adams and Angas, (Bela) Proc. Zool. Soc. 1863, p. 420; and var. mitralis=Bela mitralis, Adams and Angas, loc. cit. I cannot admit this last to be a species distinct from M. Australis, the only difference being a greater length of spine. This species was certainly misplaced in the genus Bela, which forms a characteristic group inhabiting the northern seas.
- 36. MITROMORPHA BRAZIERI, Smith, Proc. Zool. Soc. 1891, p. 487, pl. ii, fig. 1. Small imperfect specimens from St. Vincent's Gulf.
- 37. CYTHARA COMPTA, Adams and Angas, Proc. Zool. Soc. 1863, p. 419, pl. xxxvii, fig. 5. Mr. Tryon places this in the genus Daphnella, but, although on the confines, I think it a Cythara. In adult specimens there is a somewhat faint varix behind the lip, which is slightly denticulate within.

REJECTED SPECIES.

Mangilia lineata and M. pura, Reeve. - These are synonyms of M. rugulosa, Phil., a Mediterranean species not likely to be found in South Australia.

Mangilia Letourneuxiana, Crosse, Journ. de Conch. 1865, p. 425, pl. ii, fig. 7.—I have no evidence that this species occurs in South Australia. Specimens of M. Lallemantiana have been mistaken for it. Mangilia gracilina, Ten.-Woods? (see note on M. Adcocki, ante p. 29).—It would have been convenient to adopt this name had it not been too near "gracillima," a name already twice employed in the familiar.

Glyphostoma spurca, Hinds.—I have no evidence that this species occurs in South Australia. Specimens of Clathurella parra have been mistaken for it.

EXPLANATION OF PLATE III.

Drillia gratiosa. dimidiata. Bednalli. ã. ,, saxea. Daphnella dulcis. ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? ?? diluta. fallaciosa. " Vercoi. bitorquata. ", mimica. Clathurella lamellosa. Mangilia alucinans. 10. 11. 12. var. ornata. connectens. 14. 15. 16. " inornata. alticostata. cuspis. Adcocki; nat. size.

G.B.Sowerby delet λh . Hanhart imp. SOUTH AUSTRALIAN PLEUROTOMIDÆ .