P L A T E S

(1 — 22)

Explanation of plate 1

Fig. 1. Unconformity between the Pliocene Kume Formation and the late middle Miocene Hase Formation (arrow mark) behind the Hatasome Public Hall at Dai, Harima-cho, Hitachiota City, (Ha; Hase Formation, Ku; Kume Formation).

Fig. 2. Unconformity between the Pliocene Kume Formation and the late middle Miocene Hase Formation (arrow mark) at about 500 m south of Benten, Kamezaku-cho, Hitachiota City, (Ha; Hase Formation, Ku; Kume Formation).

Fig. 3. Unconformity between the Pliocene Kume Formation and the late middle Miocene Hase Formation (arrow mark) at about 100 m south of Nodono, Takanuki-cho, Hitachiota City, (Ha; Hase Formation, Ku; Kume Formation).

Fig. 4. Unconformity between the late middle Miocene Kawarago Formation and the Pre-Tertiary the basement rocks (arrow mark)

at about 500 m south of the Hitachi Commercial High School, Kuji 2 chome, Kuji-cho, Hitachi City, (Bs; basement rocks, Ka; Kawarago Formation).

Fig. 5. Unconformity between the late middle Miocene Hase Formation and the Pre-Tertiary basement rocks (arrow mark) at about

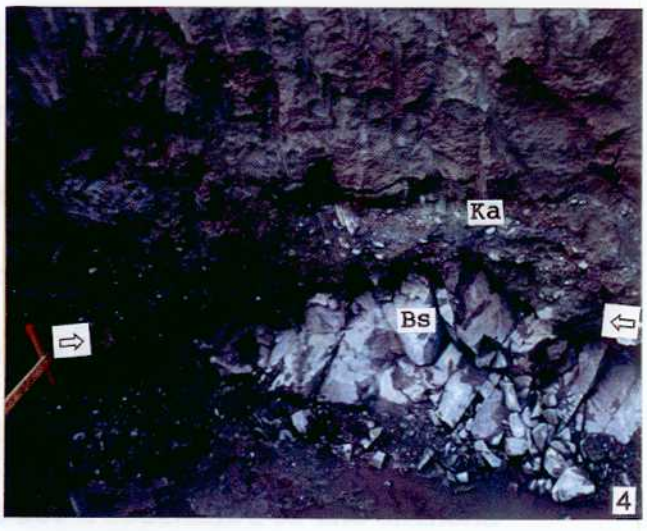
500 m northeast of Moto-Shiraha, Shiraha-cho, Hitachiota City, (Bs; basement rocks, Ha; Hase Formation).

Fig. 6. Stratigraphic boundary of the middle Miocene Genjigawa Formation and the early middle Miocene Zuiryu Formation (arrow mark) at Hanabusa, Kanasago-machi, Kuji-gun, (Zu; Zuiryu Formation, Ge; Genjigawa Formation).


Ku
Ha
1


Ku
Ha
2


Ku
Ha
3


Ka
Bs
4


Bs
Ha
5


Ge
Zu
6

Explanation of plate 2

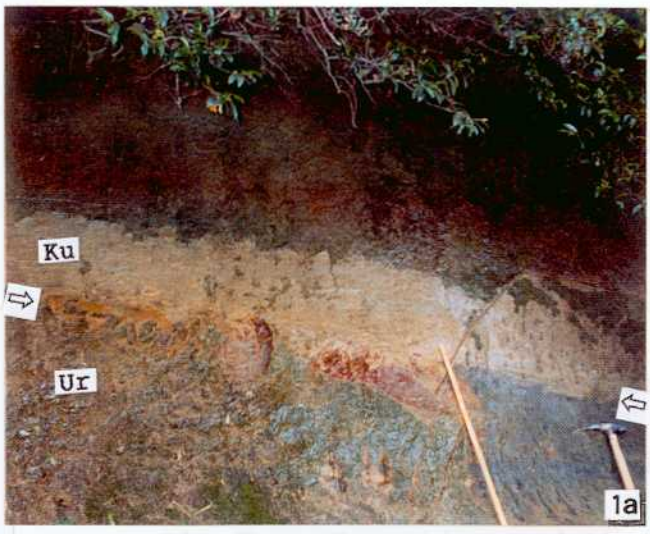
Figs. 1a-b; 1a. Unconformity between the Pliocene Kume Formation and the late middle Miocene Urizura Formation (arrow mark) at about 300 m southwest of Nagai, Nukada-Togo, Naka-machi, Naka-gun; 1b. close up view of the unconformity of the right side of Fig.1a (Ur; Urizura Formation, Ku; Kume Formation).

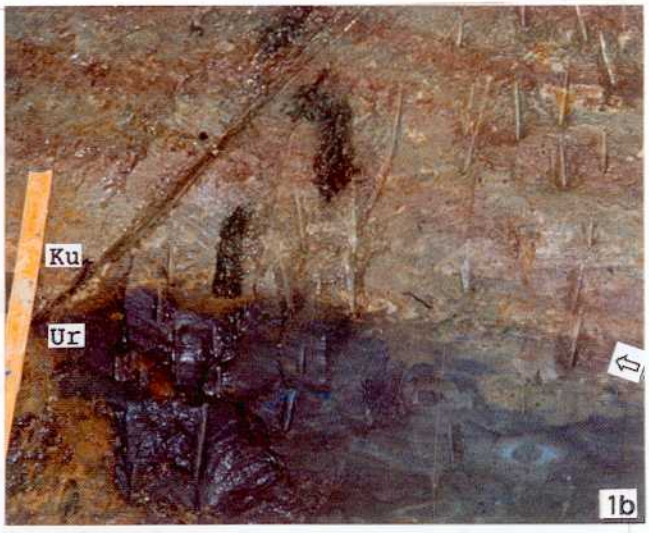
Fig. 2. Unconformity between the Pliocene Hitachi Formation and the late middle Miocene Kawarago Formation (arrow mark) at about 500 m north of the Hitachi Custom Office, Omika-cho, Hitachi City, (Ka; Kawarago Formation, Ht; Hitachi Formation).

Fig. 3. Unconformity between the Pliocene Hanareyama Tuff Member of the Kume Formation and the late middle Miocene Kawarago Formation (arrow mark) at about 200 m southeast of the Chinone Hospital, Kuji 4 chome, Kuji-cho, Hitachi City, (Ka; Kawarago Formation, Ha; Hanareyama Tuff Member of the Hitachi Formation).

Fig. 4. Unconformity between the Pliocene Muramatsu Formation and the late middle Miocene Shinkawa Formation (arrow mark) at about 700 m west of Kawane, Tokai-mura, Naka-gun, (Sh; Shinkawa Formation, Mu; Muramatsu Formation).

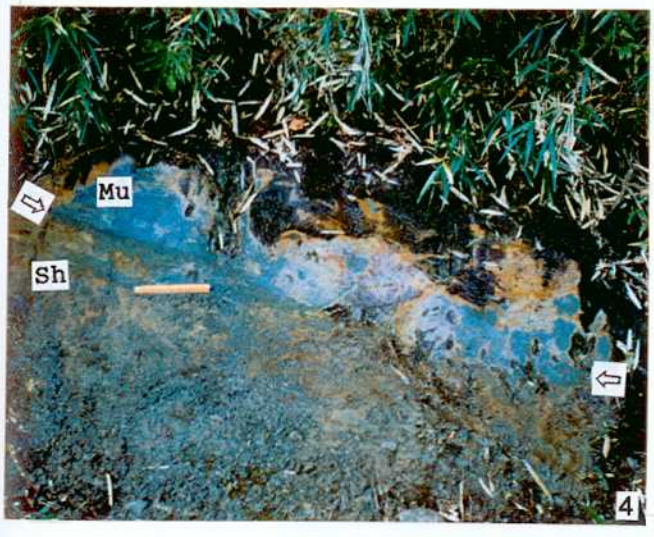
Fig. 5. Unconformity between the Pliocene Kume Formation and the late middle Miocene Kawarago Formation (arrow mark) at about 300 west of the Chinone Hospital, Kuji 4 chome, Kuji-cho, Hitachi City, (Ka; Kawarago Formation, Ku; Kume Formation).


Ku
Ur
1a


Ku
Ur
1b


Hi
Ka
2


Ha
Ka
3


Mu
Sh
4


Ku
Ka
5

Explanation of plate 3

Figs. 1-2. Type locality of the Pliocene Momiya Conglomerate Member of the Kume Formation behind the Momiya Station of Hitachi Dentetsu Line (altitude about 10 m height) at Minami-Koya 2 chome, Ishinazaka-cho, Hitachi City.

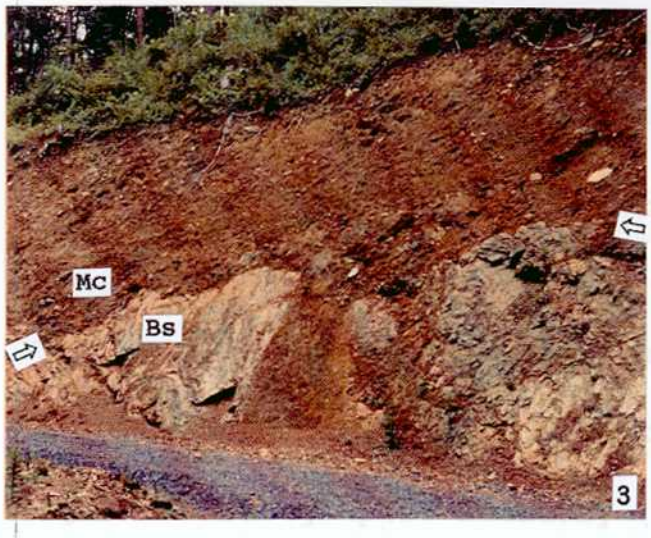
Figs. 3-4. Unconformity between the Pliocene Momiya Conglomerate of the Kume Formation and the Pre-Tertiary basement rocks (arrow mark) at about 500 m west of the Mayumijinjya Shrine (altitude about 270 m height), Kamezaku-cho, Hitachiota City, (Bs; basement rocks, Mc; Momiya Conglomerate Member of the Kume Formation).

Fig. 5. Unconformity between the Pliocene Momiya Conglomerate of the Kume Formation and the Pre-Tertiary basement rocks (arrow mark) at about 50 m southwest of the Akabane Tekko Danchi in Ishinazaka-cho, Hitachi City, (Bs; basement rocks, Mc; Momiya Conglomerate Member of the Kume Formation).

Fig. 6. The Momiya Conglomerate Member at Suimon, Hitachiota City showing angular cobble-sized gravels.


1


2



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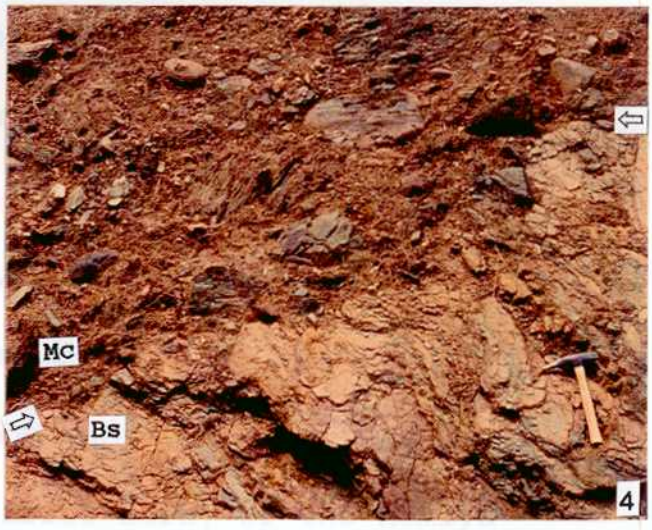

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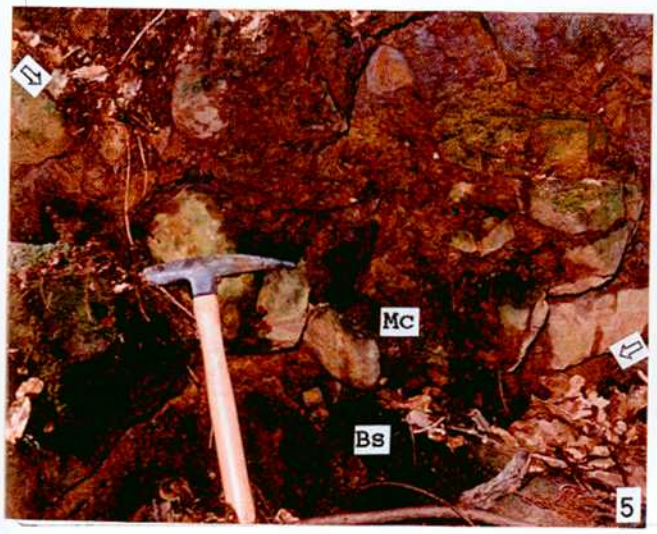

5


6

Explanation of plate 4

Fig. 1. Boring shell-bearing cobble-sized gravel of the Momiya Conglomerate Member at about 500 m northwest of the Mayumijinjya Shrine (altitude about 280 m height) in Kamezaku-cho, Hitachiota City.

Fig. 2. Boring shell-bearing cobble-sized gravel of the Momiya Conglomerate Member at the type locality (altitude about 40 m height), Ishinazaka-cho, Hitachi City.

Fig. 3. Boring shell-bearing angular cobble-sized gravel of the Momiya Conglomerate Member at the about 250 m east of Suimon (altitude about 30 m height), Omori-cho, Hitachiota City.

Figs. 4-5. The Momiya Conglomerate Member around the type locality showing rounded pebble to cobble-sized gravels.

Fig. 6. Stratigraphic boundary (arrow mark) of the Momiya Conglomerate Member and siltstone of the Kume Formation, at Ishinazaka, Ishinazaka-cho, Hitachi City, (Mc; Momiya Conglomerate Member, Ku; Kume Formation).


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2


3


4


5


Ku
MC
6

Explanation of plate 5

Fig. 1. Type locality of the late middle Miocene Hitachinaka Formation at the Kamaagejinjya Shrine, Hetano, Hitachinaka City.

Fig. 2. Outcrop of pumice-dominant tuff with many brecciated siltstone in the Hitachinaka Formation at Hetano, Hitachinaka City.

Fig. 3. Outcrop of the late middle Miocene Hetano Tuff member of the Hitachinaka Formation at south margin of the Ajigaura Beach, Ajigaura, Hitachinaka City, (Hn; Hitachinaka Formation, He; Hetano Tuff Member).

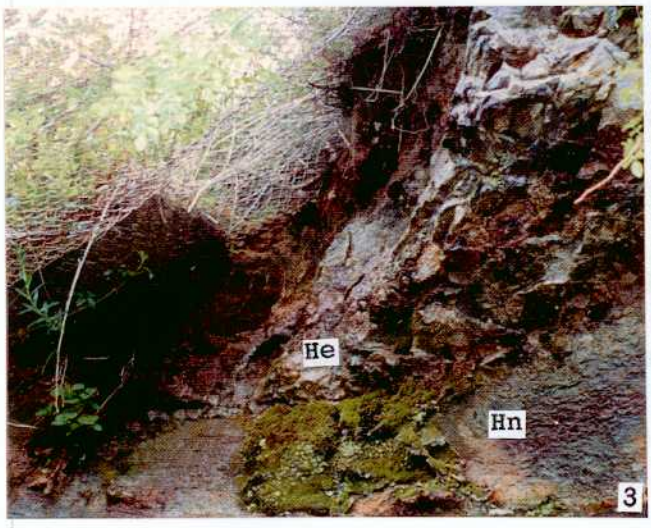
Fig. 4. Interfingering structure of the Hetano Tuff Member and the Hitachinaka Formation at south margin of the Ajigaura Beach, Ajigaura, Hitachinaka City, (Hn; Hitachinaka Formation, He; Hetano Tuff Member).

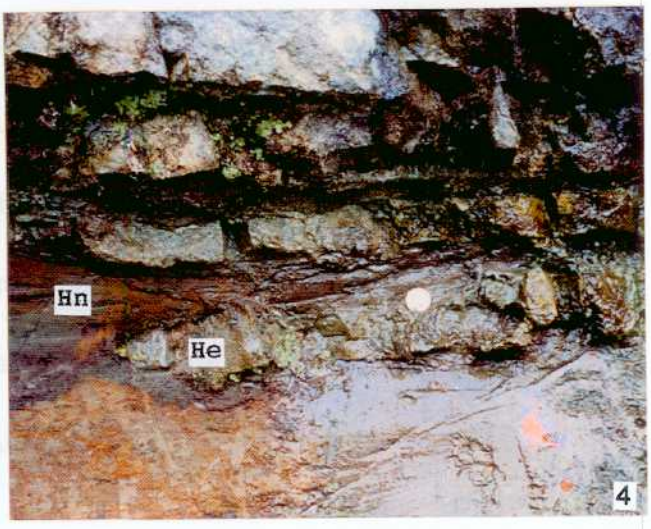
Fig. 5. Accretinal lapilli recognized in the late middle Miocene Kawarago Formation at Mizuki, Mizuki-cho, Hitachi City.

Fig. 6. Outcrop of pumiceous tuff in the late middle Miocene Urizura Formation, at about 300 m southeast of Aoki, Kanasago-machi, Kuji-gun.


1


2


He
Hn
3


Hn
He
4


5


6

Explanation of plate 6

Figs. 1-2. Sheared zone and fault in the Pliocene Kume Formation at About 400 m southwest of Nagai, Nukada-Togo, Naka-machi, Naka-gun.

Fig. 3. Echinoid fossil locality of the Pliocene Muramatsu Formation at Muramatsu, Tokai-mura, Naka-gun (Loc. no. 26).

Fig. 4. Echinoid fossil locality of the Pliocene Muramatsu Formation at Muramatsu, Tokai-mura, Naka-gun (Loc. no. 35).

Fig. 5. Echinoid fossil locality of the Pliocene Kume Formation at Kume, Kanasago-machi, Kuji-gun (Loc. no. 19).

Fig. 6. Echinoid fossil locality of the Pliocene Muramatsu Formation at Muramatsu, Tokai-mura, Naka-gun (Loc. no. 32).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Explanation of plate 7

Fig. 1. Echinoid fossil locality of the Pliocene Hatsuzaki Sandstone Member of the Hitachi Formation at the Trurushimisaki Cape, Hitachi City (Loc. no. 37).

Fig. 2. Echinoid fossil locality of the Pliocene Hatsuzaki Sandstone Member of the Hitachi Formation at Takaiso, Hitachi City (Loc. no. 39).

Fig. 3. Echinoid fossil locality of the middle Miocene Tatsukuroiso Mudstone Member of the Higashikanasayama Formation at Tatsukuroiso, Suifu-mura, Kuji-gun (Loc. no. 15).

Fig. 4. Echinoid fossil locality of the Pliocene Kume Formation at Satake, Hitachiota City (Loc. no. 21).

Fig. 5. Echinoid fossil locality of the early middle Miocene Naeshiroda Formation at Shimoyazawa, Daigo-machi, Kuji-gun (Loc. no. 11).

Fig. 6. Echinoid fossil locality of the early middle Miocene Naeshiroda Formation at Tatsugami, Daigo-machi, Kuji-gun (Loc. no. 08).


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Explanation of plate 8

Figs. 1a-2c. *Echinocyamus crispus* Mazzetti, x 5.0 · · · p. 143

Fig. 1a. aboral side; 1b. oral side; 1c. lateral side; IGUT. no. 14522.

Fig. 2a. aboral side; 2b. oral side; 2c. lateral side; IGUT. no. 14523.

Figs. 3a-4b. *Scaphechinus* cf. *mirabilis* A. Agassiz, x 4 · · p. 147

Fig. 3a. aboral side; 3b. oral side; 3c, lateral side; IGUT. no. 14524.

Figs. 4a. aboral side; 4b. oral side; IGUT. no. 14525.

Figs. 5a-c. *Temnotrema rubrum* (Döderlein), x 4.0 · · · p. 140

Fig. 5a. aboral side; 5b. oral side; 5c. lateral side; IGUT. no.14521.

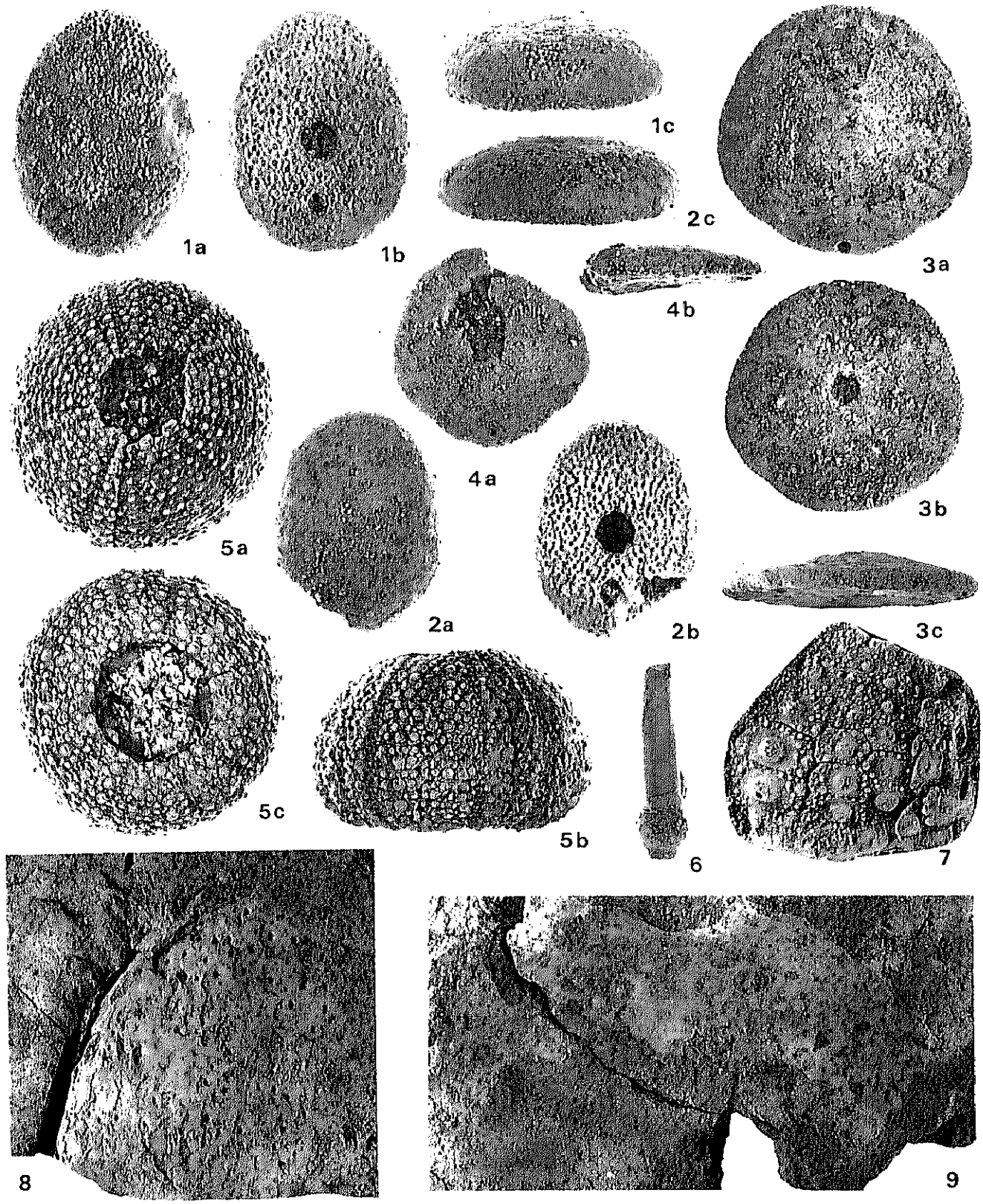
Figs. 6-7. *Anthocirais* sp. · · · · · · p. 138

Fig. 6. x 1.5, primary spine; IGUT. no. 14519: Fig. 7. x 2.0, lateral side (external mold by rubber); IGUT. no. 14520.

Figs. 8-9. Echinothuriidae gen. et sp. indet. · · · p. 135

Fig. 8. x 1.0, aboral side (internal mold); IGUT. no. 14517: Fig. 9. x 1.5, oral side; IGUT. no. 14518.

Kikuchi, Y. Neogene echinoid fossils from the northern part of Ibaraki Plate 8



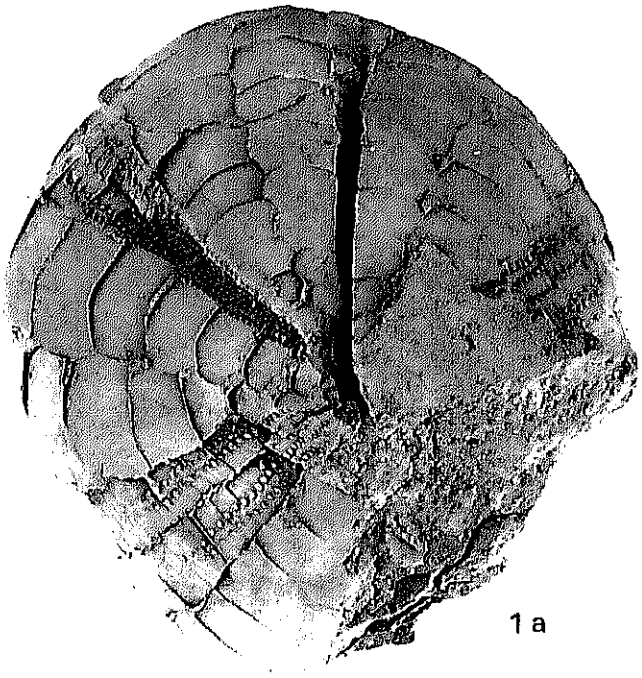
Explanation of plate 9

Figs. 1a-2b. *Palaeopneustes psoidoperidus* Nishio, x 0.8

. . . . . p. 153

Fig. 1a. aboral side (internal mold); 1b. oral side (internal mold); IGUT. no. 14632: Fig. 2a. aboral side (internal mold); Fig. 2b. oral side (internal mold); IGUT. no. 14533.

Kikuchi, Y. Neogene echinoid fossils from the northern part of Ibaraki Plate 9



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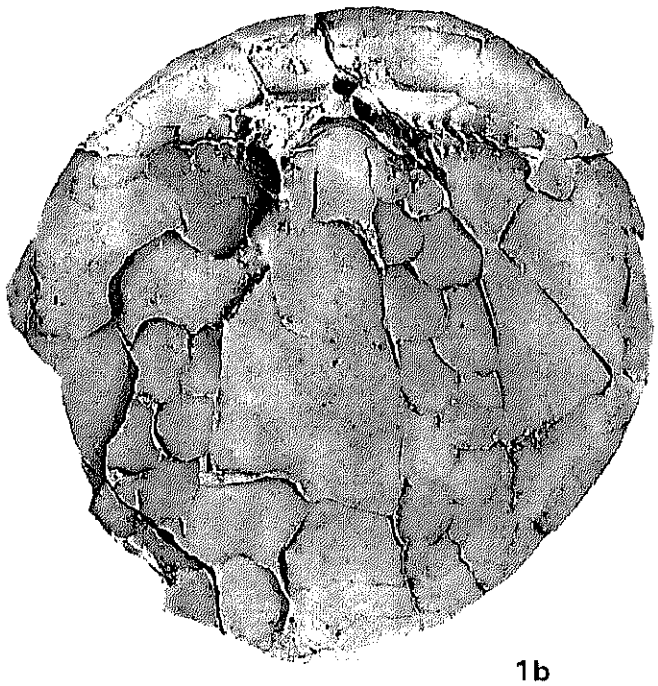

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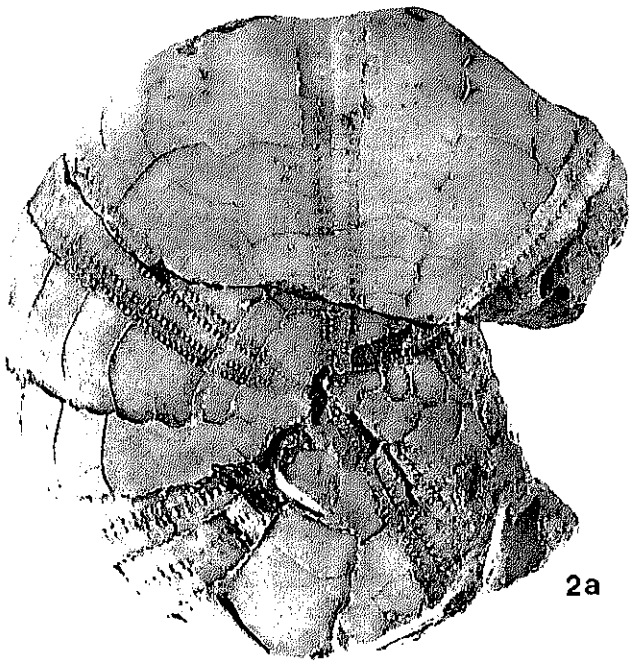
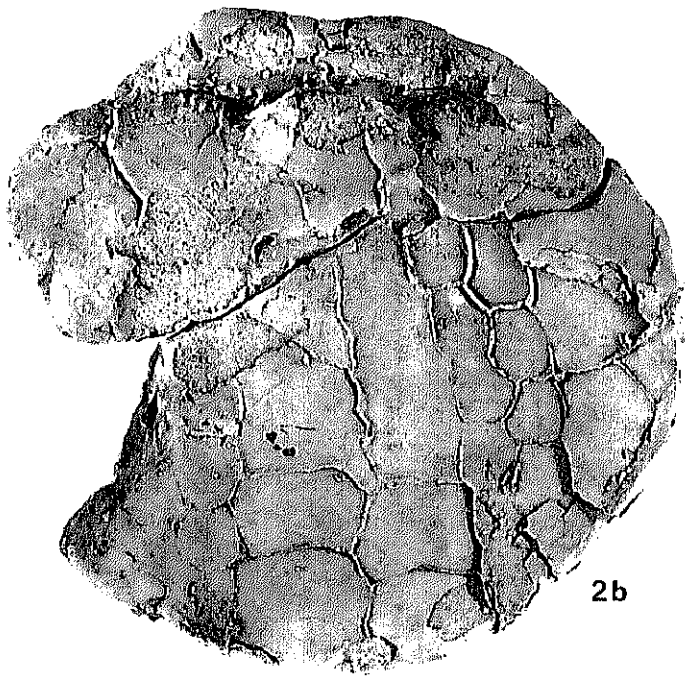


2a



2b

Explanation of plate 10

Figs. 1a-3. *Pourtalesia kusachii* n. sp. ····· p. 149

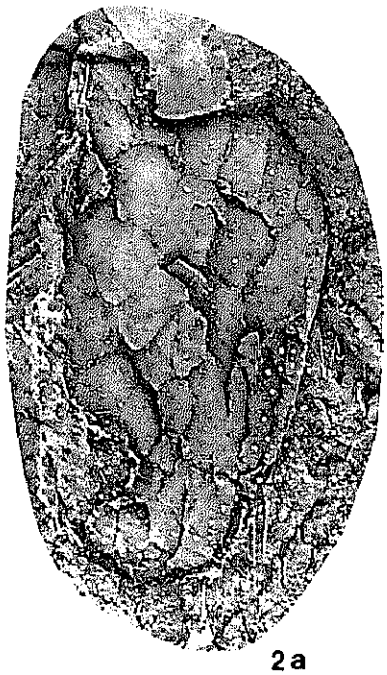
Fig. 1a. x 2.0, aboral side (internal mold); 1b. x 8.0, close up view of apical part (internal mold); Paratype, IGUT. no. 14527: 2a-b. x 2.5; right lateral side (external mold by rubber); Holotype, IGUT. no. 14526: Fig. 3. x 2.5, left lateral side (internal mold); IGUT. no. 14528.

Figs. 4-6. Gregarious specimens (internal mold) of *Palaeopneustes psoidoperidus* Nishio, x 0.8, ····· p. 153

Fig. 5. lateral side; IGUT. no. 14534: Fig. 6. aboral side; IGUT. no. 14535.


1a


1b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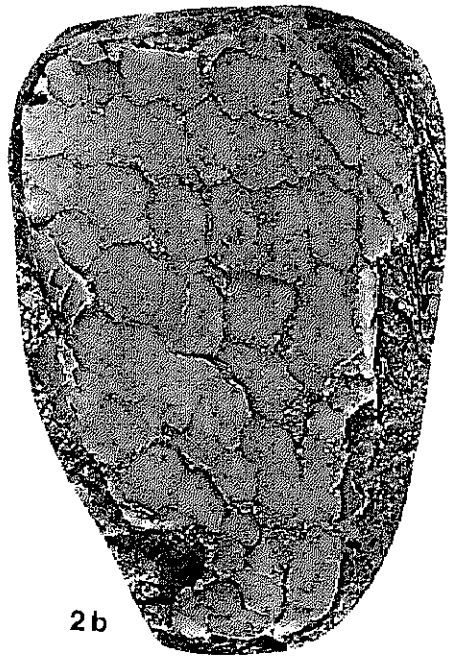
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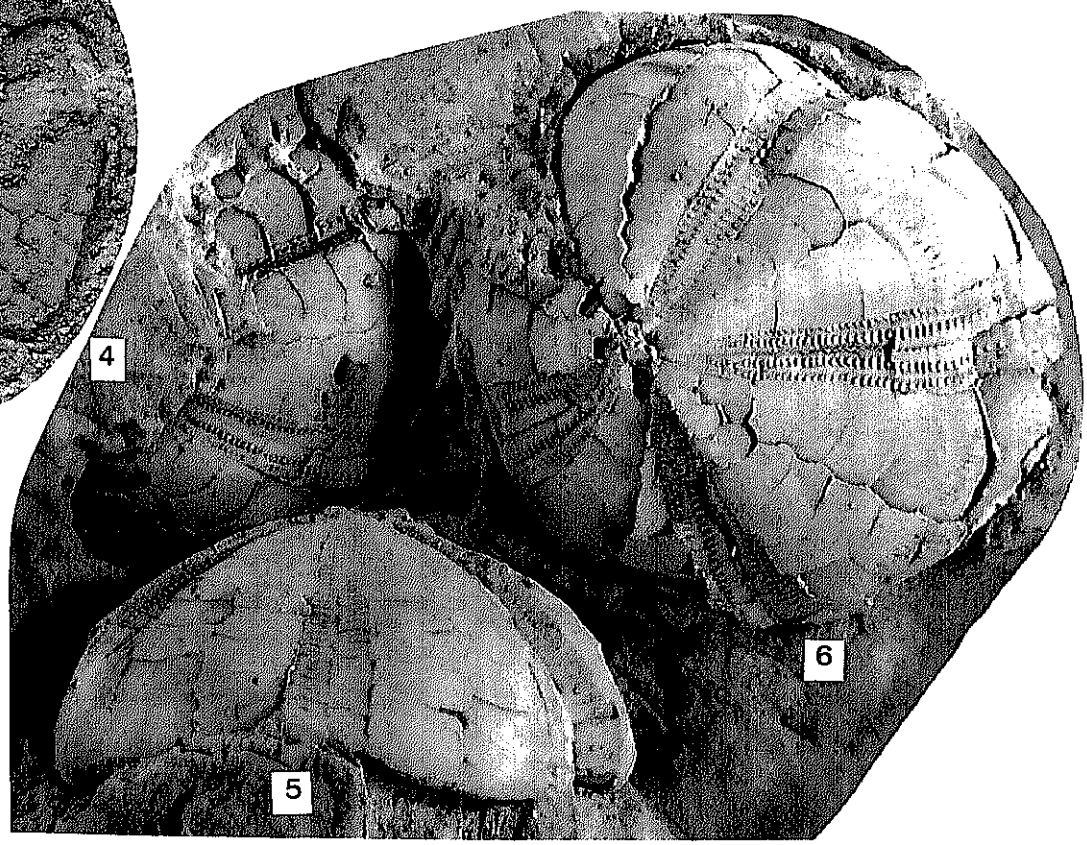
3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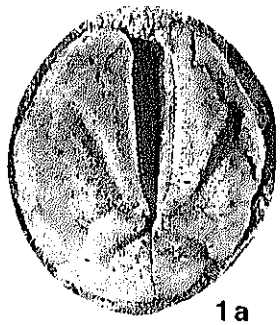
5

6

Explanation of plate 11

Figs. 1a-11. *Brisaster owstoni* Mortensen ..... p. 179

Figs 1a-c. x 1.0; 1a. aboral side (external mold by rubber); 1b. aboral side (internal mold); 1c. lateral side (internal mold); 1d. x 2.0, close up view of apical part; IGUT. no. 14549: Figs. 2a-b. x 1.0; 2a. aboral side (internal mold); 2b. oral side (internal mold); IGUT. no. 14550: Fig. 3. x 1.0, aboral side (internal mold); IGUT. no. 14554: Figs. 4a-b. x 1.0; 4a. aboral side (internal mold); 4b, oral side (internal mold); IGUT. no. 14551: Fig. 5. x 1.0, aboral side (internal mold); IGUT. no. 14554: Fig. 6. x 1.0, aboral side (internal mold); IGUT. no. 14558: Figs. 7a-b. x 1.0; 7a. aboral side (internal mold); 7b. oral side (internal mold); IGUT. no. 14553: Fig. 8. x 1.0, aboral side (internal mold); IGUT. no. 14552: Fig. 9. x 1.0, aboral side (internal mold); IGUT. no. 14556: Figs. 10a-b. x 1.0; 10a. aboral side (internal mold); 10b.lateral side (internal mold); IGUT. no. 14557: Fig. 11. x 1.0, gregarious occurrence specimens; IGUT. no. 14559.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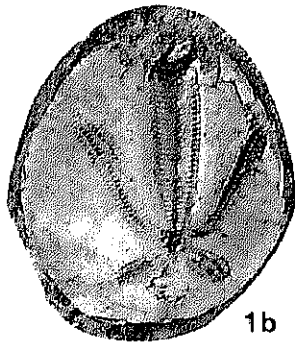
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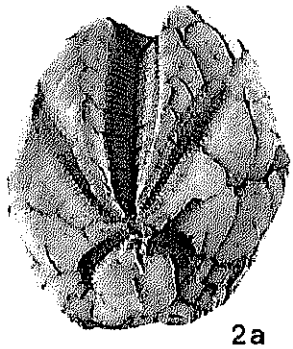
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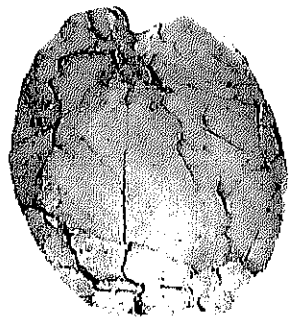
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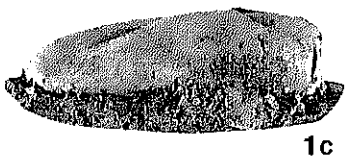
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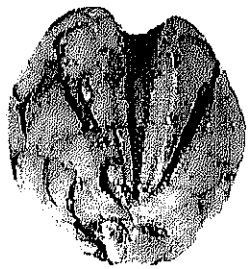
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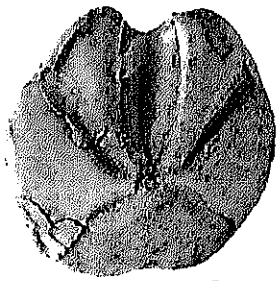
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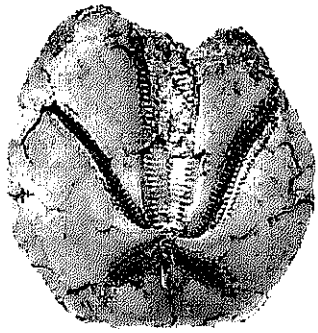
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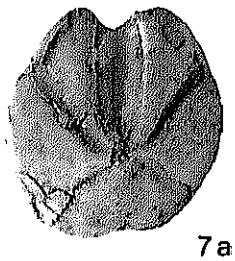
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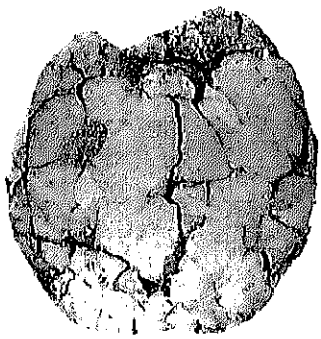
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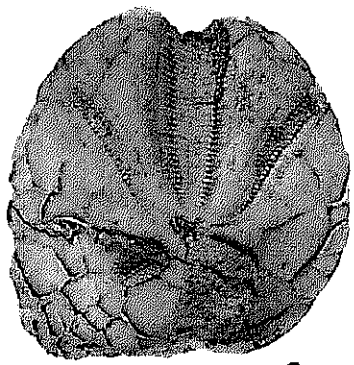
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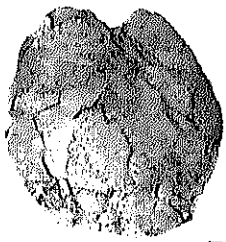
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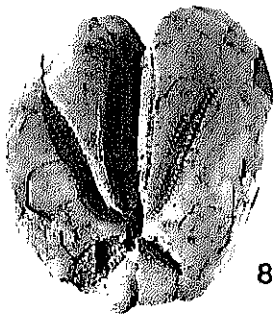
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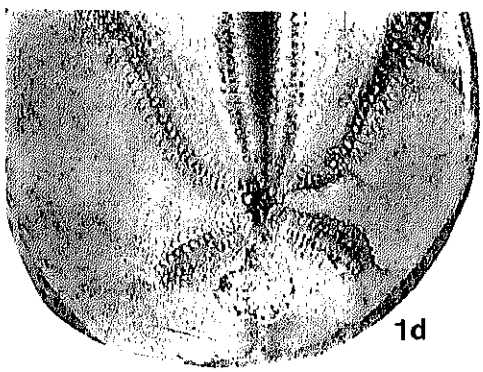
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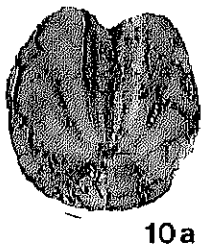
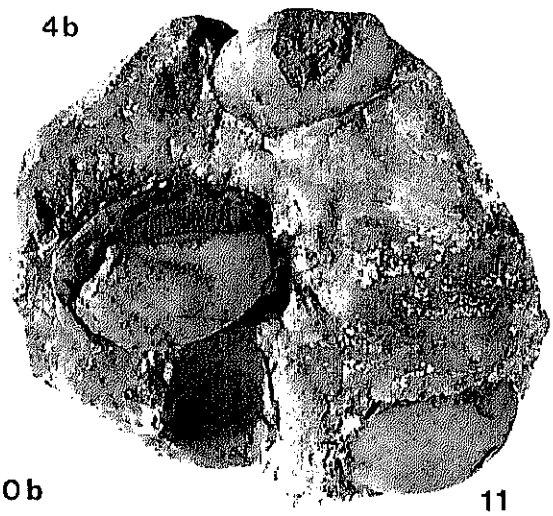

10a


10b


11

Explanation of plate 12

Figs. 1a-b, 6, 8. *Brissopsis kajiwarai* n. sp. ・・・ p. 210

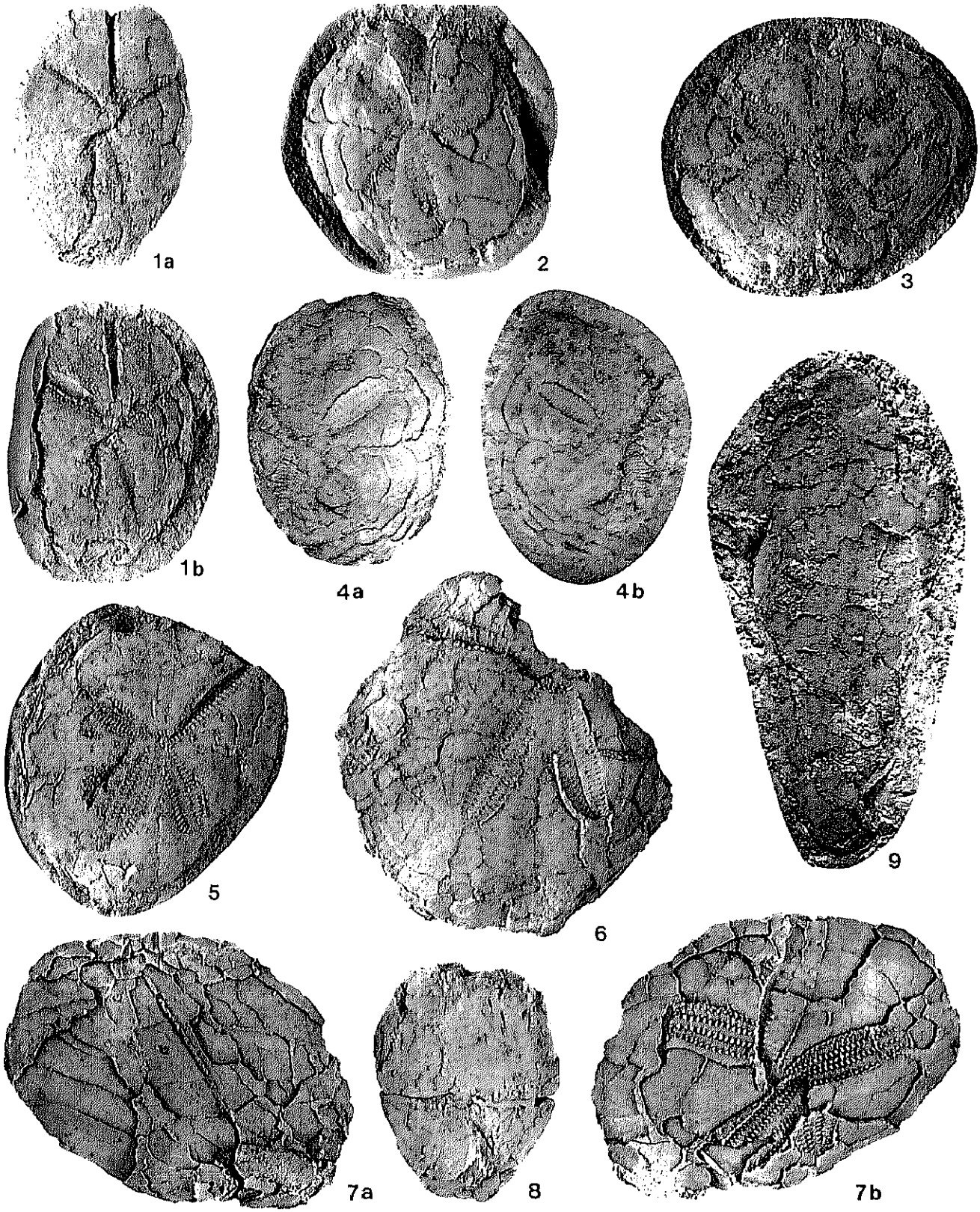
Figs. 1a-b. x 1.0; 1a. aboral side (internal mold); 1b. aboral side (external mold by rubber); Holotype, IGUT. no. 14575: Fig. 6. x 1.0, aboral side (internal mold); IGUT. no. 14574: Fig. 8. x 2.0, oral side (internal mold); IGUT. no. 14578.

Figs. 2-5, 7a-b. *Brissopsis daigoensis* n. sp. ・・・ p. 200

Fig. 2. x 1.0, aboral side (external mold by rubber); IGUT. no.14569: Fig. 3. x 1.2, aboral side; Holotype, IGUT. no. 14567 : Figs. 4a-b. x 1.2 ; 4a. aboral side; 4b. x 1.2, aboral side (external mold by rubber); IGUT. no. 14570: Fig. 5. x 1.2, aboral side (internal mold by rubber); Paratype, IGUT. no. 14568: Figs. 7a-b. x 1.0; 7a. oral side (internal mold); 7b. aboral side (internal mold); IGUT. no. 14571.

Fig. 9. *Pourtalesia kusachii* n. sp., x 3.0, left lateral side (internal mold); IGUT. no. 14529. ・・・・・・ p. 149

Kikuchi, Y. Neogene echinoid fossils from the northern part of Ibaraki Plate 12



Explanation of plate 13

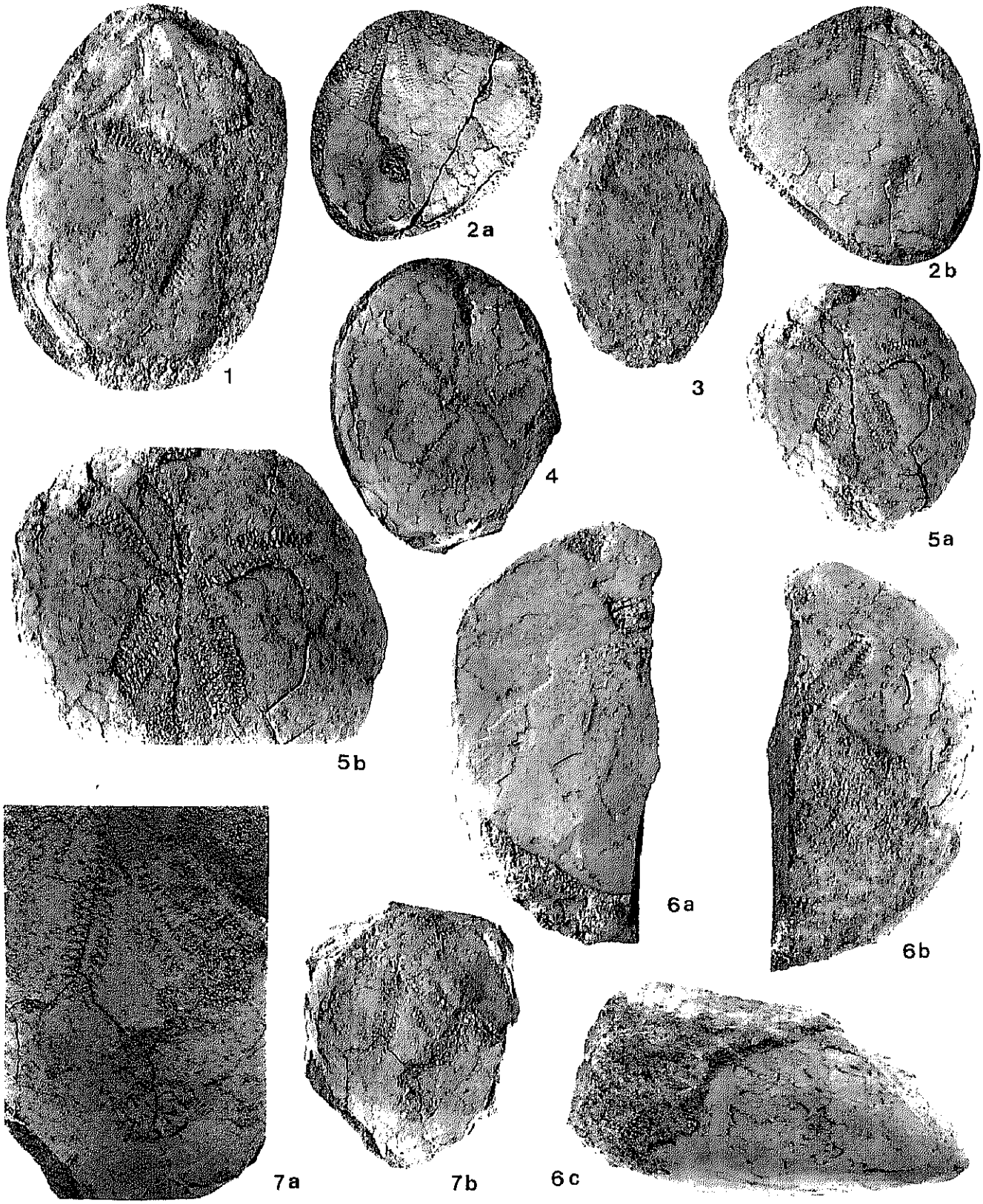
Figs. 1,6a-c. *Brissopsis daigoensis* n. sp. ····· p. 200

Figs. 1.x 1.0, aboral side (internal mold); IGUTU. no. 14572: Figs. 6a-c. x 1.0; 6a. oral side (internal mold); 6b. aboral side (internal mold); 6c. right lateral side (internal mold); IGUT. no. 14573.

Figs. 2a-5b, 7a-b. *Brissopsis kajiwarai* n. sp. ····· p. 210

Figs. 2a-2b. x 1.0; 2a. posterior side (internal cast); 2b. posterior side (internal mold); IGUT. no. 14579: Fig. 3. x 1.0, aboral side (internal mold); IGUT. no. 14580: Fig. 4. x 1.0, aboral side; IGUT. no. 14581: Fig. 5a. x 1.0, 5a. aboral side (internal mold); 5b. x 2.0, close up view of aboral side; IGUT. no. 14582: Fig. 7a. x 2.0, close up view of posterior part;7b. aboral side; IGUT. no.14583.

Kikuchi, Y. Neogene echinoid fossils from the northern part of Ibaraki Plate 13



Explanation of plate 14

Figs. 1a-b, 5. *Brissopsis* sp. ..... p. 216

Fig. 1a. x 1.5, close up view of oral side (internal cast); 1b. x 1.0, oral side (internal mold by rubber); IGUT. no. 14584:

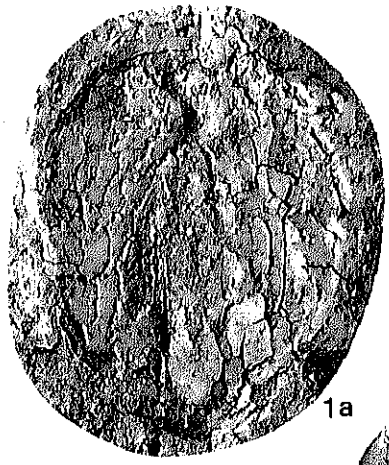
Fig. 5. x 1.5, oral side (internal mold); IGUT. no. 14585.

Figs. 2a-b, 4. *Brissopsis kajiwarai* n. sp. ..... p. 210

Figs. 2a-b. x 1.0; 2a. aboral side (internal mold); Paratype, IGUT. no. 14576: Fig. 4. x 1.0, aboral side (internal mold); IGUT. no. 14577.

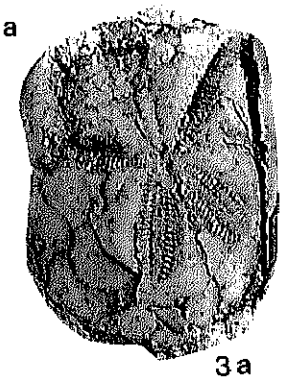
Figs. 6a-b. Schizasteridae gen. et sp. indet., x 1.5; IGUT. no. 14587 ..... p. 191

Kikuchi, Y. Neogene echinoid fossils from the northern part of Ibaraki Plate 14


1a

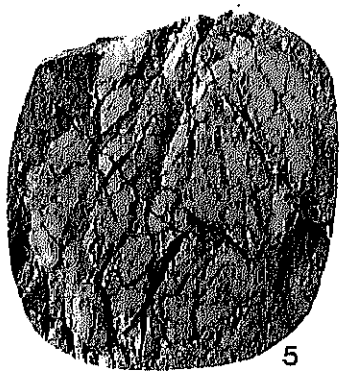

1b


2a


3a


2b


4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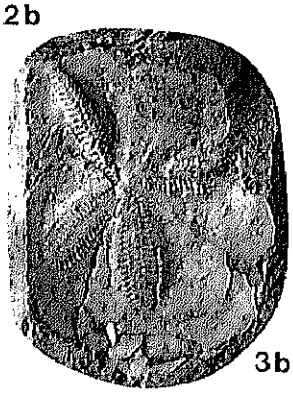
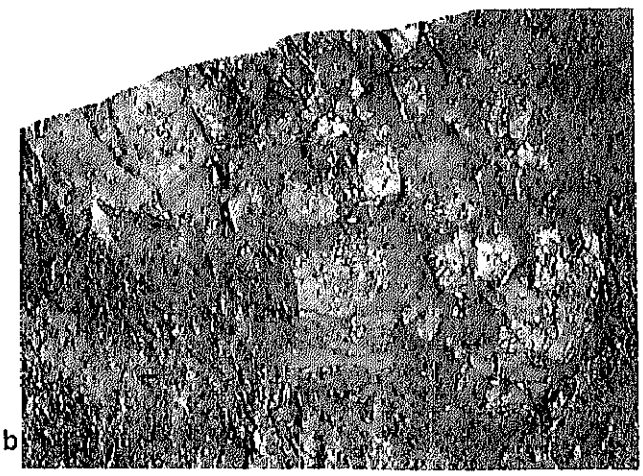

3b


6a


6b

Explanation of plate 15

Figs. 1, 2a-b. *Aceste* sp. ·····p. 158

Fig. 1. x 6.0, aboral side (internal mold); IGUT. no. 14536: Figs. 2a-b. x 8.0, 2a. aboral side (internal mold); 2b. left lateral side (internal mold); IGUT. no. 14537.

Figs. 3a-4. *Pourtalesia kusachii* n. sp. ····· p. 149

Fig. 3a. x 3.0, lateral side (external mold by rubber); 3b. x 8.0, close up view of posterior part; IGUT. no. 14530: Fig. 4. x 3.0, aboral side (external mold by rubber); IGUT. no. 14531.

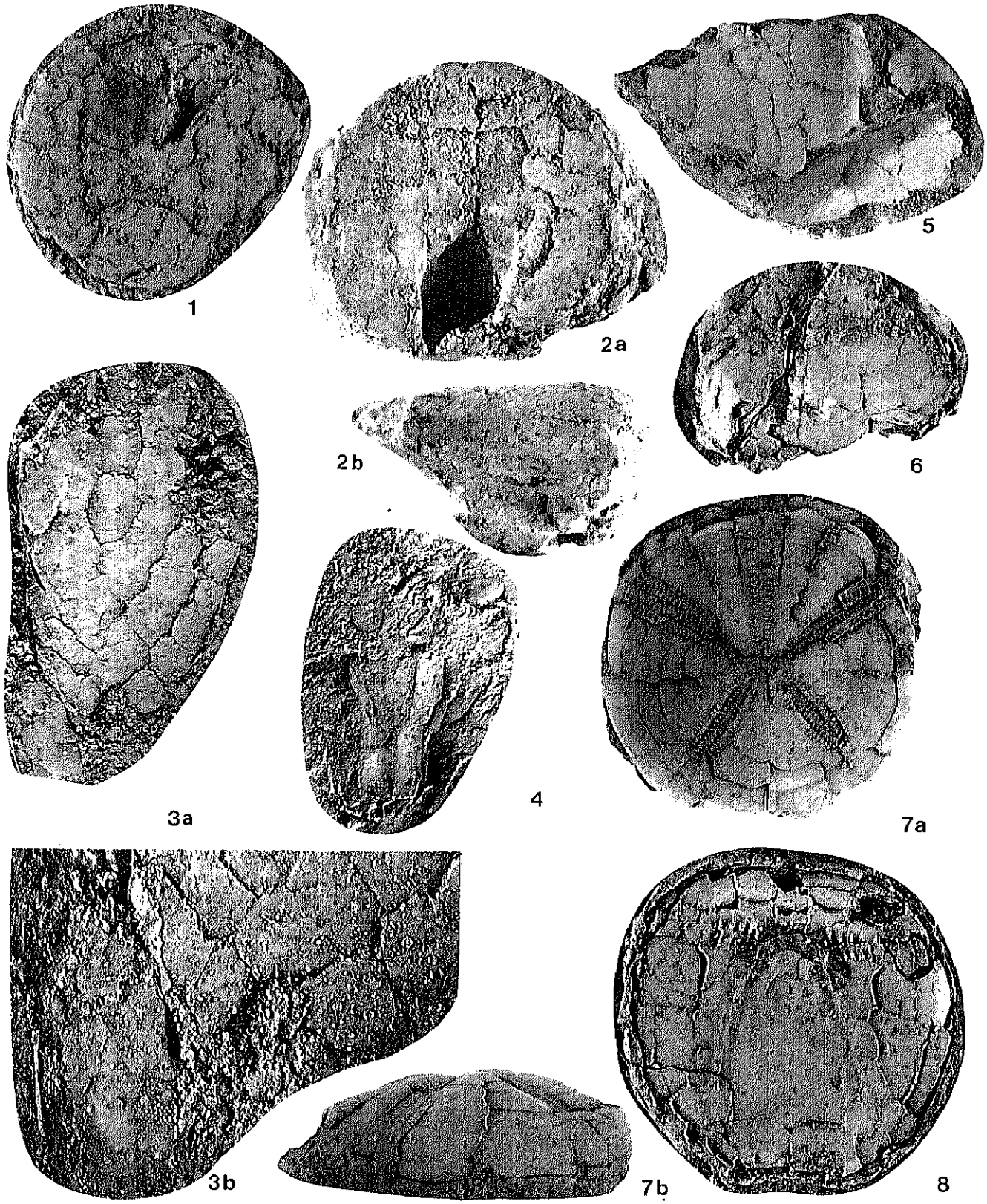
Figs. 5-6. *Linthia* sp., x 1.0. ····· p. 171

Fig. 5. oral side (internal cast); IGUT. no. 14544: Fig. 6. aboral side (internal mold); IGUT. no. 14545.

Figs. 7a-b, 8. *Linthia tokunagai* Lambert, x 1.0. ··· p. 167

Fig. 7a. aboral side (internal mold); 7b. left lateral side (internal mold); IGUT. no. 11025-5: Fig. 8. oral side (internal mold); IGUT. no. 11024-12.

Kikuchi, Y. Neogene echinoid fossils from the northern part of Ibaraki Plate 15

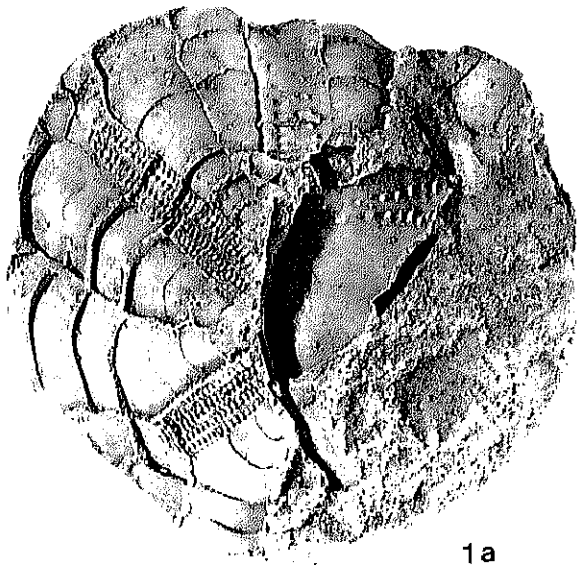


Explanation of plate 16

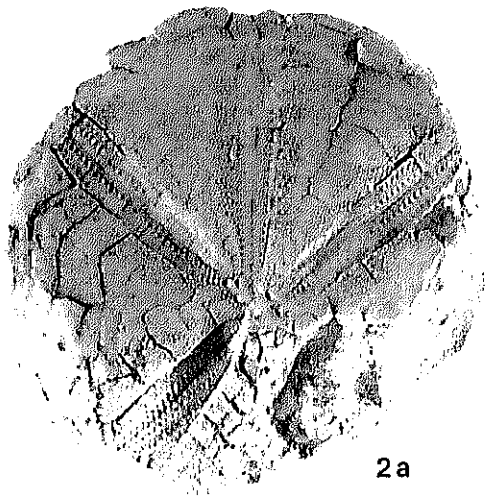
Figs. 1a-3. *Linthia nipponica* Yoshiwara, x 1.0. · · · p. 162

Fig. 1a. aboral side (internal mold); 1b. aboral side (external mold by rubber); 1c. oral side (internal mold); IGUT. no. 14539:

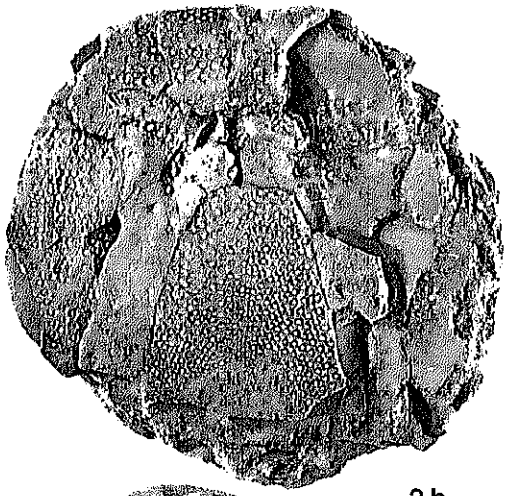
Fig. 2a. aboral side; 2b. oral side; IGUT. no. 14538: Fig. 3. lateral side (external mold by rubber); IGUT. no. 14540.



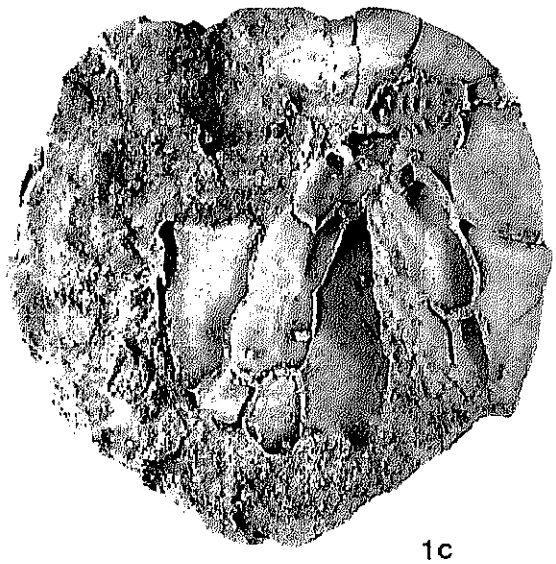
1a



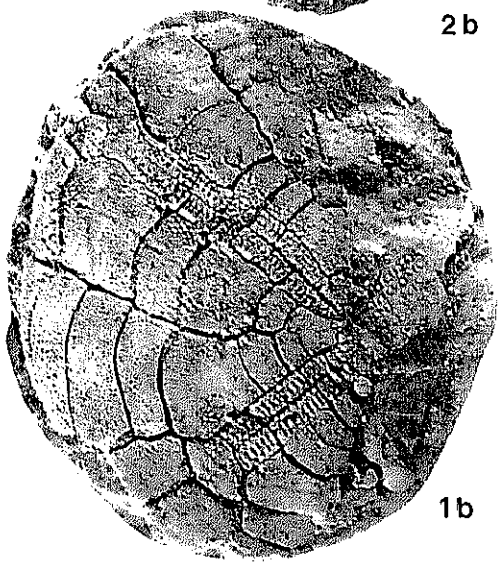
2a



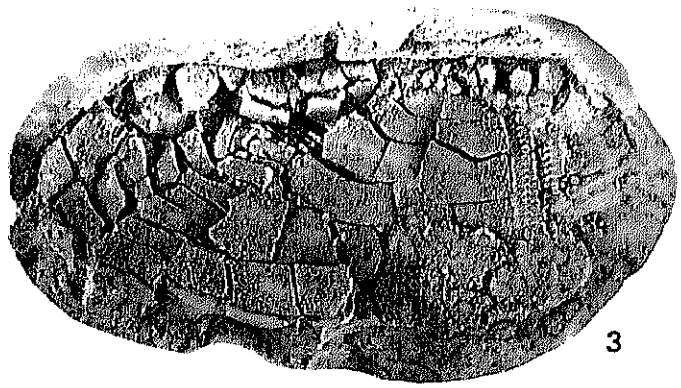
2b



1c



1b



3

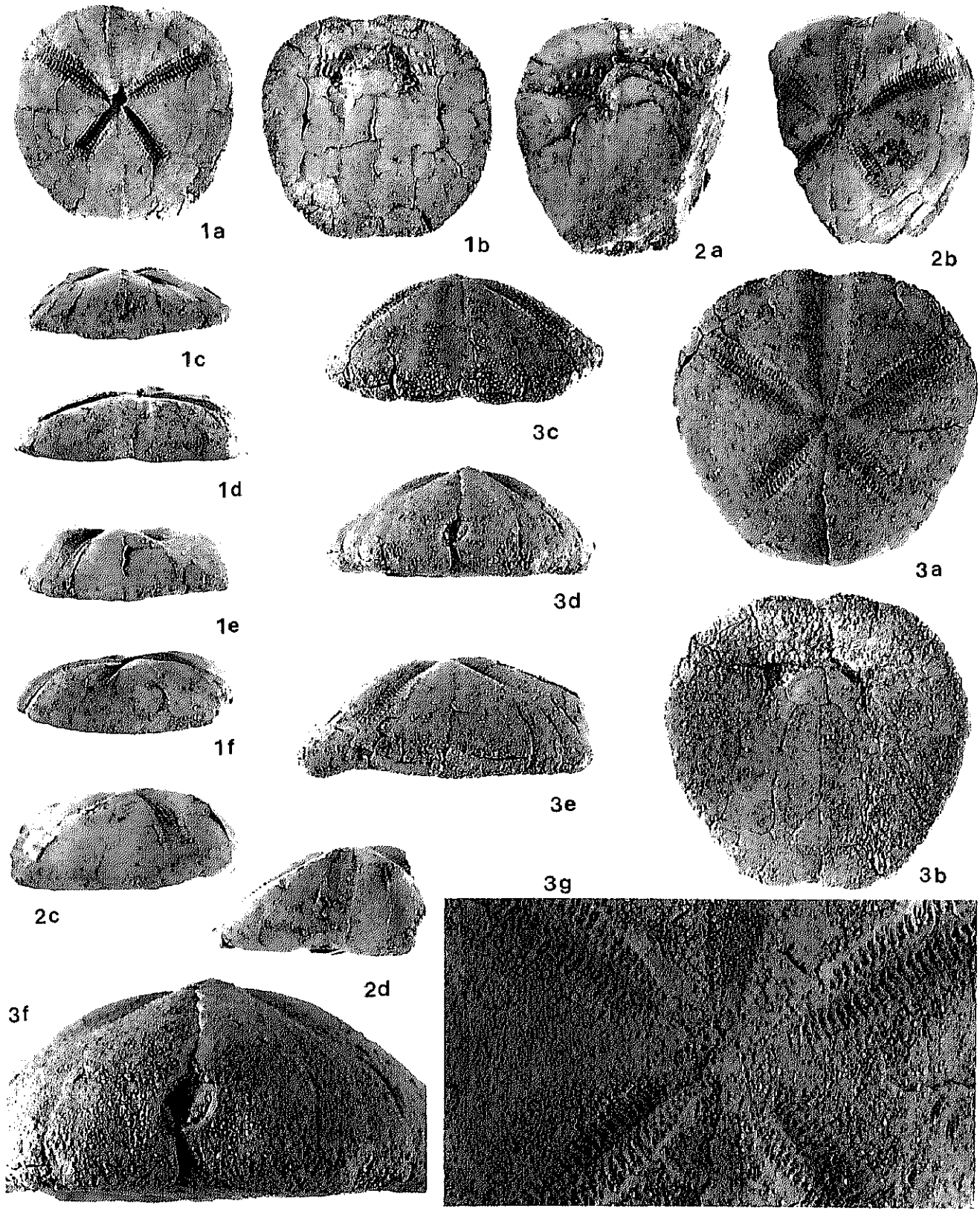
Explanation of plate 17

Figs. 1a-f. *Lutetiaster ogasawarai* n. sp., x 1.2. ・・・ p. 172

Fig. 1a. aboral side (internal mold); 1b. oral side (internal mold); 1c. posterior side (internal mold); 1d. anterior side (internal mold); 1e. right lateral side (internal mold); 1f. left lateral side (internal mold); IGUT. no. 14548-2.

Figs. 2a-3g. *Nodaster watanabei* n. gen. et n. sp. ・・・ p. 193

Figs. 2a-d. x 1.0; 2a. oral side (internal mold); 2b. aboral side (internal mold); 2c. right lateral side (internal mold); 2d. anterior side (internal mold); IGUT. no. 14565: Figs. 3a-e. x 1.0; 3a. aboral side; 3b. oral side; 3c. anterior side; 3d. posterior side; 3e. left lateral side; 3f. x 3.0, close up view of posterior side; 3g. x 3.0, close up view of apical part; Holotype, IGUT. no. 14563.


1a
1b
2a
2b
1c
3c
3a
1d
3d
1e
1f
3e
3b
2c
3g
2d
3f

Explanation of plate 18

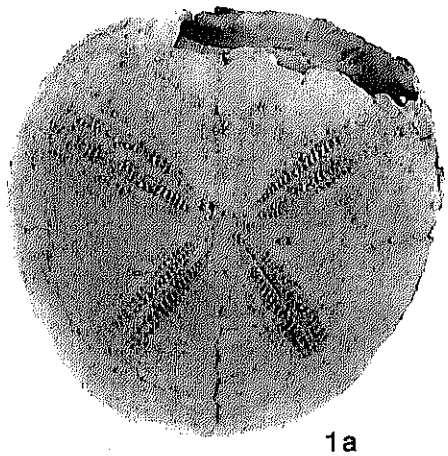
Figs. 1a-d, 4. *Nodaster watanabei* n. gen. et n. sp., x 1.0. ··· p. 192

Fig. 1a. aboral side; 1b. oral side; 1c. left lateral side; 1d. posterior side; Paratype, IGUT. no. 14564: Fig. 4. aboral side; IGUT. no. 14566.

Figs. 2a-3c. *Linthia tokunagai* Lambert, x 1.0. ··· p. 167

Fig. 2a. aboral side; 2b. right lateral side; 2c. anterior side; IGUT. no. 14541: Fig. 3a. aboral side; 3b. right lateral side; 3c. anterior side; IGUT. no. 14542.

Fig. 5. *Linthia nipponica* Yoshiwara, x 1.0, aboral side, IGUT. no. 11024-6. ····· p. 162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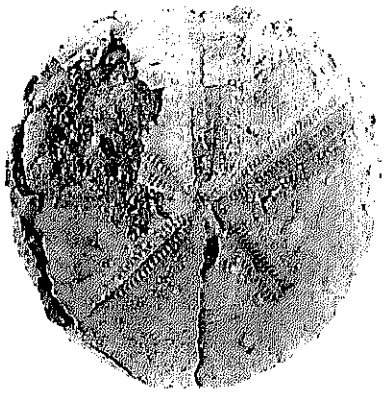
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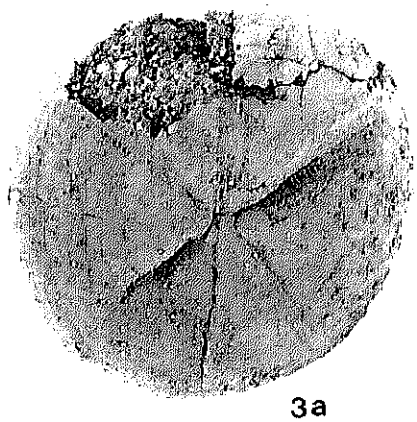
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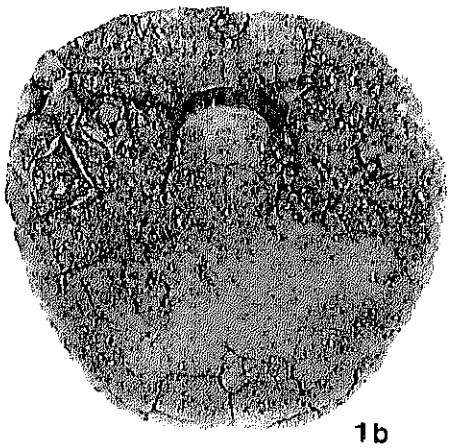
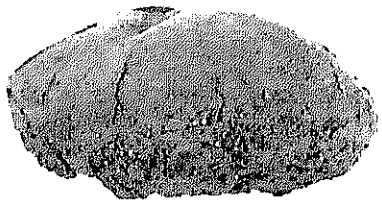
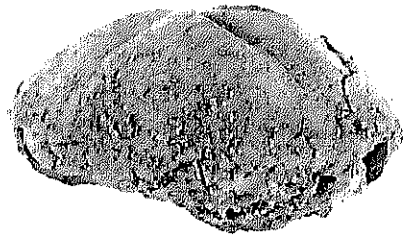

1b


2b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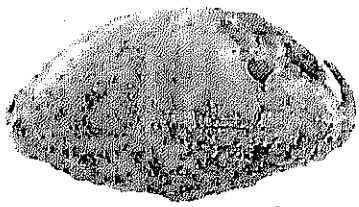
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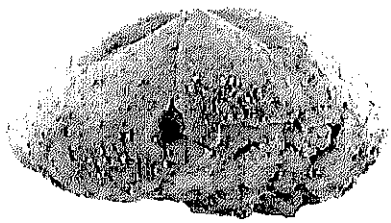
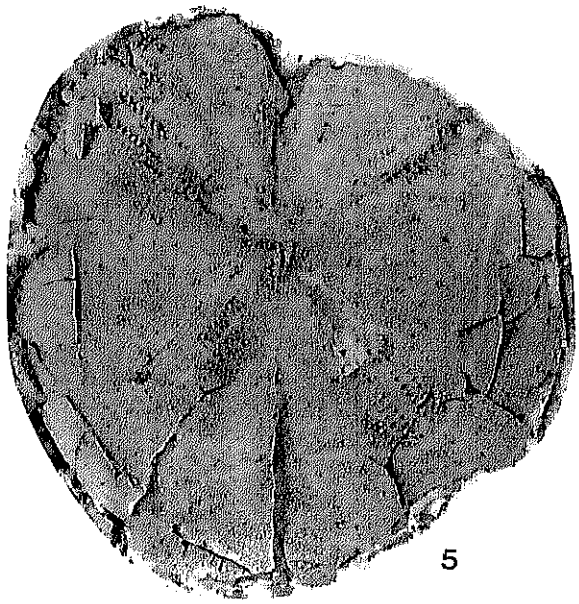

3c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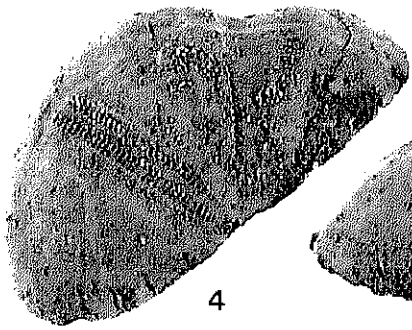
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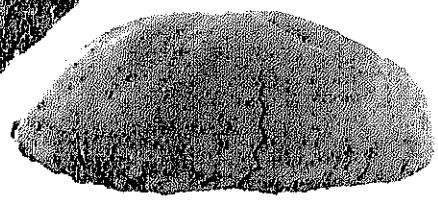
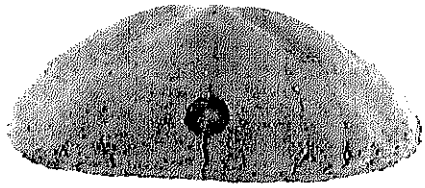
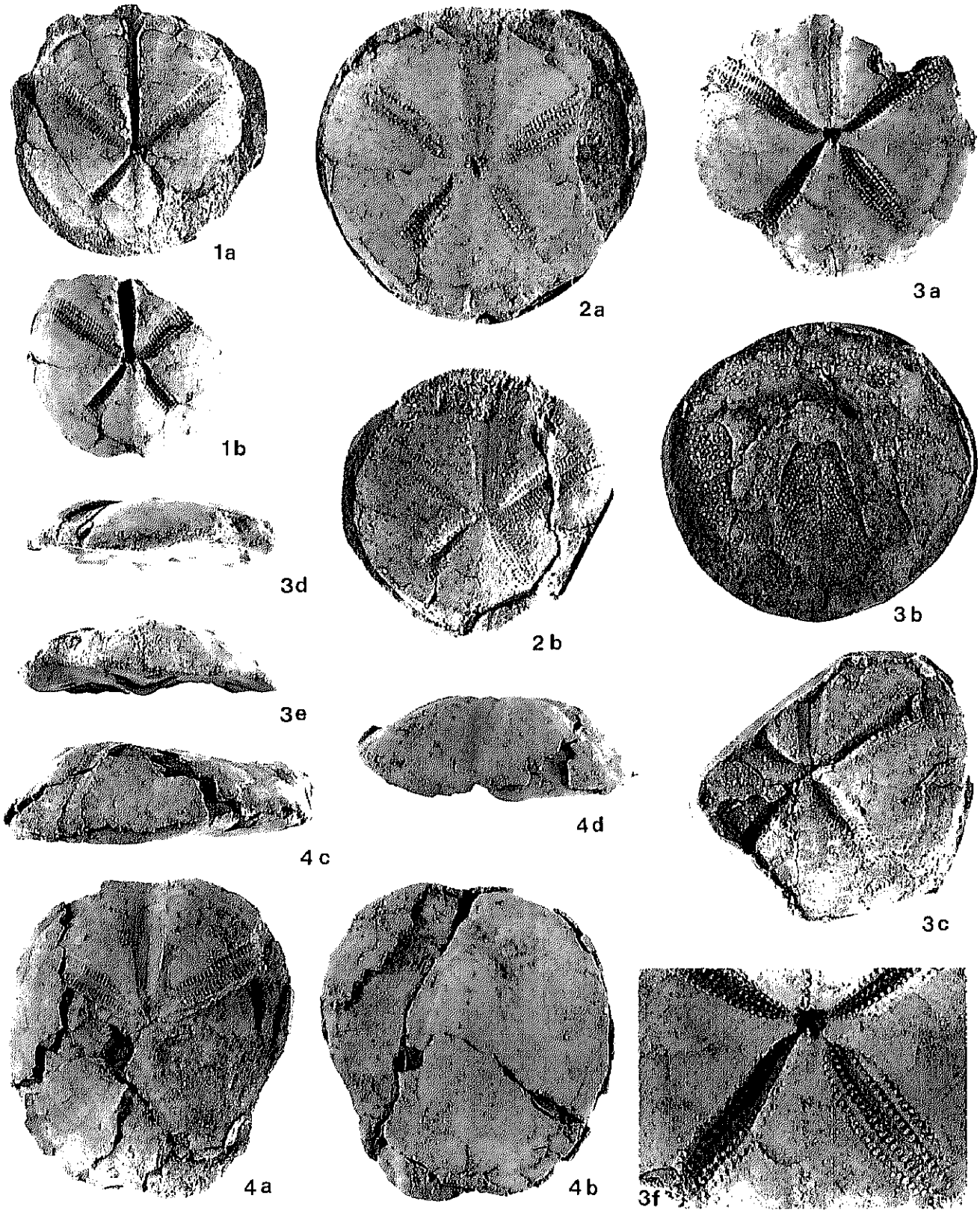

1c


1d

Explanation of plate 19

Figs. 1a-4d. *Lutetiaster ogasawarai* n. sp., x 1.0; 2b. x 1.5; 3f. x3.0. · · · · p.172

Fig. 1a. aboral side (external mold by rubber); 1b. aboral side (internal mold); IGUT. no. 14548-5: Fig. 2a. aboral side (internal mold); 2b. aboral side (external mold by rubber); IGUT. no. 14548-1: 3a. aboral side (internal mold); 3b. oral side (external mold by rubber); 3c. aboral side (external mold by rubber); 3d. left lateral side (internal mold); 3e. posterior side (internal mold); 3f. close up view of apical part (internal mold); IGUT. no. 14548-6: Fig. 4a. aboral side; 4b. oral side; IGUT. no. 14548-3.

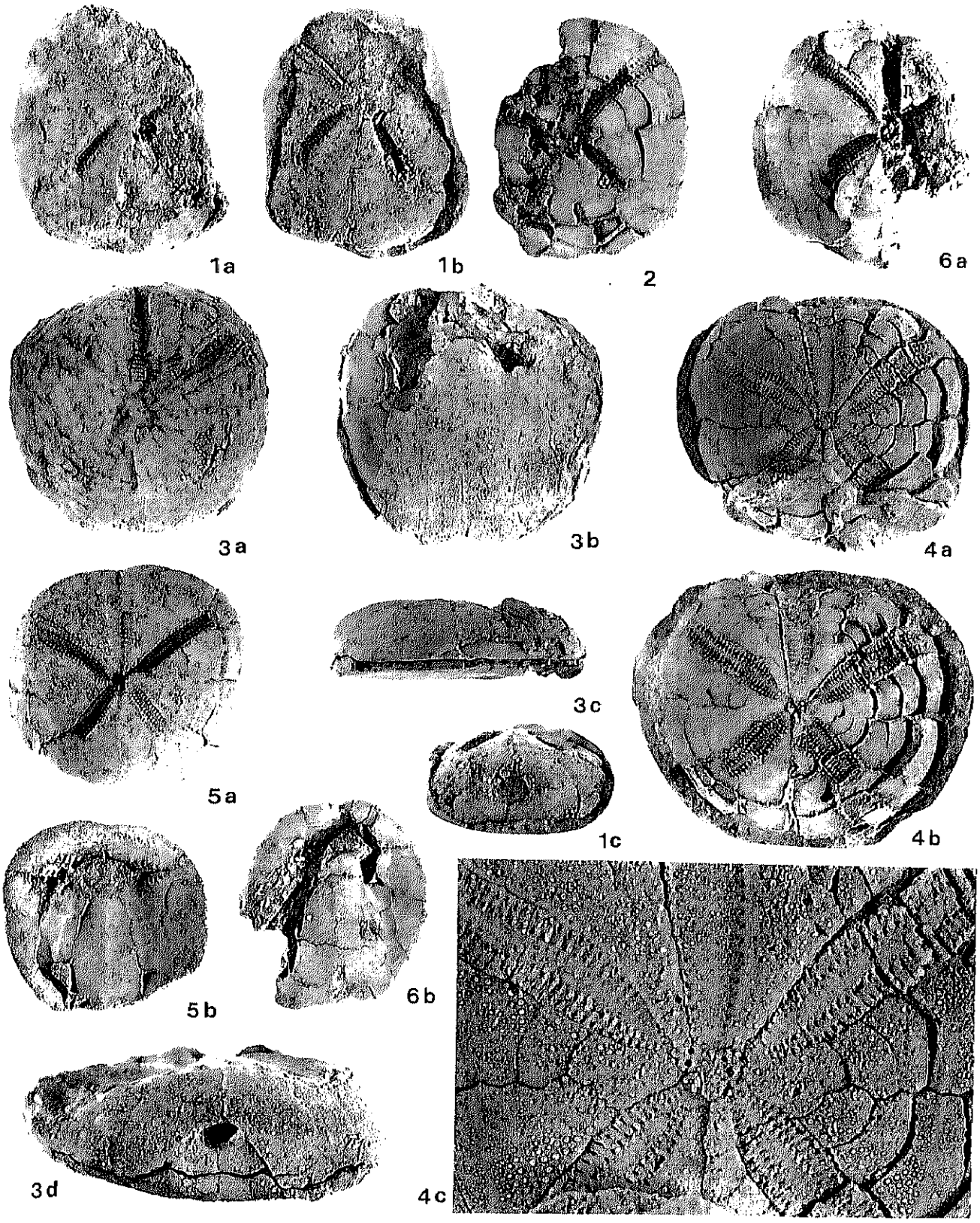

1a
2a
3a
1b
2b
3b
3d
3e
4d
4c
3c
4a
4b
3f

Explanation of plate 20

Figs. 1a-6b. *Lutetiaster ogasawarai* n. sp., x 1.0; 3d. x 1.5; 4c. x3.0. · · · · p. 172

Fig. 1a. aboral side; 1b. aboral side (external mold by rubber); 1c. posterior side (external mold by rubber); IGUT. no. 14548-7:

Fig. 2. aboral side (internal mold); IGUT. no. 14548-8: Fig. 3a. aboral side; 3b. oral side; 3c. right lateral side; 3d. posterior side; Paratype, IGUT. no. 14546: 4a. aboral side (external mold by rubber); 4b. aboral side (internal mold); 4c. close up view of apical part; IGUT. no. 14547: 5a. aboral side (internal mold); 5b. oral side (internal mold); IGUT. no. 14548-4: Fig. 6a. aboral side (internal mold); 6b. oral side (internal mold); IGUT. no. 14548-9.


1a
1b
2
6a
3a
3b
4a
3c
5a
4b
1c
5b
6b
3d
4c

Explanation of plate 21

Figs. 1a-3d. *Nikaidoster tokaiensis* n. gen. et n. sp., x 1.5; · · · · p. 180

Fig. 1a. aboral side (internal mold); 1b. oral side (external mold by rubber); 1c. oral side (internal mold); 1d. left lateral side (external mold by rubber); 1e. posterior side (internal mold); 1f. anterior side (internal mold); 1g. left lateral side (internal mold); Holotype, IGUT. no. 14560: Fig. 2a. aboral side (internal mold); 2b. right lateral side (internal mold); Paratype, IGUT. no. 14561: Fig. 3a. aboral side (internal mold); 3b. oral side (internal mold); 3c. posterior side (internal mold); 3d. left lateral side (internal mold); IGUT. no. 14562.

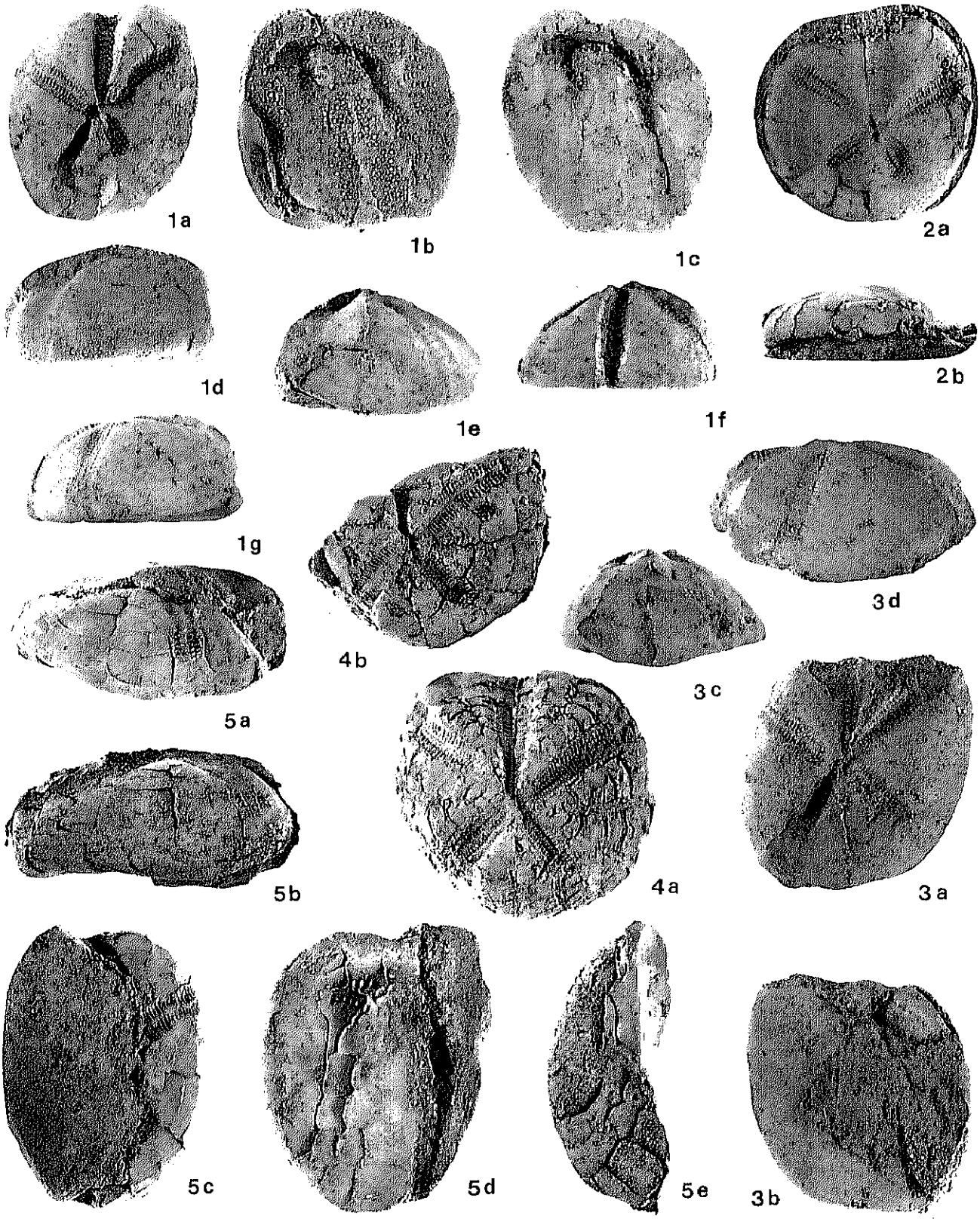
Figs. 4a-b. *Linthia tokunagai* Lambert, x 1.0. · · · · · · p. 167

Fig. 4a. aboral side; 4b. aboral side (external mold by rubber); IGUT. no. 14543.

Figs. 5a-e. *Anametalia* sp., x 1.0. · · · · · · p. 218

5a. right lateral side (internal mold); 5b. right lateral side (external mold by rubber); 5c. aboral side (internal mold); 5d. oral side (internal mold); 5d. oral side (external mold by rubber), IGUT. no. 14588.

Kikuchi, Y. Neogene echinoid fossils from the northern part of Ibaraki Plate 21

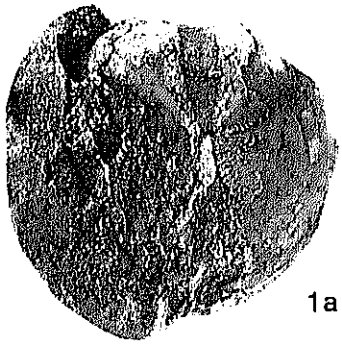


Explanation of plate 22

Figs. 1a-2c. *Brissopatagus* sp., x 1.5; 1e. x 4.0. ・・・ p. 216

Fig. 1a. aboral side; 1b. oral side; 1c. right lateral side; 1d. anterior side; IGUT. no. 14586: Fig. 2a. aboral side (internal mold); 2b. oral side (internal mold); 2c. anterior side (internal mold); IGUT. no. 14587.

Fig. 3. Gregarious specimens of *Lutetiaster ogasawarai* n. sp., x 1.5; IGUT. no. 14548-10. ・・・・・・・・ p. 172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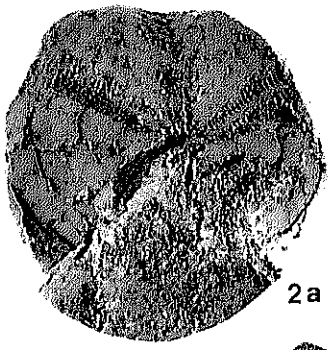
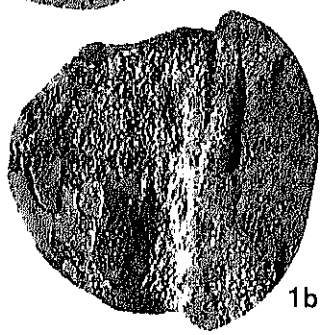

2a


2b


1e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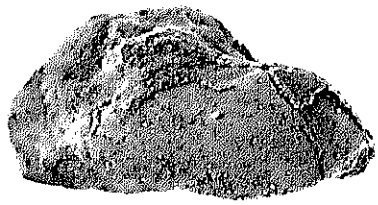
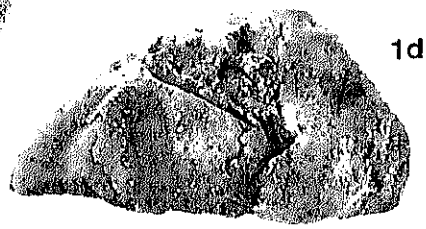
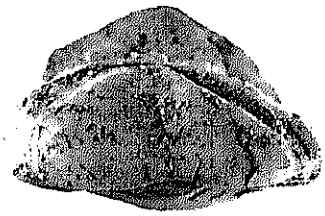

1c


1d


2c


3