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BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

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The Mindyallan Fauna of North-Western Queensland

BY

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Volume 2: APPENDIXES, PLATES and INDEX

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APPENDIX 1—CHECK LIST OF TRILOBITES

AGNOSTIDS

<i>Agnostardis amplinatis</i>			W1, W15, W20, W258, W259, G12, G48, G50, D29, B525, B537.
<i>Agnostardis</i> cf. <i>amplinatis</i> ....	....	....	D29.
<i>Agnostascus</i> aff. <i>gravis</i> ....	....	....	G8, G119, G150, G417.
<i>Agnostascus gravis</i> ....	....	....	G8, G119, G124, G127, G150, G417, G429.
<i>Agnostoglossa bassa</i> ....	....	....	G8, G9, G114, G119, G124, G127, G150, McCabe Knob, G429.
<i>Agnostogonus incognitus</i> ....	....	....	D6, D29.
<i>Agnostus</i> aff. <i>pisiformis</i> ....	....	....	G417.
<i>Agnostus</i> aff. <i>pisiformis subsulcatus</i> ....	....	....	G119.
<i>Agnostus artilimbatus</i> ....	....	....	G8, G9, G119, G417.
<i>Ammagnostus euryaxis</i> ....	....	....	D29.
<i>Ammagnostus integriceps</i> ....	....	....	D29, McCabe Knob.
<i>Ammagnostus mitis</i> ....	....	....	G10.
<i>Ammagnostus psammius</i> ....	....	....	D6, D29.
<i>Aspidagnostus</i> aff. <i>stictus</i> ?	....	....	G153.
<i>Aspidagnostus inquilinus</i> ....	....	....	W1, W15, W20, G48, G50, D6, D29, B525, B537.
<i>Aspidagnostus stictus</i> ....	....	....	B259, D126.
<i>Clavagnostus bisectus</i> ....	....	....	W1, G119, G114, G417, G429, D29.
<i>Connagnostus venerabilis</i> ....	....	....	W1, W20, D29.
<i>Connagnostus</i> ? <i>zonatus</i> ....	....	....	G137, McCabe Knob.
<i>Cyclagnostus</i> aff. <i>quasivespa</i> ....	....	....	G9.
<i>Cyclagnostus quasivespa</i> ....	....	....	G6, G10, G124, G130, G131, G137, (?), G147.
<i>Cyclagnostus</i> ? sp.indet. ....	....	....	G8, G119, G417, G429.
<i>Diplagnostus</i> cf. <i>planicaude</i> ....	....	....	G102.
<i>Diplagnostus crassus</i> ....	....	....	W36.
<i>Discagnostus spectator</i> ....	....	....	D29.
<i>Dolichoagnostus</i> (?) indet. ....	....	....	D95.
<i>Glyptagnostus lenis</i> ....	....	....	W1, W15.
<i>Glyptagnostus reticulatus</i> ....	....	....	B259, B322, D120a, D126, W5, W6, W40.
<i>Glyptagnostus stolidotus</i> ....	....	....	B525, B537, D6, D28, D29, D133, G49, G50, W1, W258.
<i>Grandagnostus evexus</i> ....	....	....	G8, G119, G144, G145, G150, G417.
<i>Hadragnostus las</i> ....	....	....	G7, G8, G114, G119, G124, G150, G417, G429, McCabe Knob.
<i>Hypagnostus correctus</i> ....	....	....	G9, G103, G131, G427(d).
<i>Hypagnostus durus</i> ....	....	....	G8, G119, G150, G417, G429.
<i>Hypagnostus hippalus</i> ....	....	....	G107.
<i>Idolagnostus agrestis</i> ....	....	....	D29, W20.
<i>Idolagnostus dryas</i> ....	....	....	D29, G8, G10, G114, G119, G124, G127, G417, G429, McCabe Knob.
<i>Innitagnostus inexpectans</i> ....	....	....	B322, D126, W39.
<i>Innitagnostus</i> aff. <i>innitens</i> ....	....	....	W20.
<i>Innitagnostus innitens</i> ....	....	....	B525, B537, D29.
<i>Innitagnostus innitens</i> ?	....	....	G8, G119, G417.
<i>Leiopyge cos</i> ....	....	....	G131, G150, G417.
<i>Leiopyge laevigata</i> ....	....	....	G102, G103, G104, G106, G107.
<i>Leiopyge laevigata armata</i> ....	....	....	G103.
<i>Linguagnostus</i> aff. <i>kjerulfi</i> ....	....	....	D95.
<i>Oedorhachis tridens</i> ....	....	....	G10, G153.
<i>Oidalgagnostus personatus</i> ....	....	....	W36.
<i>Oidalgagnostus trispinifer</i> ....	....	....	G121, G131, G133.
<i>Oxyagnostus apicula</i> ....	....	....	B525, B537, D29.
<i>Peratagnostus nobilis</i> ....	....	....	D120b, W10.
<i>Peronopsis</i> aff. <i>fallax</i> ....	....	....	D95.
<i>Plurinodus discretus</i> ....	....	....	D6, D29.
<i>Plurinodus discretus</i> ?	....	....	D29.
<i>Pseudagnostina</i> ? aff. <i>vicaria</i> ....	....	....	D29.
<i>Pseudagnostina vicaria</i> ....	....	....	D29.
<i>Pseudagnostus ampullatus</i> ....	....	....	B525, B537, D29.
<i>Pseudagnostus bulgosus</i> ....	....	....	D28, D29, G417, W1.
<i>Pseudagnostus</i> cf. <i>idalis</i> ....	....	....	D132.
<i>Pseudagnostus idalis</i> ....	....	....	D132, W39.
<i>Pseudagnostus mestus</i> ....	....	....	D29, G49.
<i>Pseudagnostus sericatus</i> ....	....	....	W15, W20.

<i>Ptychagnostus fumicola</i> ....	....	G9, G103, G104, G121.
<i>Ptychagnostus nodibundus</i> ....	....	G8, G417.
<i>Ptychagnostus</i> sp.nov.aff. <i>fumicola</i>	....	D15.
<i>Ptychagnostus</i> ? <i>serus</i> ....	....	D29, G417, W20.
<i>Ptychagnostus</i> (<i>Goniagnostus</i>) <i>spiniger</i> ....	....	G106.
<i>Triadaspis bigeneris</i> ....	....	G103, G119, G153, G417.
<i>Xestagnostus</i> cf. <i>rasilis</i> ....	....	G10.
<i>Xestagnostus rasilis</i> ....	....	G10, G113 (indet.), G147 (indet.).
<i>Xestagnostus</i> aff. <i>legirupa</i> ....	....	G50.
<i>Xestagnostus legirupa</i> ....	....	D29, G48, G50, W1, W15, W18, W20, W301.

POLYMERIDS

<i>Acrodirotes fastosa</i> ....	....	G50, W20.
<i>Adelogonus solus</i> ....	....	D29.
<i>Agelagma laticeps</i> ....	....	G119, G145.
<i>Agelagma quadratum</i> ....	....	G114, G417.
<i>Aedotes declivis</i> ....	....	G8, G119, G127, G151, G417.
<i>Aedotes instans</i> ....	....	G8, G119, G417, G427.
<i>Aedotes mutans</i> ....	....	G8, G119, G149, G417.
<i>Alomataspis enodis</i> ....	....	G103.
<i>Anopocodia globiceps</i> ....	....	D29.
<i>Ascionepea</i> aff. <i>anitys</i> ....	....	G114, G119, G150.
<i>Ascionepea anitys</i> ....	....	G8, G9, G114, G119, G417, G429.
<i>Ascionepea janitrix</i> ....	....	G103.
<i>Aulacodigma illimbatum</i> ....	....	B525, B537.
<i>Aulacodigma quasispinale</i> ....	....	D6, D28, D29, G49, G51, W15, W17, W20, W66.
<i>Auritama aurita</i> ....	....	G12, W17, W18, W259.
<i>Auritama expansa</i> ....	....	G48.
<i>Auritama trilunata</i> ....	....	D6, D28; D29, G48, G49, G50, G51, W1, W15, W20, W21.
<i>Avonina</i> ? sp. ....	....	W20.
<i>Biaverta biaverta</i> ....	....	D6, D29, W17, W21, McCabe Knob.
<i>Biaverta reineri</i> ....	....	G8, G12, G114, G117, G119, G417.
<i>Blackwelderia gibberina</i> ....	....	G48, G49, W15, W17, W20, W21, W66.
<i>Blackwelderia</i> n.sp.A ....	....	G125.
<i>Blackwelderia</i> ? sp.B ....	....	G127.
<i>Blackwelderia repanda</i> ....	....	D29, G12.
<i>Blackwelderia sabulosa</i> ....	....	G119, G124, G125, G126, G127, G130, G409(?).
<i>Blountia georginae</i> ....	....	W10.
<i>Brassicicephalus</i> sp.indet. ....	....	D29.
<i>Catillicephala</i> , indet. ....	....	D29.
<i>Catillicephalidae</i> gen.indet., sp.indet. ....	....	W15, W17.
<i>Cermataspis abundans</i> ....	....	G8, G119, G128, G130, G417, G429.
<i>Corynexochus plumula</i> ....	....	W10, W39, W40, W41, W57.
<i>Cyrtoprora intricata</i> ....	....	G48, G51, W15, W20.
<i>Damesella torosa</i> ....	....	G103, G115.
<i>Damesellidae</i> , gen. & sp.indet. ....	....	M65.
<i>Damesellidae</i> , gen.nov., sp.nov. ....	....	G103.
<i>Dipentaspis</i> aff. <i>dipentas</i> ....	....	D54.
<i>Dipentaspis dipentas</i> ....	....	D54, D95, D96, D101, G103- (cf).
<i>Dipentaspis ratis</i> ....	....	D95.
<i>Dipyrgotes</i> aff. <i>novella</i> ....	....	W21.
<i>Dipyrgotes novella</i> ....	....	D6, D29.
<i>Doremataspis ornata</i> ....	....	D6, D28, D29, W20.
<i>Erediaspis eretes</i> ....	....	G8, G119, G149, G151, G417, G429(b).
<i>Eugonocare</i> cf. <i>tesselatum</i> ....	....	D6, D126, B322, W10.
<i>Ferenepea hispida</i> ....	....	D6, D28, D29, G10, G119(cf), G127, G150(cf), W1, W301(cf).
<i>Ferenepea pilaris</i> ....	....	G8, G119, G417.
Free cheek No. 1 ....	....	D29.
Free cheek No. 2 ....	....	G124.
<i>Griphasaphus griphus</i> ....	....	G119?, G124, G125, G127, G145, G153.
<i>Henadoparia integra</i> ....	....	D6, D29, W1, W20.
<i>Histiomona oculosa</i> ....	....	W15.
<i>Idamea baccata</i> ....	....	D119, D120b, W8.
<i>Idamea extricans</i> ....	....	W45.
<i>Idamea venusta</i> ....	....	W16.
<i>Iniotoma iniotoma</i> ....	....	G8, G119, G150, G417, G429.
<i>Interalia serena</i> ....	....	G119, G417.

<i>Kootenia? cf. incerta</i> ....	....	D99.
<i>Lampropeltis nitens</i> ....	....	G103.
<i>Larva</i> gen.et sp. indet. ....	....	G48, G50.
<i>Leichneyella caseyi</i> ....	....	D6.
<i>Leichneyella</i> sp.nov. A ....	....	G127.
<i>Leichneyella</i> sp. B ....	....	D95.
<i>Liostracina nolens</i> ....	....	G50, W1, W20.
<i>Liostracina volens</i> ....	....	D29, W1.
<i>Liostracinoides? sp.indet.</i> ....	....	D6, D29.
<i>Lobocephalina pyriceps</i> ....	....	D6, D28, D29.
<i>Lonchocephalidae</i> , indet., cranid. ....	....	G119.
<i>Lonchocephalus? sp.</i> ....	....	G49.
<i>Lophoholcus asper</i> ....	....	D6, D28, D29.
<i>Lynaspis noakesi</i> ....	....	W1, W20.
<i>Mapaniidae</i> , gen.et sp.nov. ....	....	G103.
<i>Meringaspis meringaspis</i> ....	....	D28, D29.
<i>Meringaspis</i> sp.nov. A ....	....	G8, G119, G149, G150?, G417.
<i>Meringaspis</i> sp.nov. B ....	....	G10, G115, G124, G131.
<i>Meropalla auriculata</i> ....	....	G8, G119, G130, G417.
<i>Meropalla quadrans</i> ....	....	G8, G119, G127, G130, G149, G417.
<i>Meteoraspis aff. bidens</i> ....	....	D28, D29, G12.
<i>Meteoraspis bidens</i> ....	....	W17, W20, W66, W301, G12.
<i>Metopotropis travesi</i> ....	....	G48.
<i>Mindycrusta advena</i> ....	....	B259, D126.
<i>Mindycrusta compacta</i> ....	....	G48, G50, W1, W15.
<i>Mindycrusta mindycrusta</i> ....	....	G48, G49, G50, W1, W15, W20, W29, W301.
<i>Mindycrusta notostena</i> ....	....	B537.
<i>Modocia immodulata</i> ....	....	G107.
<i>Nilegna sigmata</i> ....	....	W20.
<i>Nomadinis pristinus</i> ....	....	D29, W1.
<i>Norwoodella dubitalis</i> ....	....	G429.
<i>Olenoides tranans</i> ....	....	G107, G115?, G417.
<i>Olenus? indet.</i> ....	....	B537.
<i>Onchonotellus offula</i> ....	....	G429.
<i>Palaeadotes aff. dissidens</i> ....	....	G10, G127, G128, G131, G153.
<i>Palaeadotes dissidens</i> ....	....	G48, G50, G51, W15, W17, W18, W21, W66, W259, McCabe Knob.
<i>Palaeadotes italops</i> ....	....	D6, D28, D29, G12, G127, W20.
<i>Paracoosia aspis</i> ....	....	D29.
<i>Peichiashania? lunatula</i> ....	....	D29.
<i>Peichiashania? pelta</i> ....	....	D29.
<i>Placosema adnatum</i> ....	....	G12, G51, G124.
<i>Placosema caelatum</i> ....	....	G8, G119, G124, G125, G126, G127, G130, G137, G417.
<i>Plectrifer mitis</i> ....	....	G8, G10, G19, G131, G136 (indet.), G147 (indet.), G417, G429.
<i>Plectrifer plectrifer</i> ....	....	G8, G10, G119, G114, G131, G149, G150, G417, G429, G443 (indet.), W1 (aff.).
<i>Polycyrtaspis flexuosa</i> ....	....	D6, D29, W20?
<i>Pygidium</i> No. 1 ....	....	G8, G119, G144.
<i>Pygidium</i> No. 2 ....	....	G8, G119, G429.
<i>Pygidium</i> No. 3 ....	....	G118.
<i>Pygidium</i> and <i>Thorax</i> No. 4 ....	....	D116.
<i>Pygidium</i> No. 5 ....	....	D29.
<i>Quitacetra arenata</i> ....	....	D54, D74, D95, D96, D114, G102, G104, G121.
<i>Quititalia</i> sp.nov.aff. <i>uncata</i> ....	....	D96.
<i>Quititalia uncata</i> ....	....	D59, D104.
<i>Rhodonaspis longula</i> ....	....	D6, D29, G10?, G48, W1, W15, W20, W205, ?W258, B525.
<i>Rhyssometopus neuter</i> ....	....	G119, G149, G150.
<i>R. (Rostrifinis) aff. rostrifinis</i> ....	....	G125, G131.
<i>R. (Rostrifinis) rostrifinis</i> ....	....	G8, G113, G117, G118, G119, G124, G130, G137, G145, G149, G150, G151, G417, G429, G443.
<i>R. (Rostrifinis) tiro</i> ....	....	D99.
<i>Rhyssometopus rhyssometopus</i> ....	....	G8, G124, G126, G127, G128, G132, G153, G417.
<i>Rhyssometopus rugiceps</i> ....	....	G10, G131.
<i>Rhyssometopus princeps</i> ....	....	D6, D29, G48, G49, G50, G51, McCabe Knob, W1, W15, W17, W20, W66, W258(?), W301.
<i>Saratogia? vetusta</i> ....	....	W20.
<i>Saukia? priscilla</i> ....	....	D6, D29, W1.
<i>Solenopleura? erista</i> ....	....	D29.

<i>Stephanocare richthofeni</i>	....	....	G153.
<i>Stephanocare</i> sp.nov.	....	....	G132.
<i>Talbotinella notulata</i>	....	....	G49, G50, W17.
<i>Teinistion? amydiun</i>	....	....	G50, W20.
<i>Tricrepicephalus?</i> indet.	....	....	G131.
Trilobite thorax	....	....	D116 (Bronzewing Creek, Duchess 4m. Sheet area).
<i>Townleyella townleyi</i>	....	....	D6, D29, W20.

APPENDIX 2: DESCRIPTION OF LOCALITIES

The data below are extracted from a register of localities (card catalogue) of north-western Queensland and Northern Territory that contains the observations made in the field, supplemented by entries of subsequent laboratory investigations. These localities are marked also on the 1 : 250,000 geological maps published by this Bureau. The same numbers are marked also on fossil collections and rock specimens. The number of cards already exceeds 1000, and is steadily increasing by new contributions. The card catalogue is an unofficial enterprise initiated by the present author, who takes here the opportunity to thank his colleagues for the most valuable collaboration and ample supply of information. The catalogue is located in the office of the Bureau in Canberra.

The term locality has several meanings. It may refer to a single point of observation, or a point of sampling, or fossil collecting, or a 'field station', or site, or section, that may be larger than a point; the meaning is apparent from the description.

The geographical co-ordinates are taken from the 1 : 250,000 geological sheets.

MUNGEREBAR-MINDYALLA AREA (MAP, TEXT-FIG. 3) LOCALITIES

D113. Lat. 22° 03' S., Long. 139° 03½' E. Basal Cambrian conglomerate rests on the basement; siliceous shale and chert above the conglomerate may belong to the *Redlichia* sequence.

D114. Lat. 22° 03' S., Long. 139° 02' E. Platy limestone topped by a 2-3 foot limestone breccia; on it rests a hard white calcareous sandstone with scattered ooids followed by a brown friable sandstone; In the sandstone: *Quitacetra arenata* and its associate fauna.

Dipentaspis dipentaspis
Quitacetra arenata
Olenoides cf. *tranans*.

G2. Lat. 22° 08' S., Long. 139° 23' E. Limestone. Indeterminable agnostids.
Plectrifer?, indet.

G4. Lat. 22° 08' S., Long. 139° 16' E. Limestone.
Ammagnostus, indet.
Rhyssometopus (*rugiceps*?)

G6. Lat. 22° 07' S., Long. 139° 13' E. 15 feet of limestone with chert biscuits.
Rhyssometopus, indet.
Cyclagnostus quasivespa

G7. Lat. 22° 08' S., Long. 139° 12' E. Dolomite (below) followed by calcareous shale and marly limestone (see Text-fig. 9).
Rhyssometopus, indet.
Hadragnostus, indet.

G8. Lat. 22° 07' S., Long. 139° 12' E. 64 feet of limestone and various calcareous beds; main fossiliferous horizon at 23 feet above base (see Plate 1).

<i>Aedotes declivis</i>	Pygidium No. 1
<i>Aedotes instans</i>	Pygidium No. 2
<i>Aedotes mutans</i>	<i>Agnostascus</i> aff. <i>gravis</i>
<i>Ascionepea anitys</i>	<i>Agnostascus gravis</i>
<i>Biaverta reineri</i>	<i>Agnostoglossa bassa</i>
<i>Cermataspis abundans</i>	<i>Agnostus artilimbatus</i>
<i>Erediaspis eretes</i>	<i>Cyclagnostus</i> ? sp. indet.
<i>Ferenepa pilaris</i>	<i>Grandagnostus evexus</i>
<i>Iniotoma iniotoma</i>	<i>Hadragnostus las</i>
<i>Meringaspis</i> sp. B	<i>Hypagnostus durus</i>
<i>Meropalla auriculata</i>	<i>Idolagnostus dryas</i>
<i>Meropalla quadrans</i>	<i>Innitagnostus innitens</i> ?
<i>Plectrifer plectrifer</i>	<i>Ptrychnagnostus nodibundus</i>
<i>Rhyssometopus</i> cf. <i>rhyssometopus</i>	' <i>Pelagiella</i> '
<i>Rhyssometopus</i> (<i>Rostrifinis</i>) <i>rostrifinis</i>	' <i>Helcionella</i> '

G8a. About 40 feet above G8:
Rostrifinis rostrifinis

- G9. Lat. 22° 8½' S., Long. 139° 10' E. Light grey limestone overlain by Cretaceous sandstone and shale in east facing escarpment.
- (1) Limestone at the base of the outcrop:
Aristaluta spicata
Ptychagnostus (Goniagnostus) fumicola
Hypagnostus correctus
Cyclagnostus sp.
aff. *quasivespa*
Quitacetra sp.indet.
- (2) Chert fragment at the contact with Cretaceous: *Agnostus artilimbatus*.
Furthermore, loose chert bits contain:
Aedotes sp.indet.
Ascionepea anitys
Agnostoglossa cf. *bassa*
Rostrifinis rostrifinis
- G10. Lat. 22° 08' S., Long. 139° 15' E. Dark grey banded smelly limestone, with some aphaniitic layers, chert and calcite pods and intraformational breccia. About 20 feet exposed. Apparently same beds as at G131.
- | | |
|--|---|
| <i>Ferenepea</i> cf. (aff.?) <i>hispidia</i> | <i>Ammagnostus mitis</i> |
| <i>Meringaspis</i> , sp. B. | <i>Cyclagnostus quasivespa</i> |
| <i>Palaeadotes</i> aff. <i>dissidens</i> | <i>Idolagnostus</i> sp.indet. |
| <i>Plectrifer plectrifer</i> | <i>Oedorrhachis tridens</i> |
| <i>Rhyssometopus rugiceps</i> | <i>Xestagnostus rasilis</i> |
| ? <i>Rhodonaspis</i> , fragment | <i>Xestagnostus</i> aff. <i>rasilis</i> |
| <i>Agnostus</i> sp.indet. | |
- G12. Lat. 22° 14' S., Long. 139° 22' E. Outcrop in Cottonbush Creek (rapids): sandy limestone—silty, shaly, oolitic, bedded; light coloured; some dolomitic layers present.
- | | |
|---|---|
| <i>Auritama aurita</i> | <i>Meteoraspis</i> aff. <i>bidens</i> (as in D29) |
| <i>Blackwelderia</i> cf. <i>repanda</i> | <i>Mindycrusta</i> sp.indet. |
| <i>Meteoraspis bidens</i> | <i>Placosema adnatum</i> |
- In loose cherts:
- | | |
|--|-------------------------------|
| <i>Biaverta biaverta</i> | <i>Palaeadotes italops</i> |
| <i>Rhyssometopus</i> , indet. | <i>Agnostardis amplinatis</i> |
| <i>Rhyssometopus (Rostrifinis)</i> sp.indet. | |
- G101. Lat. 22° 01' S., Long. 139° 02' E. Sandy fragmentary limestone in creek bed; limestone breccia.
- | | |
|--------------------------------|--|
| <i>Grandagnostus</i> sp.indet. | <i>Pseudophalacroma?</i> <i>dubium</i> |
| <i>Hypagnostus hippalus</i> | <i>Pseudophalacroma</i> sp. K. Öpik, 1961. |
- G102. Lat. 22° 07' S., Long. 138° 59' E. Friable white sandstone with bands of siltstone.
- | | |
|--------------------------------|--|
| <i>Quitacetra arenata</i> | <i>Leiopyge laevigata</i> |
| <i>Diplagnostus planicauda</i> | <i>Peronopsis</i> sp.indet. |
| <i>Grandagnostus</i> sp.indet. | <i>Ptychagnostus</i> (semieffaced) sp.nov. |
| <i>Hypagnostus hippalus</i> | |
- G103. Lat. 22° 08' S., Long. 138° 57' E. Path along fence. Chert biscuits weathered out of shale; red sandstone (below).
- In chert:
- | | |
|------------------------------------|--|
| <i>Alomataspis enodis</i> | <i>Dipentaspis</i> cf. <i>dipentas</i> |
| <i>Ascionepea janitrix</i> | <i>Lampropeltis nitens</i> |
| <i>Damesella torosa</i> | <i>Mapaniidae</i> , gen. et sp.nov. |
| <i>Damesellidae</i> gen. & sp.nov. | |
- in sandstone:
- | | |
|------------------------------|----------------------------------|
| <i>Agnostus</i> sp.indet. | <i>Leiopyge laevigata armata</i> |
| <i>Hypagnostus correctus</i> | <i>Ptychagnostus fumicola</i> |
| <i>Leiopyge laevigata</i> | <i>Triadaspis bigeneris</i> |
- G104. Lat. 22° 09' S., Long. 138° 55' E. White and red sandstone with thin interbeds of limestone.
- | | |
|--|--|
| <i>Quitacetra arenata</i> | |
| <i>Leiopyge laevigata</i> | |
| <i>Ptychagnostus (Goniagnostus) fumicola</i> | |
- G106. Lat. 22° 11' S., Long. 138° 59' E. White and red sandstone with several grey limestone lenses in lower part.
- | | |
|--|--|
| <i>Diplagnostus</i> sp.indet. | |
| <i>Leiopyge laevigata</i> | |
| <i>Ptychagnostus (Goniagnostus) spiniger</i> (Westergaard) | |

- G107. Lat. 22° 10' S., Long. 139° 00' E. A low hill, of shale or siltstone with chert.
Modocia immodulata
Olenoides tranans
Quitacetra indet.
 Fragments of damesellidae
Hypagnostus hippalus
Leiopyge laevigata
- G108. Lat. 22° 10' S., Long. 139° 02' E. See Text-figures 10-12.
- G113. Lat. 22° 12' S., Long. 138° 54' E. Light-coloured laminated marly limestone, fresh from a well.
Rhyssometopus (Rostrifinis?) indet. (in spite of complete specimens)
Xestagnostus sp.indet.
- G113a. Position same as G113. A piece (pod) of chert within some friable silica. Numerous vermiculate branching castings, about 0.5 mm in diameter and 10-15 mm long.
- G114. Lat. 22° 12' S., Long. 138° 57' E. Pale yellow limestone, irregular chert pods with gypsum? pseudomorphs.

<i>Agelagma quadratum</i>	<i>Agnostoglossa bassa</i>
<i>Ascionepea anitys</i>	<i>Clavagnostus bisectus</i>
<i>Biaverta reineri</i>	<i>Hadragnostus las</i>
<i>Plectrifer plectrifer</i>	<i>Idolagnostus dryas</i>
<i>Rostrifinis rostrifinis</i>	Orthoid brachiopods
Castings (burrows?)	
- G115. Lat. 22° 12' S., Long. 138° 58' E. Angular chert fragments on surface.

<i>Damesella torosa</i>	<i>Plectrifer</i> sp.nov. (strong occipital spine)
<i>Meringaspis</i> sp. B.	<i>Rh. (Rostrifinis)</i> sp.indet.
<i>Olenoides tranans</i>	<i>Cyclagnostus</i> cf. <i>quasivespa</i>
- G116. Lat. 22° 13' S., Long. 138° 58' E. Chert biscuits and angular fragments on surface.
 a, b, c. *Kootenia?* cf. *incerta*
Hypagnostus hippalus
- G117. Lat. 22° 14' S., Long. 138° 58' E. Chert with indeterminable trilobite fragments; phosphatic brachiopods.
- G118. Lat. 22° 14' S., Long. 138° 59' E. Chert and limestone, apparently below G119.
Rhyssometopus (Rostrifinis) rostrifinis
 Pygidium No. 3
- G119. Lat. 22° 15' S., Long. 139° 00' E., apparently above G118. Bituminous flaggy limestone with chert and calcite pods and layers with abundant fossils which are silicified. The locality was discovered by Dr E. Reiner (see Öpik, 1960, p. 90) in whose collection fossils marked with the asterisks have been identified. Fossils collected by Frome Broken Hill Pty Ltd geologists from the same site are listed below separately under 41625.

<i>Aedotes declivis</i>	* <i>Rhyssometopus rhyssometopus</i>
<i>Aedotes instans</i>	* <i>Rh. (Rostrifinis) rostrifinis</i>
<i>Aedotes mutans</i>	* <i>Rh. (Rostrifinis)</i> aff. <i>rostrifinis</i>
<i>Agelagma laticeps</i>	Pygidium No. 1
<i>Ascionepea</i> aff. <i>anitys</i>	Pygidium No. 2
* <i>Ascionepea anitys</i>	<i>Agnostascus</i> aff. <i>gravis</i>
* <i>Biaverta reineri</i>	* <i>Agnostascus gravis</i>
* <i>Blackwelderia</i> cf. <i>sabulosa</i>	<i>Agnostoglossa bassa</i>
<i>Cermataspis abundans</i>	<i>Agnostus</i> aff. <i>pisiformis subsulcatus</i>
* <i>Erediaspis eretes</i>	<i>Agnostus artilimbatus</i>
<i>Ferenepea</i> cf. <i>hispida</i>	<i>Clavagnostus bisectus</i>
* <i>Ferenepea pilaris</i>	<i>Cyclagnostus ?</i> sp.indet.
* <i>Griphasaphus griphus (?)</i>	<i>Grandagnostus evexus</i>
<i>Iniotoma iniotoma</i>	* <i>Hadragnostus las</i>
* <i>Interalia serena</i>	<i>Hypagnostus durus</i>
<i>Lonchocephalidae</i> , indet.	* <i>Idolagnostus dryas</i>
* <i>Meringaspis</i> sp.nov. A.	<i>Initagnostus innitens?</i>
<i>Meropalla auriculata</i>	<i>Triadaspis bigeneris</i>
<i>Meropalla quadrans</i>	*Orthoid brachiopods
<i>Placosema caelatum</i>	Conodonts
* <i>Plectrifer plectrifer</i>	Gastropods (<i>Scaevogyrinae</i>)
<i>Rhyssometopus neuter</i>	

Fossils in the collection 41625 (=G119):

Erediaspis eretes

Meropalla auriculata

Rhyssometopus (Rostrifinis) rostrifinis

Rhyssometopus cf. *rhyssometopus*

G121. Lat. 22° 02' S., Long. 139° 01' E. White sandstone.

Quitacetra cf. *arenata*

Grandagnostus sp. indet.

Hypagnostus aff. *brevifrons*

Oidalagnostus trispinifer

Ptychagnostus (Goniagnostus) fumicola

G122. Lat. 22° 04' S., Long. 139° 02' E. Slump roll in silicified shale; chert with fragments of *Redlichia*.

G124. Lat. 22° 16½' S., 138° 58½' E., apparently below G125. Bituminous limestone with layers of silicified fossils; intraformational breccia.

Griphasaphus griphus

Meringaspis sp. A(?)

Placosema adnatum

Placosema caelatum

Rhyssometopus rhyssometopus

Rh. (*Rostrifinis*) *rostrifinis*

Agnostascus gravis

Agnostoglossa bassa

Cyclagnostus quasivespa

Hadragnostus las

Idolagnostus dryas

'*Helcionella*'

Scaevogyrinae

G125. Lat. 22° 17' S., Long. 138° 58½' E., apparently above G124. Bituminous flaggy sandy limestone with silicified fossils.

Blackwelderia sabulosa

Blackwelderia sp. nov. A

Griphasaphus griphus

Placosema caelatum

Rhyssometopus rhyssometopus

Rh. (*Rostrifinis*) aff. *rostrifinis*

'*Helcionella*'

G126. Lat. 22° 17' S., Long. 138° 59' E., apparently above G125. Sandy limestone with siliceous laminae.

Blackwelderia sabulosa

Placosema caelatum

Rhyssometopus rhyssometopus

Molluscs:

Scaevogyrinae, test smooth

Scaevogyrinae, with transverse ribs and sinus

Gen. indet. (cyrtoconic shell)

G127. Lat. 22° 17½' S., Long. 138° 59½' E., apparently above G126. Bituminous and grey sandy limestone with layers of silicified fossils.

Aedotes declivis

Blackwelderia sabulosa

Blackwelderia ? sp. B.

Cermataspis abundans

Ferenepea hispida

Griphasaphus griphus

Leichneyella sp. nov. A

Meropalla quadrans

Palaeadotes aff. *dissidens*

Placosema caelatum

Rhyssometopus rhyssometopus

Stephanocare, indet.

Agnostascus gravis

Agnostoglossa bassa

Idolagnostus dryas

Orthoid brachiopods

Molluscs:

Scaevogyrinae (smooth and ribbed)

Pelagiella?

Worm castings

Ribeirioid?

G128. Lat. 22° 17' S., Long. 139° 01' E. Thin bedded limestone.

Catillicephalidae, indet.

Cermataspis abundans (?)

Palaeadotes aff. *dissidens*

Rhyssometopus rhyssometopus

Large 'lingulellid' brachiopods

'*Helcionella*'

'*Pelagiella*'?

Scaevogyrinae?: smooth, anomphalous, with a high spire; low-spined smooth

Scaevogyrinae.

Ribeirioids: smooth pelecypod-like shells, fused along the dorsum; without a clavicle, with a small anterodorsal beak; narrow gap; growth lines.

- G130. Lat. 22° 16' S., Long. 139° 01' E., apparently above G131. Oolitic limestone with chert and silicified laminae; intraformational breccia.
- | | |
|------------------------------------|-------------------------------------|
| <i>Biaverta</i> cf. <i>reineri</i> | <i>Placosema caelatum</i> |
| <i>Blackwelderia sabulosa</i> | <i>Rhyssometopus</i> , indet. |
| <i>Cermataspis abundans</i> | <i>R. (Rostrifinis) rostrifinis</i> |
| <i>Meropalla auriculata</i> | <i>Cyclagnostus quasivespa</i> |
| <i>Meropalla quadrans</i> | |
- G131. Lat. 22° 15½' S., Long. 139° 01' E., apparently below G130. Dark limestone with aphanitic bands, calcite pods and chert; apparently same beds as at G10.
- | | |
|--|---|
| <i>Meringaspis</i> sp. B | <i>Idolagnostus</i> cf. <i>dryas</i> |
| <i>Palaeadotes</i> aff. <i>dissidens</i> | <i>Leipyge</i> <i>cos</i> |
| <i>Plectrifer mitis</i> | <i>Oidagnostus trispinifer</i> |
| <i>Plectrifer plectrifer</i> | <i>Svealuta</i> cf. <i>primordialis</i> |
| <i>Rh. (Rostrifinis)</i> aff. <i>rostrifinis</i> | <i>Orthoid brachiopods</i> |
| <i>Tricrepecephalus</i> ? sp.indet. | <i>Acrothele</i> |
| <i>Cyclagnostus quasivespa</i> | ' <i>Helcionella</i> ' (in limestone) |
| <i>Hypagnostus</i> cf. <i>correctus</i> | |
- G132. Lat. 22° 15½' S., Long. 139° 00½' E. Limestone with siliceous layers and chert.
- Rhyssometopus rhyssometopus*
Stephanocare? sp.nov.
 Ribeirioid?
- G133. Lat. 22° 08' S., Long. 139° 01' E. Red sandstone.
- Nepeidae*, new genus
Quitacetra, indet.
Oidagnostus trispinifer
 Agnostids, undefinable but for their Middle Cambrian aspect.
- G136. Lat. 22° 05' S., Long. 139° 10' E. Intraformational limestone breccia; grey and pink limestone overlain by red sandstone and siltstone.
- Plectrifer* indet. (*mitis*?)
- G137. Lat. 22° 07' S., Long. 139° 14' E. (Text-fig. 7). Intraformational limestone breccia with fossiliferous cherts in the pediment at the foot of the escarpment; pseudomorphs of gypsum crystals in chert.
- | | |
|--------------------------------------|--------------------------------------|
| <i>Placosema caelatum</i> | <i>Connagnostus</i> ? <i>zonatus</i> |
| <i>Rh. (Rostrifinis) rostrifinis</i> | <i>Cyclagnostus quasivespa</i> |
- G140. Lat. 22° 18' S., Long. 138° 01' E. Grey dolomitic limestone with *Acrothele*.
- G141. Lat. 22° 6½' S., Long. 139° 09½' E. Chert with *Redlichia*.
- G144. Lat. 22° 11' S., Long. 139° 04' E. Apparently calcareous sandstone and siltstone with fossiliferous chert.
- Fragments of *Rhyssometopus* and *Plectrifer*;
 Pygidium No. 1
Grandagnostus evexus
- G145. Lat. 22° 11' S., Long. 139° 03' E. Limestone with fossiliferous chert.
- | | |
|--|--------------------------------|
| <i>Agelagma laticeps</i> | <i>Rhyssometopus</i> sp.indet. |
| <i>Griphasaphus</i> ? indet. | <i>Grandagnostus evexus</i> |
| <i>Rhyssometopus (Rostrifinis) rostrifinis</i> | |
- G147. Lat. 22° 15' S., Long. 139° 03' E. Grey, pink and dark bituminous limestone.
- | | |
|---|--------------------------------|
| <i>Rh. (Rostrifinis)</i> cf. <i>rostrifinis</i> | <i>Cyclagnostus quasivespa</i> |
| <i>Rhyssometopus rugiceps</i> ? | <i>Xestagnostus</i> sp.indet. |
- G149. Lat. 22° 15'' S., Long. 138° 58' E. Limestone with fossiliferous chert.
- | | |
|---------------------------|--------------------------------------|
| <i>Aedotes mutans</i> | <i>Plectrifer plectrifer</i> |
| <i>Erediaspis eretes</i> | <i>Rhyssometopus neuter</i> |
| <i>Meringaspis</i> sp. A. | <i>Rh. (Rostrifinis) rostrifinis</i> |
| <i>Meropalla quadrans</i> | Nautiloids? (fragmentary shells) |

- G150. Lat. 22° 15½' S., Long. 138° 57½' E., above G151. Limestone with chert and siliceous laminae.
- | | |
|--------------------------------------|---------------------------------------|
| <i>Ascionepea</i> aff. <i>anitys</i> | <i>Rhyssometopus neuter</i> |
| <i>Ascionepea anitys</i> | <i>Agnostascus</i> aff. <i>gravis</i> |
| <i>Ferenepea</i> cf. <i>hispida</i> | <i>Agnostoglossa bassa</i> |
| <i>Iniotoma iniotoma</i> | <i>Hadragnostus las</i> |
| <i>Meringaspis</i> sp. | <i>Hypagnostus durus</i> |
| <i>Plectrifer plectrifer</i> | <i>Leiopyge</i> cf. <i>cos</i> |
| <i>Rh. (Rostrifinis) rostrifinis</i> | <i>Grandagnostus evexus</i> |
- G151. Lat. 22° 16' S., Long. 138° 57' E. Limestone in sequence of G149.
- Erediaspis eretes*
Rh. (Rostrifinis) rostrifinis
 Castings
- G153. Lat. 22° 13' S., Long. 139° 10' E. Mottled (grey and pink) limestone with chert and siliceous partings.
- | | |
|--|---|
| <i>Griphasaphus griphus</i> | <i>Aspidagnostus</i> sp. nov. aff. <i>stictus</i> |
| <i>Palaeadotes</i> aff. <i>dissidens</i> | <i>Cyclagnostus quasivespa</i> |
| <i>Placosema caelatum</i> | <i>Oedorhachis tridens</i> |
| <i>Rhyssometopus rhyssometopus</i> | ' <i>Helcionella</i> ' |
| <i>Stephanocare richthofeni</i> | Scaevogyrinae (with ribs) |
- G154. Lat. 22° 14' S., Long. 139° 10' E. Limestone with *Acrothele*.
- G155a Lat. 22° 14½' S., Long. 139° 11' E. Limestone.
- Worm burrows
 Gastropods (*Scaevogyrinae*)
- G161. Lat. 22° 19' S., Long. 138° 55' E. (1.5 miles west from McCabe Knob). Light coloured, dolomitic limestone with *Acrothele*.
- G400. Lat. 22° 15½' S., Long. 138° 45½' E. Yellow dolomite with burrows (Text-fig. 14).
- G409. Lat. 22° 19' S., Long. 138° 56' E. (0.5 mile south-west from McCabe Knob). Yellow dolomitic limestone and aphanitic limestone.
- Blackwelderia* aff. *sabulosa*
Palaeadotes cf. *italops*
 Nautiloids
- McCabe Knob. Lat. 22° 19' S., Long. 138° 51' E. Pink and red siltstone and shale; fine grained sandstone. Fossils in the collection 41679, by geologists of Frome Broken Hill Ltd, Pty.
- | | |
|-------------------------------|---|
| <i>Auritama?</i> sp. indet. | <i>Agnostoglossa</i> cf. <i>bassa</i> |
| <i>Biaverta biaverta</i> | <i>Ammagnostus</i> cf. <i>integriceps</i> |
| <i>Palaeadotes dissidens</i> | <i>Connagnostus?</i> <i>zonatus</i> |
| <i>Rhyssometopus princeps</i> | <i>Idolagnostus dryas</i> |
- G417. Lat. 22° 09' S., Long. 139° 11' E. Flaggy bituminous limestone with layers of silicified fossils.
- | | |
|---------------------------------------|--|
| <i>Aedotes instans</i> | <i>Agnostascus gravis</i> |
| <i>Aedotes mutans</i> | <i>Agnostoglossa bassa</i> |
| <i>Agelagma quadratum</i> | <i>Agnostus</i> aff. <i>pisiformis</i> |
| <i>Ascionepea anitys</i> | <i>Agnostus artilimbatus</i> |
| <i>Biaverta reineri</i> | <i>Clavagnostus bisectus</i> |
| <i>Cermataspis abundans</i> | <i>Cyclagnostus?</i> sp. indet. |
| <i>Erediaspis eretes</i> | <i>Grandagnostus evexus</i> |
| <i>Ferenepea pilaris</i> | <i>Hadragnostus las</i> |
| <i>Iniotoma iniotoma</i> | <i>Hypagnostus durus</i> |
| <i>Interalia serena</i> | <i>Idolagnostus dryas</i> |
| <i>Meringaspis</i> sp. A. | <i>Imitagnostus innitens?</i> |
| <i>Meropalla auriculata</i> | <i>Leiopyge cos</i> |
| <i>Meropalla quadrans</i> | <i>Pseudagnostus bulgosus</i> |
| <i>Olenoides tranans</i> | <i>Ptychagnostus nodibundus</i> |
| <i>Placosema caelatum</i> | <i>Triadaspis bigeneris</i> |
| <i>Plectrifer mitis</i> | Fragment of a <i>Glyptagnostus?</i> <i>cephalon</i> (aff. <i>G. stolidotus</i>) |
| <i>Plectrifer plectrifer</i> | Scaevogyrinae with revolving ornament |
| <i>Rhyssometopus rhyssometopus</i> | ' <i>Pelagiella?</i> ' |
| <i>Rh. (Rostrifinis) rostrifinis</i> | ' <i>Helcionella</i> ' |
| <i>Agnostascus</i> aff. <i>gravis</i> | |
- G426. Lat. 22° 55' S., Long. 139° 03' E. Chert with *Redlichia*.

- G427d. Lat. 22° 11' S., Long 139° 02' E. Chert with *Hypagnostus correctus*.
 G428. Lat. 22° 13' S., Long. 139° 02' E. Fragments of *Rh. (Rostrifinis)* in chert.
 G429b. includes 429a.). Lat. 22° 13' S., Long. 139° 01' E. Thin-bedded limestone, chert and limestone breccia.

<i>Ascionepea anitys</i>	<i>Rh. (Rostrifinis) rostrifinis</i>
<i>Catillicephalidae</i> , indet. (a new form)	<i>Agnostascus gravis</i>
<i>Cermataspis abundans</i>	<i>Agnostoglossa bassa</i>
<i>Erediaspis eretes</i>	<i>Clavagnostus bisectus</i>
<i>Iniotoma iniotoma</i>	<i>Cyclagnostus?</i> sp. indet.
<i>Norwoodella?</i> dubitalis	<i>Hadragnostus las</i>
<i>Onchonotellus offula</i>	<i>Idolagnostus dryas</i>
<i>Plectrifer mitis</i>	<i>'Helcionella'</i>
<i>Plectrifer plectrifer</i>	

- G437. Lat. 22° 19' S., Long. 139° 02' E. Sandy limestone.
 Worm castings
Hyolithus (in limestone)
 G443a. Lat. 22° 09½' S., Long. 139° 01' E. Impure limestone and chert.
Plectrifer sp.indet.
Rh. (Rostrifinis)? sp.indet.
Agnostus? sp.indet.
 G443b. Same position as G443a. Porous brown friable fine-grained sandstone.
Leiopyge sp.indet.

GLENORMISTON-SYLVESTER CREEK AREA (MAP, TEXT-FIG. 4) LOCALITIES

- G48. Lat. 22° 59' S., Long. 138° 43' E. Dark smelly limestone with calcite pods, and pink pods with crystal needles (calcite? or pseudomorphs after gypsum).
Auritama trilunata
Blackwelderia gibberina
Cyrtoprora intricata
 Larva gen. & sp.indet.
Metopotropis travesi
Palaeadotes dissidens
Rhodonaspis longula
Rhyssometopus princeps
Agnostardis amplinatis
Xestagnostus legirupa
 Gastropods (low spire, smooth)
 G49. Lat. 22° 58' S., Long. 138° 43' E. Limestone, as in G48.
Aulacodigma quasispinale
Auritama trilunata
Blackwelderia gibberina
Lonchocephalus? indet.
Nepeidae, gen.indet. (nov.?)
Talbotinella notulata
Glyptagnostus stolidotus
Pseudagnostus mestus(?)
Xestagnostus legirupa
 G50. Lat. 22° 51½' S., Long 138° 43' E. Limestone, as in G48.
Acrodirotes fastosa
Auritama trilunata
Catillicephalidae, indet.
Liostracina nolens
Mindycrusta compacta
Mindycrusta mindycrusta
Palaeadotes dissidens
Talbotinella notulata
Teinistion amydiun
 Larva, gen. & sp. indet.
Agnostardis amplinatis
Glyptagnostus stolidotus
Xestagnostus legirupa
 G51. Lat. 22° 57½' S., Long. 138° 41' E. Bituminous limestone with chert laminae.
Aulacodigma quasispinale
Auritama trilunata
Cyrtoprora intricata
Palaeadotes dissidens
Placosema adnatum
Rhyssometopus princeps
 G205. Lat. 22° 57' S., Long. 138° 44' E. Bituminous limestone.
?Rhodonaspis, indet.
 G332. Lat. 22° 52½' S., Long. 138° 41' E. Friable sandstone (dolomite).
Tsinania cf. *ceres*
Coreanocephalus? sp.

- W1. Lat. 23° 00' S., Long. 138° 49' E. Bituminous smelly limestone with calcite pods.
Auritama trilunata *Agnostardis amplinatis*
Biaverta cf. biaverta *Aspidagnostus inquilinus*
Ferenepea hispida *Clavagnostus bisectus*
Henadoparia integra *Connagnostus venerabilis*
Liostracina nolens *Glyptagnostus lenis*
Liostracina volens *Glyptagnostus stolidotus*
Lynaspis noakesi *Pseudagnostus bulgosus*
Nomadinis pristinus *Xestagnostus legirupa*
Plectrifer sp.indet. *Gastropods* (lenticular)
Rhodonaspis longula *Scaevogyrinae*, ornament weak (growth lines;
Rhyssometopus princeps sinus indicated).
Saukia? *priscilla*
- W2. Lat. 23° 04' S., Long. 138° 55' E. Flaggy grey sandy limestone with *Hypagnostus hippalus*.
- W5. Lat. 23° 05½' S., Long. 138° 51½' E. Limestone with *Glyptagnostus reticulatus*.
- W6. Lat. 23° 06' S., Long. 138° 51½' E. Limestone with *Glyptagnostus reticulatus*.
- W7. Lat. 23° 06½' S., Long. 138° 57½' E. Limestone with *Corynexochus plumula*.
- W8. Lat. 23° 06½' S., Long. 138° 51½' E. Limestone with *Erixanium sentum* fauna;
Idamea baccata is described.
- W10. Lat. 23° 07½' S., Long. 138° 51½' E. Limestone. From the lower part of the sequence are described:
Peratagnostus nobilis *Corynexochus plumula*
Blountia georginae *Eugonocare* cf. *tesselatum*
See also Öpik (1963).
- W14. Lat. 23° 14' S., Long. 138° 45' E. (Rocky Waterhole). Dolomitic limestone with *Eoorthis*.
- W15. Lat. 23° 00' S., Long. 138° 42' E. Bituminous smelly limestone.
Auritama trilunata *Rhyssometopus princeps*
Aulacodigma quasispinale *Agnostardis amplinatis*
Blackwelderia gibberina *Glyptagnostus lenis*
Catillicephalidae gen. & sp. indet. *Pseudagnostus sericatus*
Cyrtoprora intricata *Xestagnostus legirupa*
Histiomona oculosa *Scaevogyrinae*
Rhodonaspis longula
- W16. Lat. 23° 02' S., Long. 138° 42' E. (Mount Idamea). *Idamea venusta* described: see also Öpik (1963).
- W17. Lat. 23° 58' S., Long. 138° 42' E. Grey to blue sandy limestone; calcite pods, pink pods with sponge spicules; breccia.
Aulacodigma quasispinale *Palaeadotes*, indet. (*dissidens*?)
Auritama aurita *Rhyssometopus princeps*
Biaverta biaverta *Talbotinella notulata*
Blackwelderia gibberina *Gastropods* (*Scaevogyrinae*)
Catillicephalidae, indet. *Gastropods* (evolute, no spire).
Meteoraspis bidens
- W17A. Same coordinates as W17. Red sandstone, remnant of a small valley fill on the eroded surface of Upper Cambrian limestone.
Pelecypods.
- W18. Lat. 22° 58' S., Long. 138° 41' E. Yellow sandy limestone.
Auritama aurita
Palaeadotes dissidens
Xestagnostus sp.indet.
Scaevogyrinae (abundant but not well preserved).
- W20. Lat. 22° 57½' S., Long. 138° 41½' E. Smelly bituminous dark flaggy limestone with siliceous laminae on bedding partings.
Acrodirotes fastosa *Rhodonaspis longula*
Aulacodigma quasispinale *Rhyssometopus princeps*
Auritama trilunata *Saratogia?* *vetusta*
Avonina? sp.indet. *Teinistion amydatum*
Blackwelderia gibberina *Townleyella townleyi*
Cyrtoprora intricata *Agnostardis amplinatis*
Henadoparia integra *Connagnostus venerabilis*

- | | |
|--------------------------------|---|
| <i>Liostracina nolens</i> | <i>Idolagnostus agrestis</i> |
| <i>Lynaspis noakesi</i> | <i>Innitagnostus</i> aff. <i>innitens</i> |
| <i>Meteoraspis bidens</i> | <i>Pseudagnostus sericatus</i> |
| <i>Mindycrusta mindycrusta</i> | <i>Ptychagnostus?</i> <i>serus</i> |
| <i>Nilegna sigmata</i> | <i>Xestagnostus legirupa</i> |
| <i>Palaeadotes dissidens</i> | Scaevogyrinae, low spire |
| <i>Palaeadotes italops</i> | Scaevogyrinae, high spire |
- W21. Lat. 22° 56' S., Long. 138° 40' E. (Text-fig. 13). Hard grey sandy limestone.
Auritama trilunata *Dipyrgotes* aff. *novella*
Biaverta biaverta *Palaeadotes* sp.indet.
Blackwelderia sp.indet. Scaevogyrinae
- W22. Lat. 22° 55' S., Long. 138° 40' E. Dark limestone.
Auritama trilunata
- W36. Lat. 23° 20½' S., Long. 138° 58' E. Dark smelly limestone.
Centroleura sp.nov. *Leiopyge laevigata armata*
Diplagnostus crassus *Oidagnostus personatus*
Hypagnostus brevifrons *Pseudophalacroma dubium*
Leiopyge laevigata *Svealuta* sp.
- W39. Lat. 23° 26' S., Long. 138° 57' E. Pediment with dark flaggy limestone; described are:
Corynexochus plumula
Innitagnostus inexpectans
Pseudagnostus idalis
- W40. Lat. 23° 08' S., Long. 138° 53' E. Pediment with flaggy limestone; a small fault separates light-coloured sandy limestone with *Glyptagnostus reticulatus* from a dark and smelly limestone with *Corynexochus plumula* which is described here.
- W41. Lat. 23° 07' S., Long. 138° 52' E. Limestone; *Corynexochus plumula* is described.
- W45. Lat. 23° 08' S., Long. 138° 51' E. Limestone. *Idamea extricans* is described.
- W66. Lat. 22° 59' S., Long. 138° 45' E. Coquinoid, almost without a matrix (limestone); grading of fossil fragments apparent; fossils are silicified.
Aulacodigma quasipinale *Palaeadotes dissidens*
Blackwelderia gibberina *Rhyssometopus princeps*
Meteoraspis bidens
- W161. Lat. 23° 05' S., Long. 139° 00' E. Dark limestone.
Agnostardis amplinatis
 Problematical shell
- W204. Lat. 23° 01' S., Long. 138° 53' E. Friable sandstone (dolomitic).
Pagodia
 'Sinosaikia' (*Saukia?* *orientalis* Resser & Endo)
Parakoldinioidia sp.nov.
Tsinania cf. *ceres* Walcott.
Eoorthis
- W250. Lat. 23° 24' S., Long. 138° 59' E. Fractured dark smelly laminated limestone with pyrite pods.
Centroleura sp.nov. (hypostoma) *Leiopyge laevigata armata*
Leiopyge laevigata *Pseudophalacroma dubium*
- W253. Lat. 23° 15' S., Long. 139° 02' E. Blocks of grey sandy limestone, with calcite pods with *Rhyssometopus (Rostrifinis) rostrifinis* and Damesellinae, (Mindyallan, Zone of *Erediaspis eretes*) resting on red laminated limestone with *Lingulella* (Middle Cambrian, possibly Zone of *L. laevigata*).
- W255. Lat. 23° 15' S., Long. 139° 03½' E. Dark smelly limestone.
Leiopyge laevigata armata
Pseudophalacroma dubium.
- W258. Lat. 22° 58' S., Long. 138° 48½' E. Dark limestone.
Biaverta biaverta *Agnostardis amplinatis*
Rhodonaspis longula *Glyptagnostus stolidotus*
Rhyssometopus sp.indet.

- W259. Lat. 22° 58½' S., Long. 138° 47½' E. Grey sandy limestone.
Auritama aurita *Xestagnostus* sp.indet.
Palaeadotes dissidens 'Helcionella' (in limestone)
Agnostardis amplinatis
- W283. Lat. 23° 12' S., Long. 138° 03½' E. (Toomba Range; Text-fig. 2). Dark limestone.
Palaeadotes dissidens
Rhyssometopus princeps
- W301. Lat. 23° 00' S., Long. 138° 49' E. Grey, pure, almost aphanitic limestone.
Asaphiscidae, gen.indet. *Meteoraspis bidens*
Ferenepea cf. *hispida* *Palaeadotes* sp.indet.
Mindycrusta mindycrusta *Rhyssometopus princeps*

QUITA CREEK AREA LOCALITIES

Geology in Noakes, Carter and Opik (1959); the lists (below) are incomplete and refer only to described or discussed fossils.

- D54. Lat. 21° 57½' S., Long. 139° 04' E. Sandstone with re-worked fragmentary limestone at its base.
Dipentaspis dipentaspis
Dipentaspis aff. *dipentaspis*
Quitacetra arenata
- D59. Lat. 21° 57' S., Long. 139° 05' E. Limestone with chert.
Quititalia uncata
- D95. Lat. 21° 56' S., Long. 139° 00½' E. Sandstone.
Dipentaspis dipentaspis *Dolichoagnostus*? indet.
Dipentaspis ratis *Linguagnostus* cf. *kjerulfi*
Quitacetra arenata *Peronopsis* aff. *fallax*
Leichneyella sp. B.
- D96. Lat. 21° 56' S., Long. 139° 01' E. Calcareous sandstone.
Dipentaspis dipentaspis *Grandagnostus*
Quitacetra arenata *Hypagnostus hippalus*
Quititalia sp.nov. aff. *uncata* *Ptychagnostus* (*Goniagnostus*) *spiniger*
 Locality 41621 by Frome Broken Hill Pty Ltd geologists containing *Dipentaspis dipentaspis* is close to D96.
- D99. Lat. 21° 56' S., Long. 139° 03' E. Leached dolomitic sandstone.
Dipentaspis dipentaspis
Kootenia? cf. *incerta*
Rhyssometopus (*Rostrifinis*) *tiro*
- D104. Lat. 21° 53' S., Long. 139° 03' E. Dark smelly limestone.
Quititalia uncata

DE LITTLE RANGE LOCALITIES

All fossils collected from the De Little Range sites are recorded in the lists (below).

- B259. Position close to D126.
Mindycrusta advena
Aspidagnostus stictus
Glyptagnostus reticulatus
- B322. Position close to D126.
Eugonocare, sp.indet.
Glyptagnostus reticulatus
Innitagnostus inexpectans
- B525. Lat. 22° 15' S., Long. 139° 50' E.
Aulacodigma illimbatum *Glyptagnostus stolidotus*
Rhodonaspis longula *Innitagnostus innitens*
Agnostardis amplinatis *Oxyagnostus apicula*
Aspidagnostus inquilinus *Pseudagnostus ampullatus*

B537. Lat. 22° 19' S., Long. 139° 52' E.

Aulacodigma illimbatum
Mindycrusta notostena
Olenidae, gen. & sp. indet.
Agnostardis amplinatis
Ammagnostus sp. indet.
Aspidagnostus inquilinus

Glyptagnostus stolidotus
Innitagnostus innitens
Oxyagnostus apicula
Pseudagnostus ampullatus
Scaevogyriinae

D126. Lat. 22° 16' S., Long. 139° 51' E.

Eugonocare cf. *tesselatum*
Mindycrusta advena
Aspidagnostus stictus

Glyptagnostus reticulatus
Innitagnostus inexpectans

POMEGRANATE CREEK AREA LOCALITIES

The geology and lithology of the Pomegranate Creek area were described earlier (Öpik, 1963).

D120b. Lat. 21° 47' S., Long. 140° 16' E. Described are:

Idamea baccata
Peratagnostus nobilis

These new species belong to the *Erixanium sentum* Zone; all fossils from the *Agnostotes inconstans*—*Irvingella tropica* Zone (above) are already (op.cit.) described.

D132. Lat. 21° 41' S., Long. 140° 11' E. Described are:

Pseudagnostus idalis
Pseudagnostus cf. *idalis*

D133. Lat. 21° 36' S., Long. 140° 06' E. Limestone with *Glyptagnostus stolidotus* has been recorded from this locality earlier.

SELWYN RANGE LOCALITIES

Geological and lithological data for the Selwyn Range were published earlier (Öpik, 1961) and supplemented in Öpik (1963). The Mindyallan fossils of the Selwyn Range come from the 'lower chert bed' of the O'Hara Shale and are listed below. For position see also Text-fig. 2 and Carter & Öpik (1963).

D6. Lat. 21° 25' S., Long. 140° 00' E. The list of fossils referable to the *Glyptagnostus stolidotus* Zone is essentially the same as in D29; however

Leichneyella caseyi
Pseudagnostus ampullatus
are present in D6 and absent in D29.

From the same locality and from about 70 feet above the *G. stolidotus* fauna immature specimens of *Eugonocare* aff. *tesselatum* (Pl. 8, fig. 3.) are described. The larger part of the collection from D6 perished in a fire.

D28. Lat. 21° 26' S., Long. 139° 58' E. A relatively small number of fossils has been collected at this locality, but all recorded species occur also at D29 and D6.

D29. Lat. 21° 26' S., Long. 139° 59½' E.

Adelogonus solus
Anopocodia globiceps
Aulacodigma quasispinale
Auritama trilunata
Biaverta biaverta
Blackwelderia repanda
Brassicicephalus sp. indet.
Catillicephala sp. indet.
Dipyrgotes novella
Doremataspis ornata
Ferenepea hispida
Henadoparia integra
Liostracina volens
Liostracinoides? sp. indet.
Lobocephalina pyriceps
Lophoholcus asper
Meringaspis meringaspis
Meteoraspis aff. *bidens*
Mindycrusta mindycrusta
Nomadinis pristinus

Townleyella townleyi
(?) Pygidium and Thorax No. 4
Pygidium No. 5
Agnostardis amplinatis
Agnostardis cf. *amplinatis*
Agnostogonus incognitus
Ammagnostus euryaxis
Ammagnostus integriceps
Ammagnostus psammius
Aspidagnostus inquilinus
Clavagnostus bisectus
Connagnostus venerabilis
Discagnostus spectator
Glyptagnostus stolidotus
Idolagnostus agrestis
Idolagnostus dryas
Innitagnostus innitens
Oxyagnostus apicula
Plurinodus discretus
Plurinodus discretus?

Palaeadotes italops
Paracoosia aspis
Peichiashania? lunatula
Peichiashania? pelta
Polycyrtaspis flexuosa
Rhodonaspis longula
Rhyssometopus princeps
Saukia? priscilla
Solenopleura? erista

Pseudagnostina? aff. vicaria
Pseudagnostina vicaria
Pseudagnostus bulgosus
Pseudagnostus mestus
Ptychagnostus? serus
Xestagnostus legirupa
Stenothea
Monoplacophara (one form)

- D15. Lat. $21^{\circ} 21\frac{1}{2}'$ S., $139^{\circ} 59\frac{1}{2}'$ E. Reference to this locality is made in connexion with *Ptychagnostus* (*Goniagnostus*) sp.nov. aff. *fumicola*.

OTHER LOCALITIES

- M65. Lat. $19^{\circ} 24'$ S., Long. $138^{\circ} 31'$ E. V-Creek Limestone, right bank of the O'Shannassy River, Camooweal Sheet area. Described is Damesellidae, gen.nov., sp.indet.
- NT187. Lat. $23^{\circ} 37'$ S., Long $134^{\circ} 30'$ E., about 39 miles east of Alice Springs. Ross River Valley, about 1.5 miles downstream from 'Loves Creek Homestead', at the mouth of a gully of a right bank tributary; the outcrop is at the outer 'corner' of the south bank of the gully joining the valley.

Two collections are available:

- (1) Collection by Miss Joyce Gilbert-Tomlinson. Grey hard almost aphanitic flaggy limestone with darker spots and cystid fragments, about 15 feet above creek bed.
Auritama sp.nov. (pygidium with short axis)
Damesellinae, fragments
Liostracina cf. *volens*
Lingulella
Acrotreta
- (2) Collection by A. A. Öpik. Lowermost 3 feet at the corner of the gully. Oolitic limestone with fossils enveloped in radiate calcite which in some layers constitutes the matrix; aphanitic layers are also present. Parts of the outcrop are pink or even red and the limestone is friable externally—apparently from bush fires. It is a gastropod limestone.
Liostracina cf. *krausei* Monke
Metopotropis sp.nov.
Plectrifer? sp.nov. (pygidia)
New genus of trilobites *familiae incertae*
An articulate brachiopod
Lingulella
Hyolithus and its opercula
Cystid fragments
Crustacea: bivalved small carapaces fused along the dorsum and with a rostrum(?); two forms are present, one smooth and another with longitudinal ribs.
Gastropods: at least four sinistral forms interpretable as Scaevogyrinae and related families; these are
(1) 'Matherella' with a high spire; (2) 'Scaevogyra' with a low spire, probable two species; (3) *Matherella*-like shells but with a revolving furrow; and
(4) trochiform shells with a flat base. *Pelagiella* is also present.

PLATES

Photography by C. G. Gatehouse and by R. Miniotas; prints by J. Zawartko.

*Collotype printing by Cotswold Collotype Co. Ltd, Wotton-under-Edge,
Gloucestershire, England.*

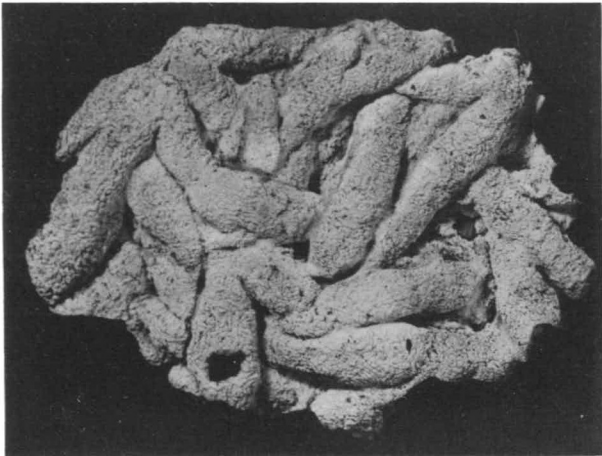
PLATE 1

Siliceous lamina with silicified trilobites, x 3·8. The large cranidium is the holotype of *Meropalla auriculata* sp.nov. (Pl. 19, fig. 4); the subcentral large, partly buried cranidium (CPC 5360) belongs to *Meropalla quadrans* sp.nov.; on the right from it at the edge the cephalon of *Ptychagnostus nodibundus* sp.nov. (Pl. 57, fig. 4). Fragments of the following trilobites are also determinable: *Aedotes declivis* sp.nov., *A. instans* sp.nov., *A. mutans* sp.nov., *Cermataspis abundans* sp.nov., *Erediaspis eretes* sp.nov., *Plectrifer plectrifer* sp.nov., *Rostrifinis rostrifinis* sp.nov., *Grandagnostus evexus* sp.nov., *Agnostascus* aff. *gravis*, *Agnostoglossa bassa* sp.nov., *Hadragnostus las* sp.nov., and *Hypagnostus durus* sp.nov.



PLATE 2

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Castings No. 1	395
Fig. 1.—Specimen CPC 5361, about x 1. Mungerebar Limestone, loc. G127, Zone of <i>Cyclagnostus quasivespa</i> .	
<i>Svealuta</i> cf. <i>primordialis</i>	394
Fig. 2.—Left valve (x 8), CPC 5362. Mungerebar Limestone, loc. G131, Zone of <i>Cyclagnostus quasivespa</i> .	
<i>Aristaluta spicata</i> sp.nov.	394
Figs 3 and 4.—(x 9). Figure 3—right valve, CPC 5363; Figure 4— holotype , left valve, CPC 5364. Mungerebar Limestone, loc. G9, Zone of Middle/Upper Cambrian passage.	
<i>Alomataspis enodis</i> sp.nov.	176
Fig. 5.—Cranidium (x 4), rubber cast of holotype , CPC 5365.	
Fig. 6.—Pygidium (x 6), CPC 5366. Transition of Steamboat Sandstone/Mungerebar Limestone, loc. G103, Zone of Middle/Upper Cambrian passage.	
<i>Kootenia</i> ? cf. <i>incerta</i> (Rusconi)	173
Fig. 7.—Pygidium (x 2.7), CPC 5367. Steamboat Sandstone, loc. D99, Zone of Middle/Upper Cambrian passage.	
<i>Olenoides tranans</i> sp.nov.	174
Fig. 8.—Pygidium (x 4), holotype , CPC 5368. Mungerebar Limestone, loc. G417, Zone of <i>Erediaspis eretes</i> .	



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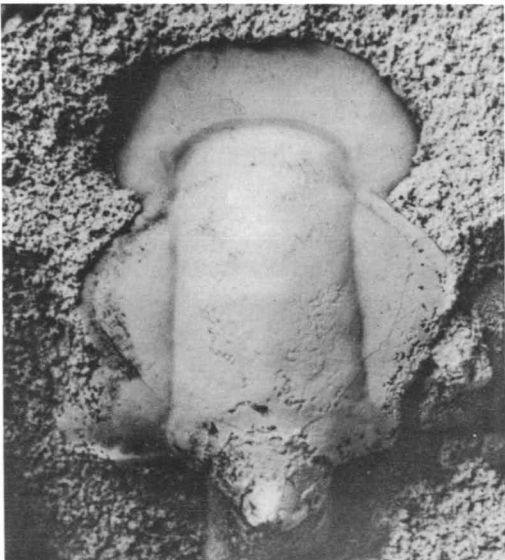
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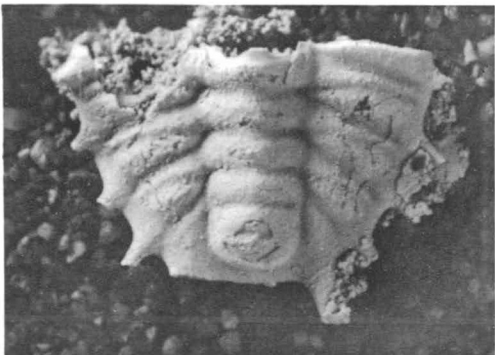
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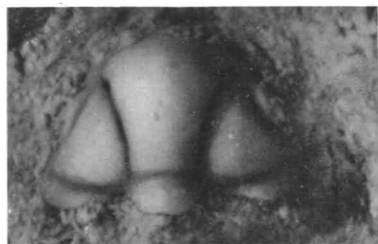
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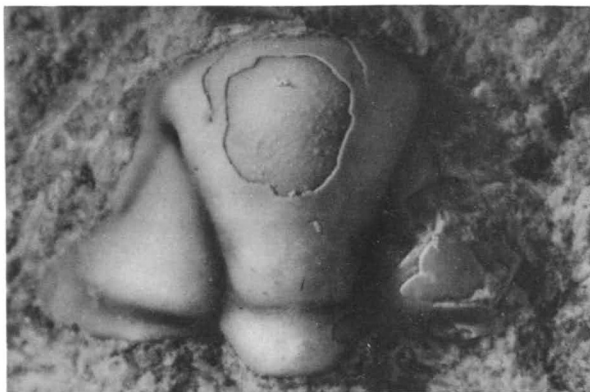
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PLATE 3

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<i>Corynexochus plumula</i> Whitehouse	178
Fig. 1.—Cranidium (x 14), CPC 5369, loc. W10.	
Fig. 2.—Cranidium (x 14), CPC 5370, loc. W41.	
Fig. 3.—Fused rostral shield and hypostoma (x 12), CPC 5371, loc. W40.	
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Fig. 5.—Hypostoma and rostral shield (x 12), CPC 5373, loc. W10.	
Fig. 6.—Pygidium (x 12), CPC 5374, loc. W39.	
Fig. 7.—Pygidium (x 12), CPC 5375, loc. W10.	
Fig. 8.—Pygidium (x 6), CPC 5376, loc. W41.	
Fig. 9.—Pygidium (x 6), CPC 5377, loc. W40.	
Fig. 10.—Pygidium (x 6), CPC 5378, loc. W40.	
Fig. 11.—Pygidium (x 6), CPC 5379, loc. W41.	



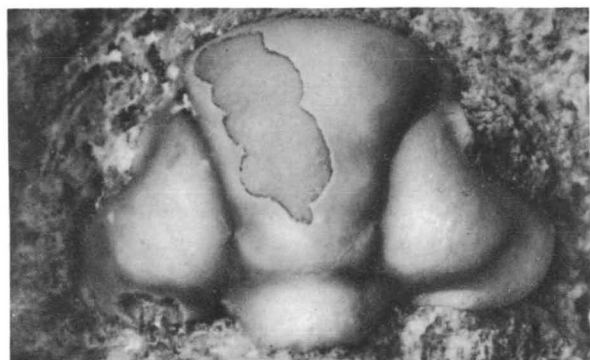
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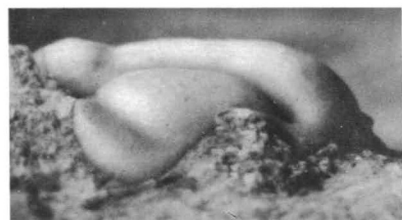
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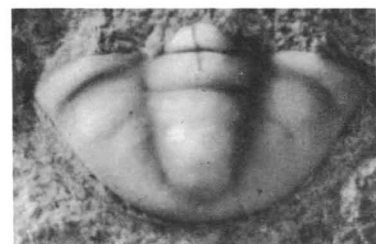
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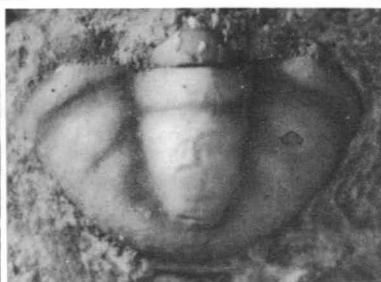
4a



4b



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10



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PLATE 4

	Page
<i>Solenopleura? erista</i> sp.nov.	187
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Fig. 2.—Cranidium (x 8), holotype , CPC 5381.	
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Fig. 5.—Fragmentary complete shield (x 8·5), CPC 5384.	
Fig. 6.—Fragmentary complete shield (x 8), CPC 5385.	
Fig. 7.—Left free cheek (x 8), CPC 5386.	
Fig. 8.—Right free cheek (x 8), CPC 5387.	
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1a



1b



1c



2



3



4



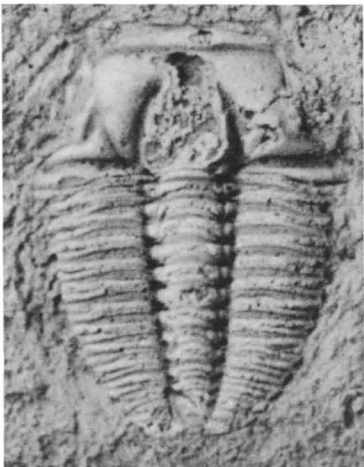
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6



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PLATE 5

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Fig. 1.—Cranidium (x 12), test partly preserved, CPC 5389, loc. D28.	
Fig. 2.—Decorticated cranidium (x 10), CPC 5390, loc. D29.	
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Fig. 6.—Pygidium (x 7), CPC 5394, doublure showing, loc. W20.	
Fig. 7.—Cranidium (x 2·5), CPC 5395, loc. W20.	
Fig. 8.—Two cranidia (x 2·5), CPC 5397 (above) and CPC 5398 (below); in left lower corner cranidium of <i>Nilegna sigmata</i> , CPC 5396, loc. W20. Georgina limestone, Zone of <i>Glyptagnostus stolidotus</i> .	
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Fig. 9.—Fragmentary pygidium (x 2·5), CPC 5399. Mungerebar Limestone, loc. G131, Zone of <i>Cyclagnostus quasivespa</i> .	



1



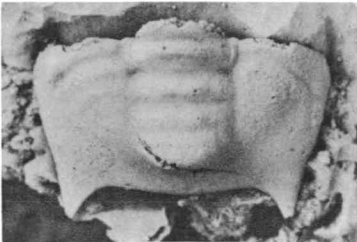
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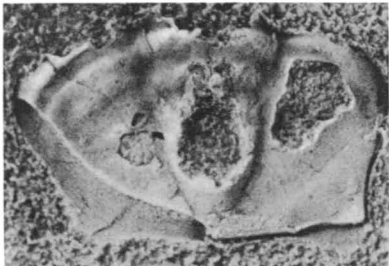
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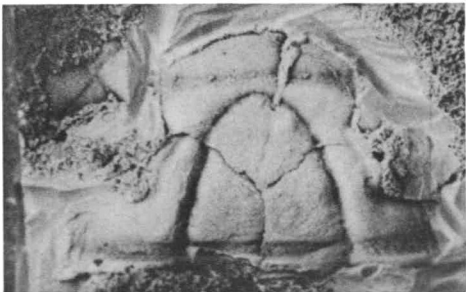
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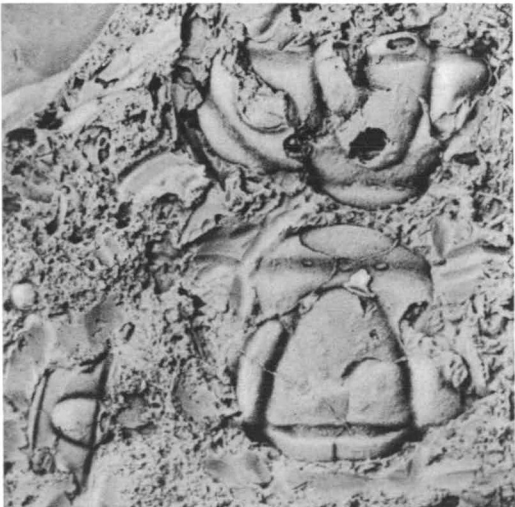
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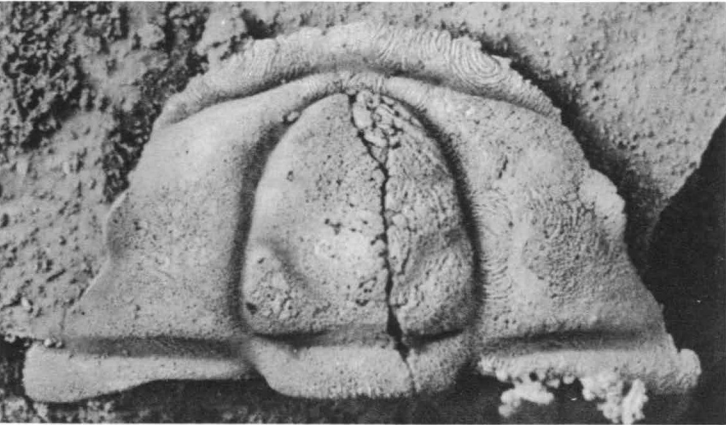
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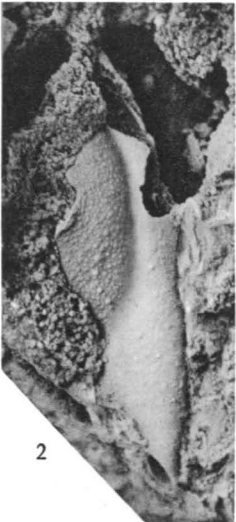
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PLATE 6

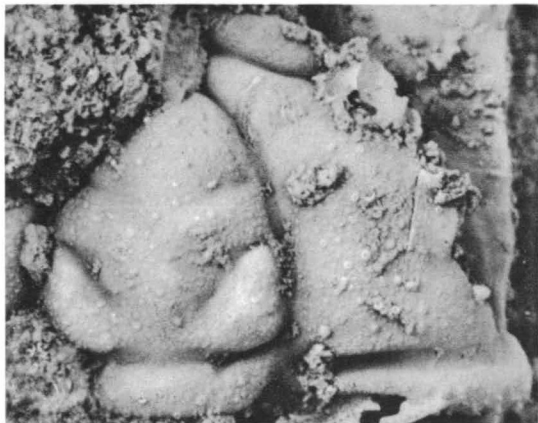
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1



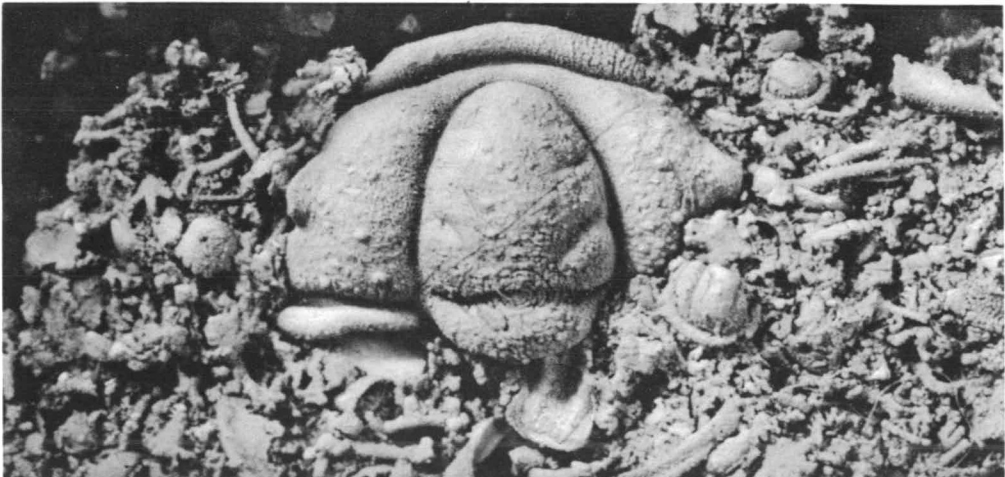
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3a



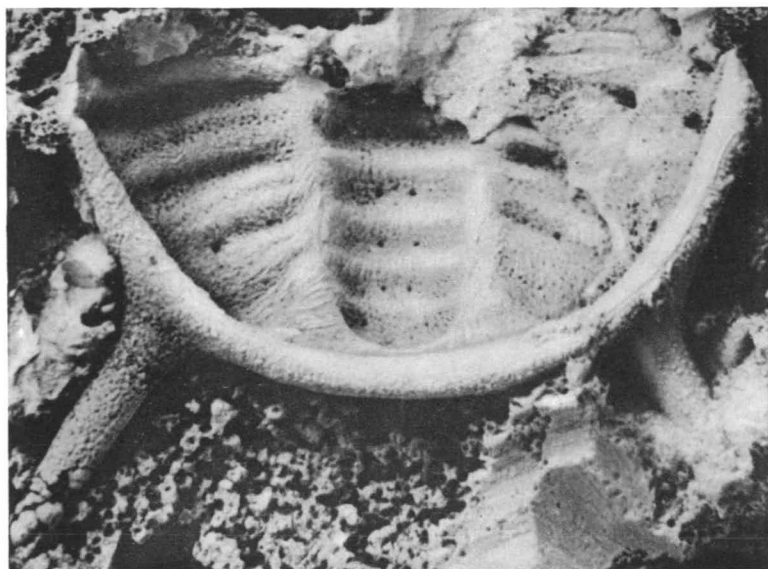
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6a



6b



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3



7



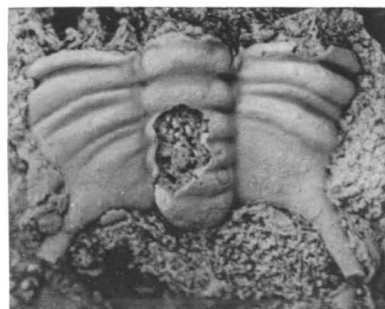
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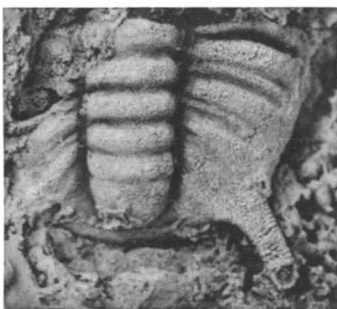
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8a



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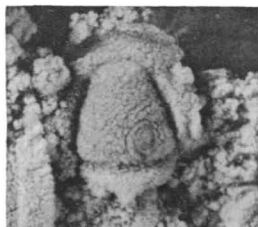
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8b

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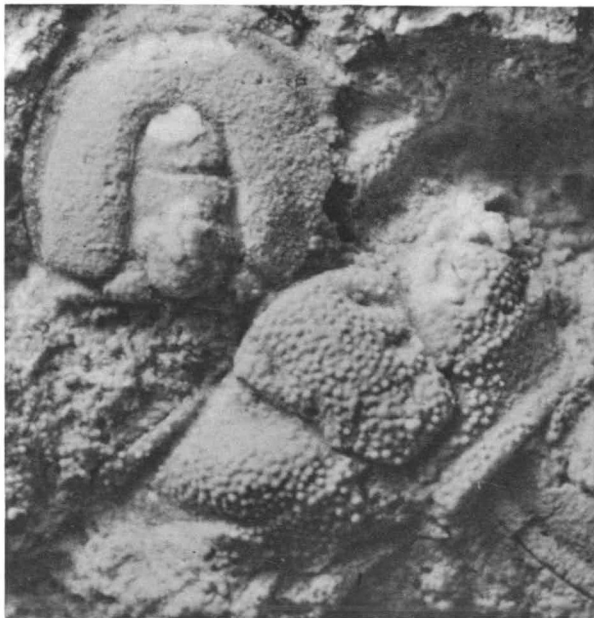
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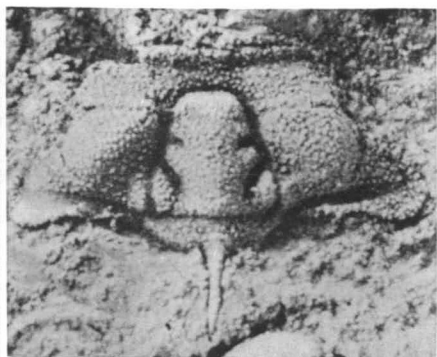
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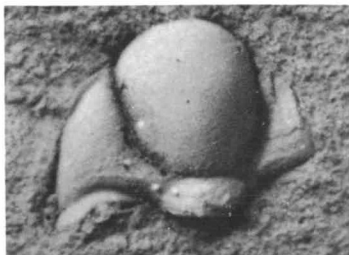
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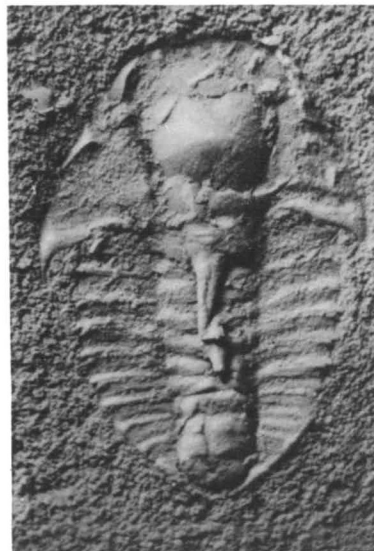
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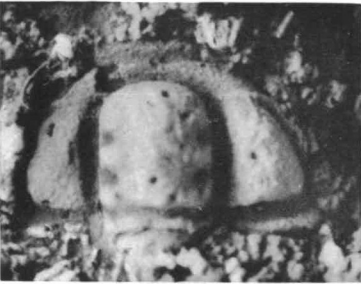
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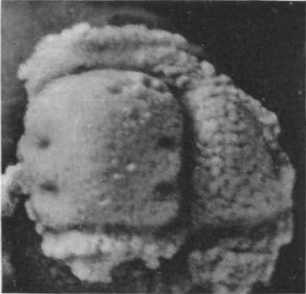
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PLATE 10

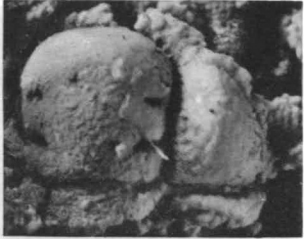
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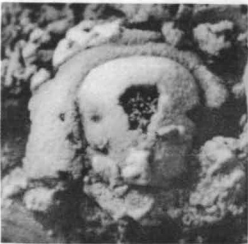
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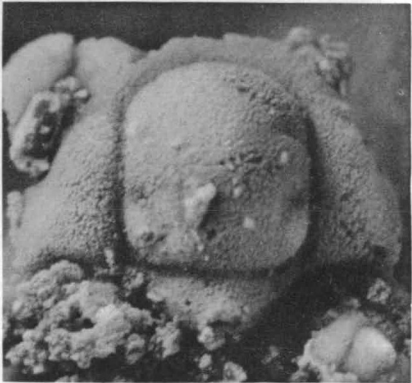
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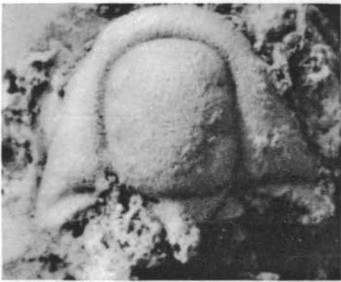
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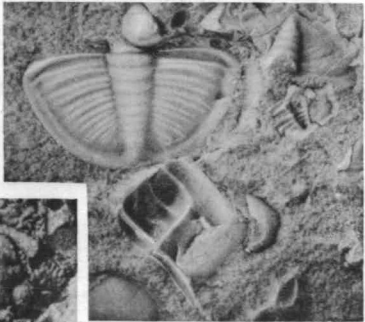
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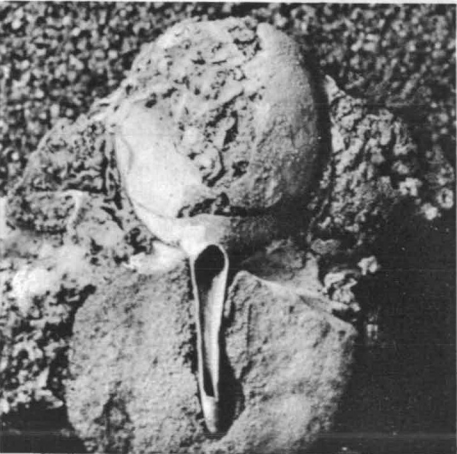
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7b



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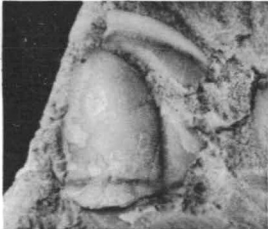
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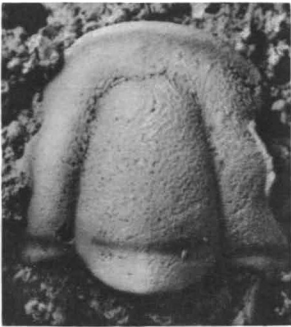
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PLATE 11

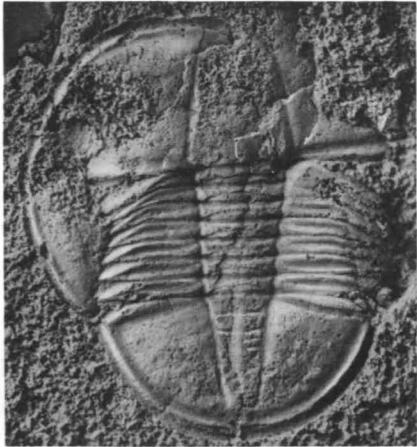
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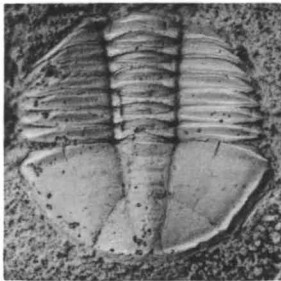
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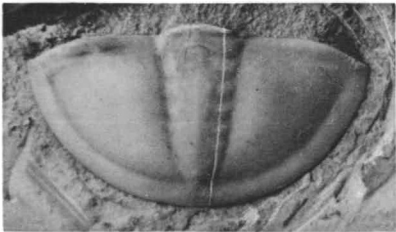
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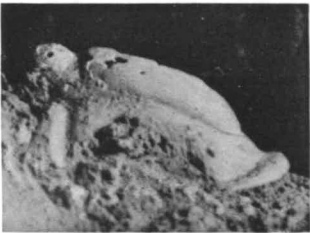
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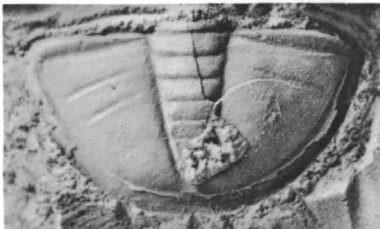
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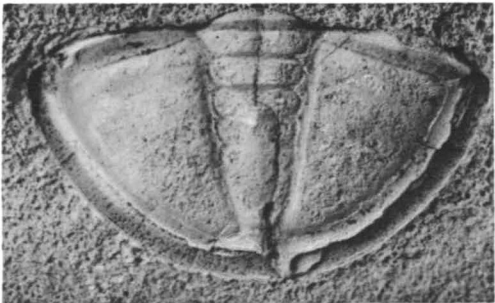
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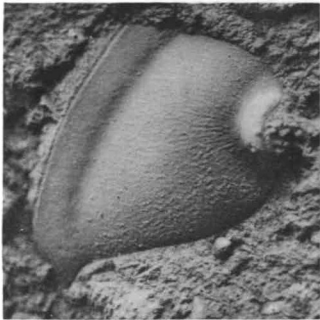
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PLATE 12

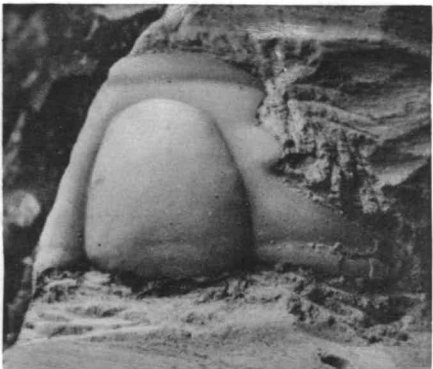
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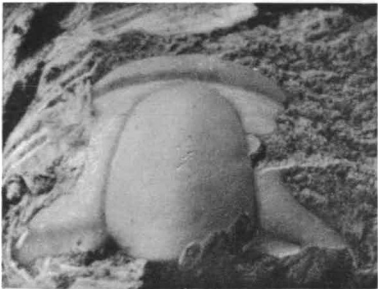
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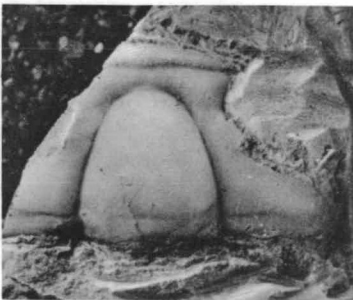
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4a



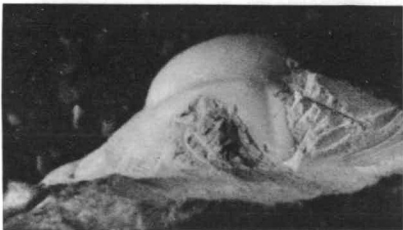
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5a



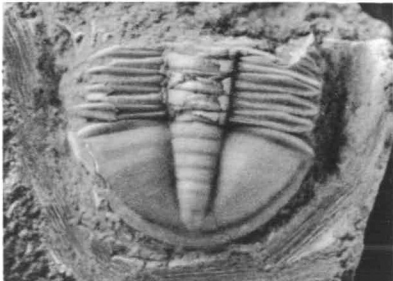
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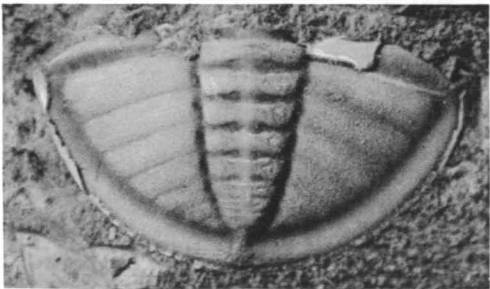
2b



5b



3



6

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3a



3b



5a



5b



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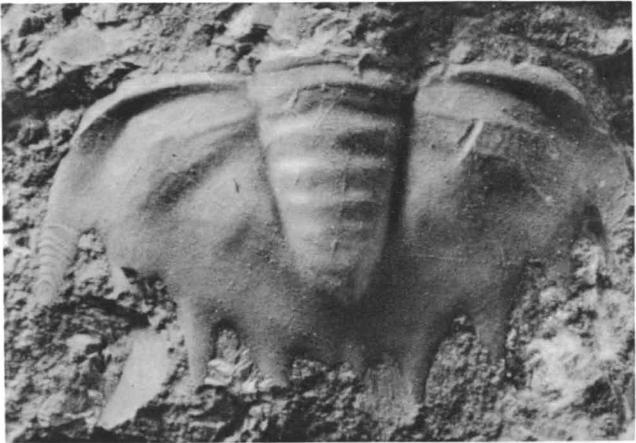
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Specimen Figure 6.—loc. D6; Figures 3–6.—loc. D29. O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	



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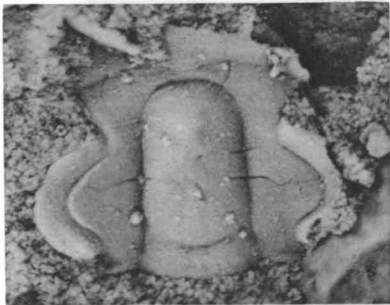
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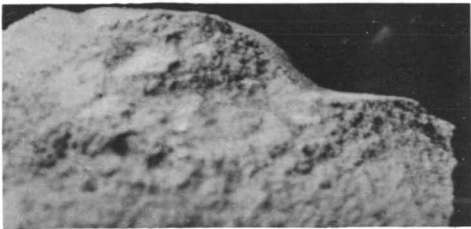
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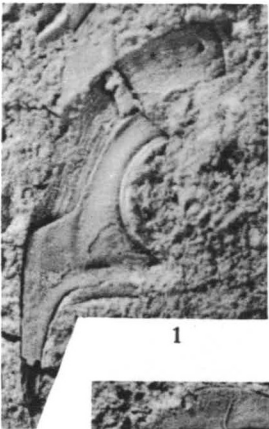
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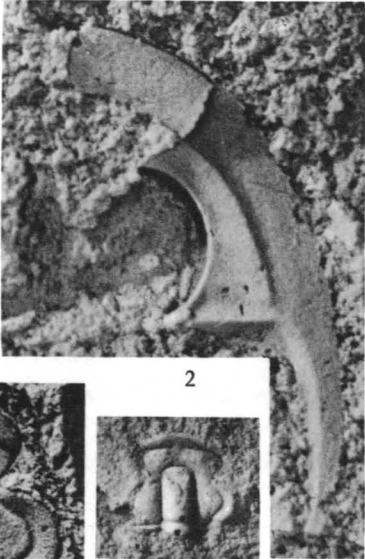
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Two specimens (Figures 5 and 6) from Georgina Limestone; all other specimens from O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	



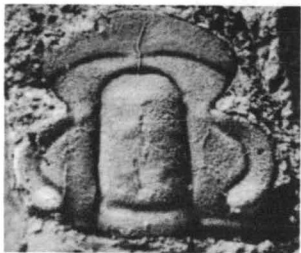
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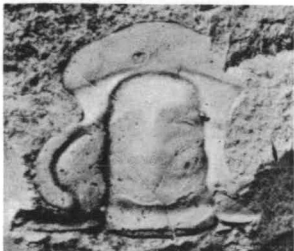
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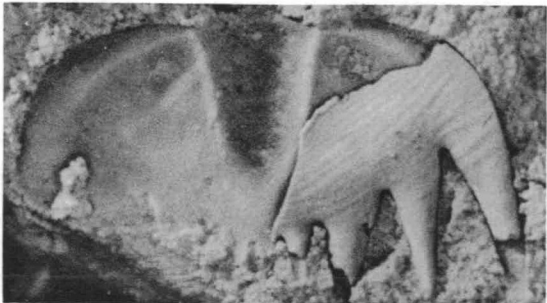
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7



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9



10

PLATE 16

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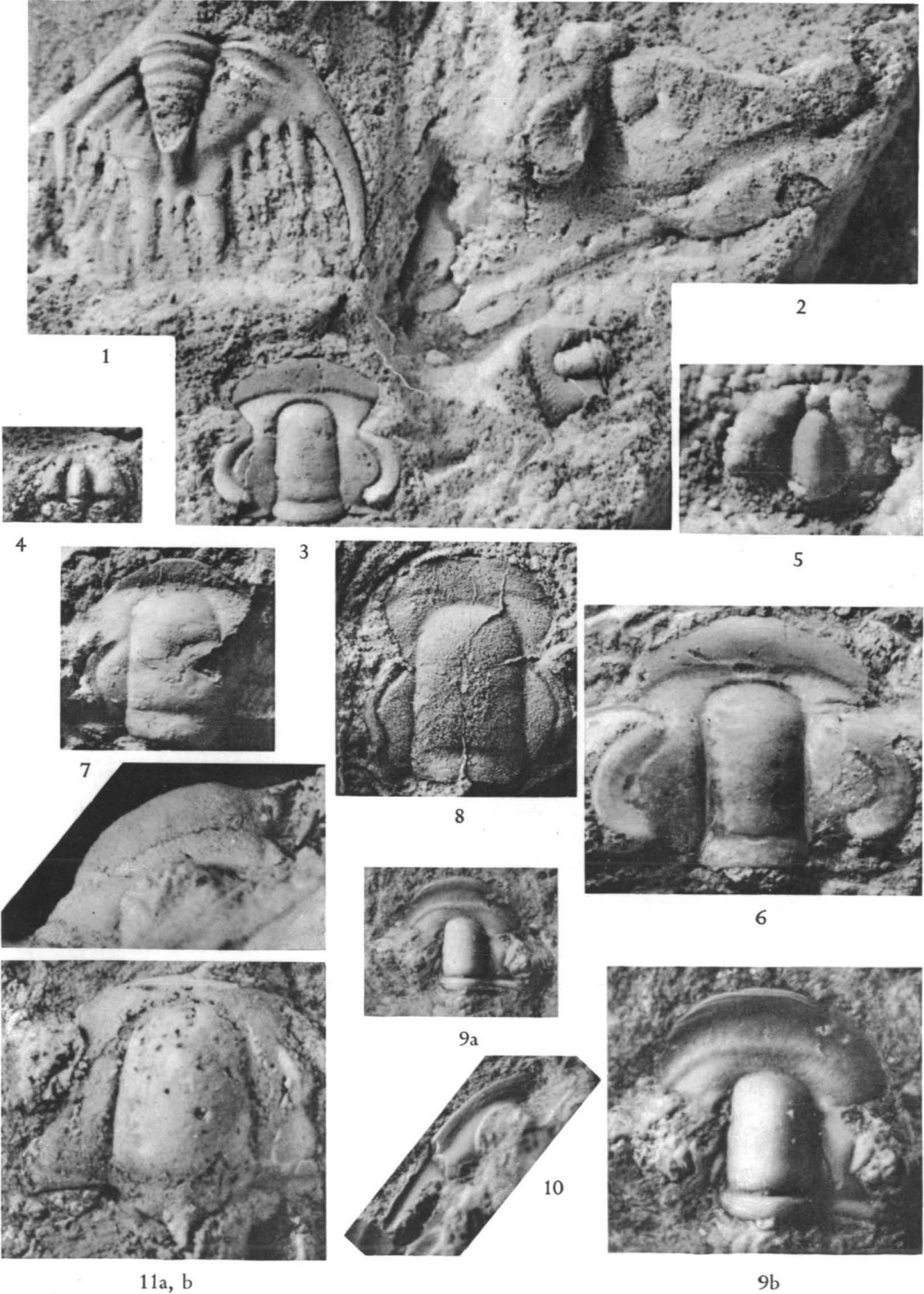
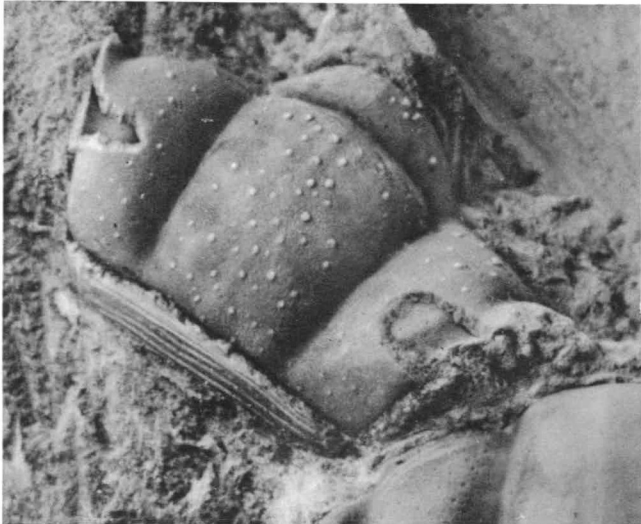


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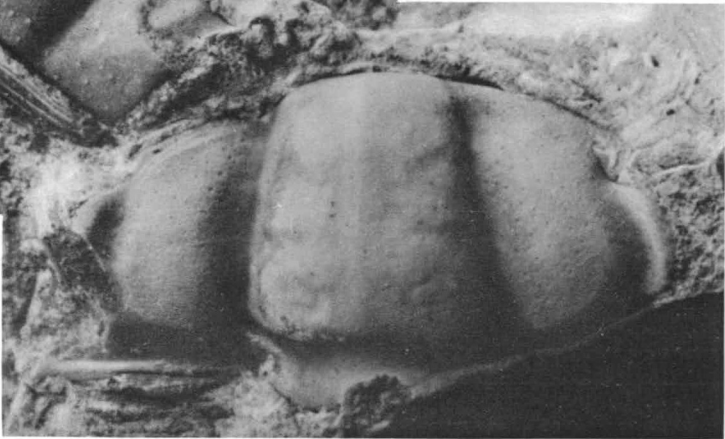
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1a



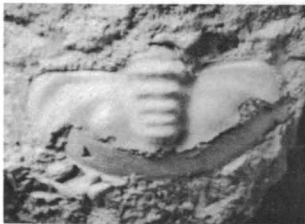
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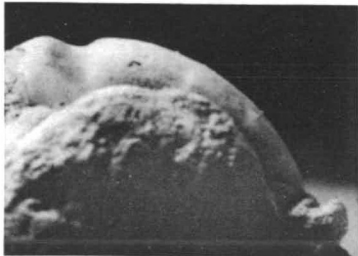
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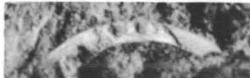
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3c



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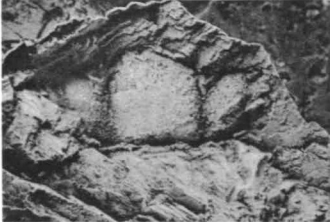
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2a



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6a



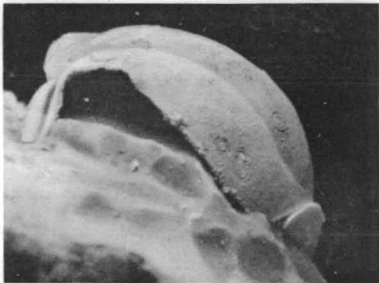
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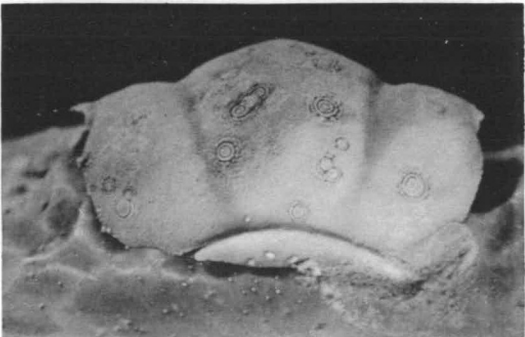
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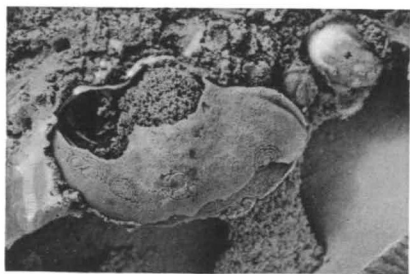
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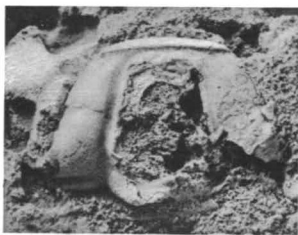
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1



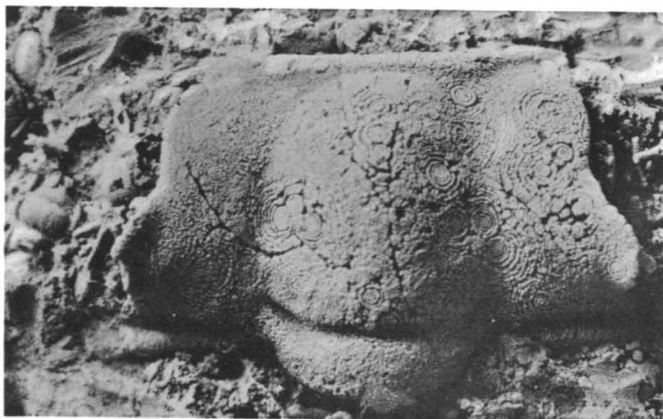
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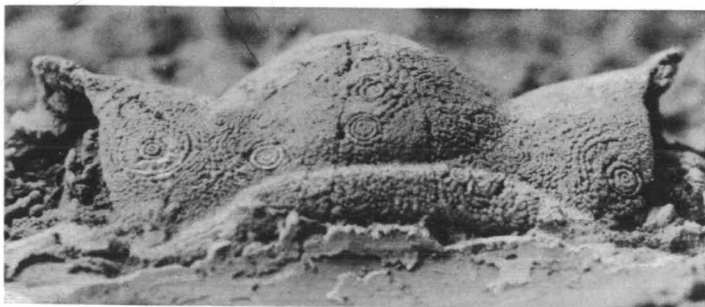
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4a



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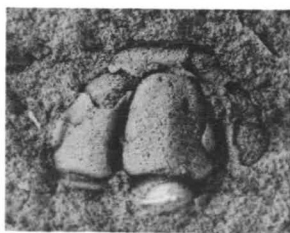
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5b



5c



6a



6b

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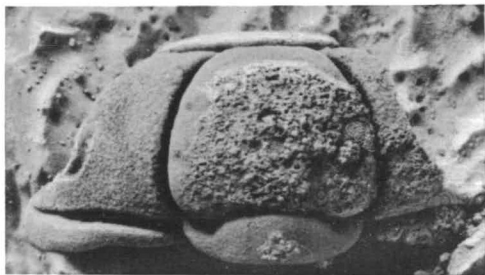
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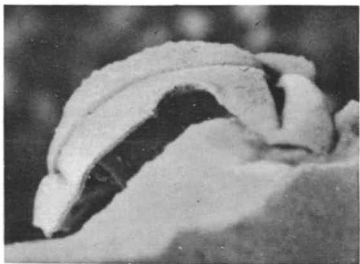
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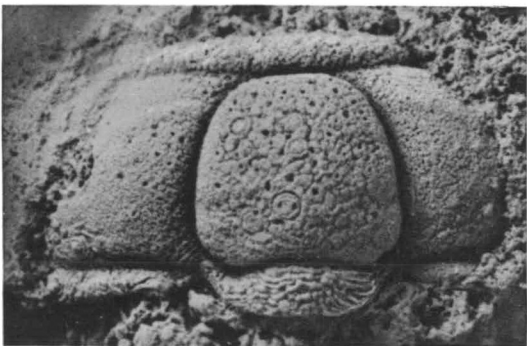
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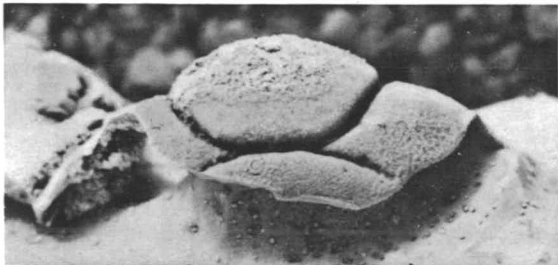
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PLATE 21

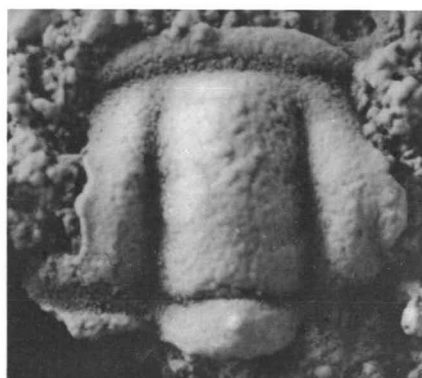
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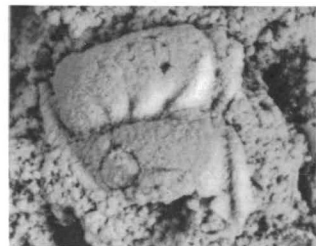
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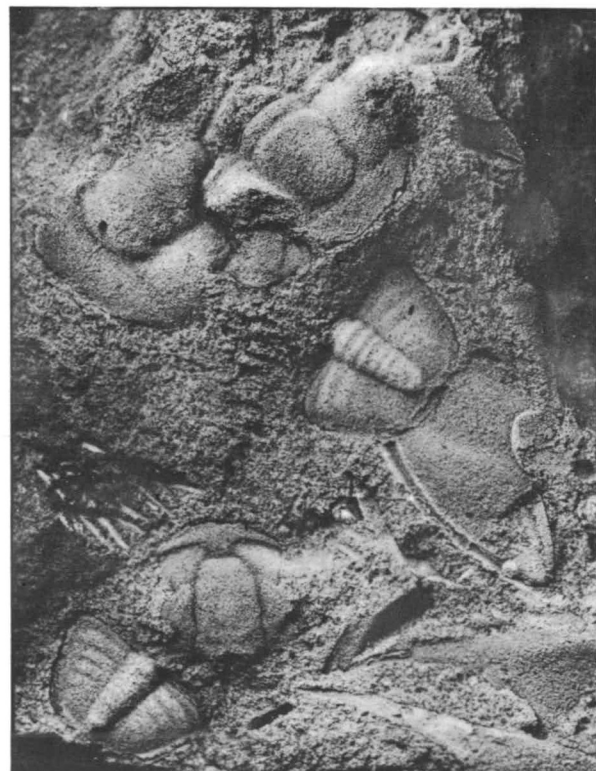
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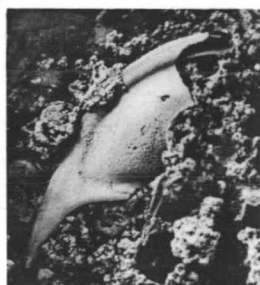
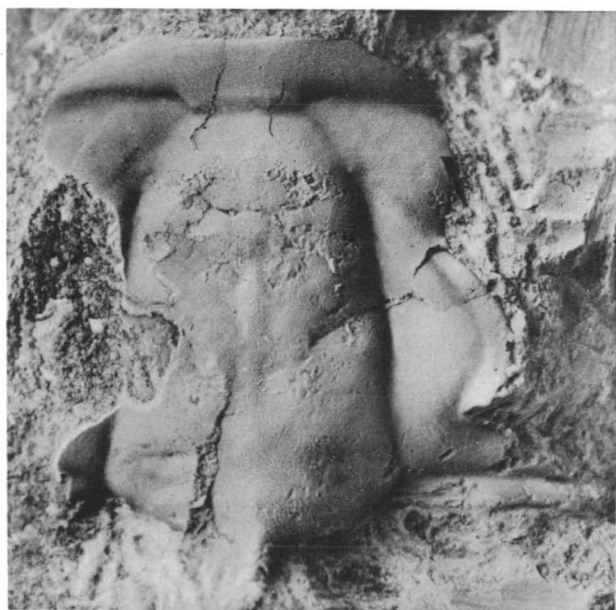
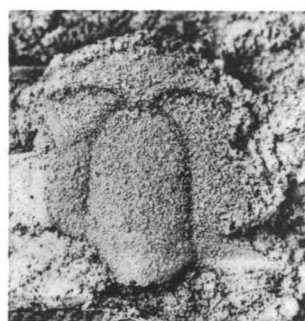
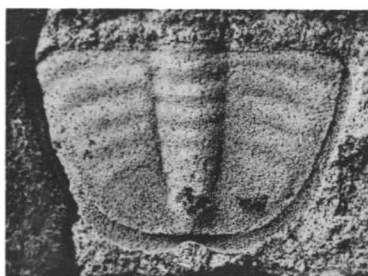
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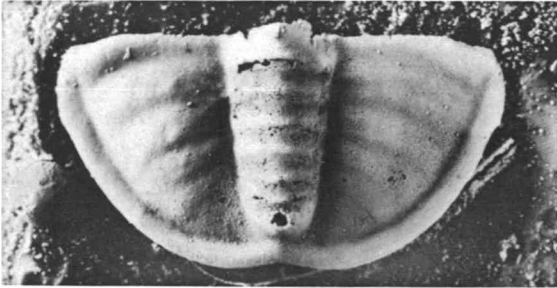
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PLATE 23

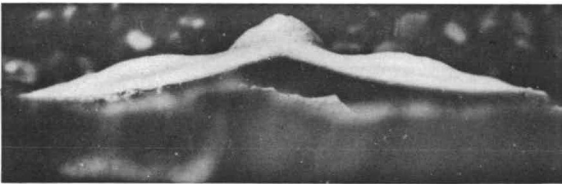
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1a



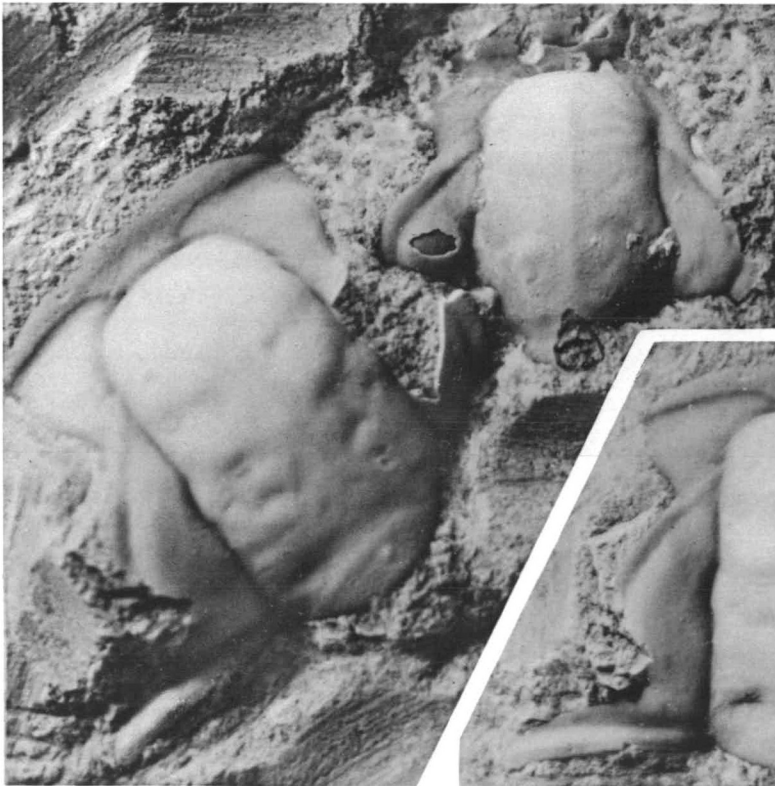
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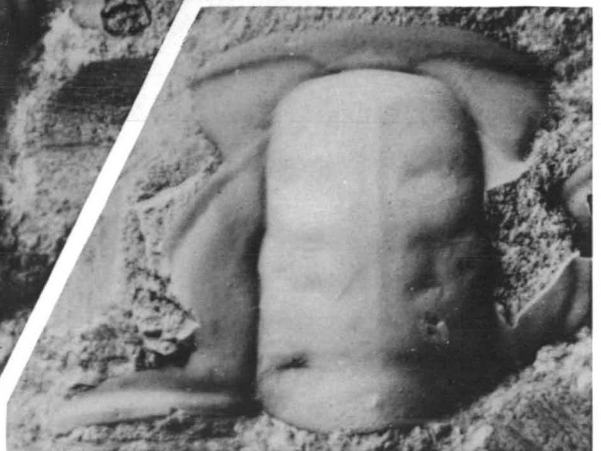
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3a



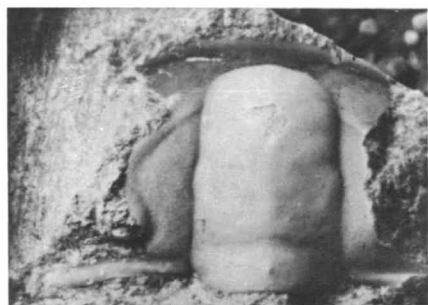
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3b

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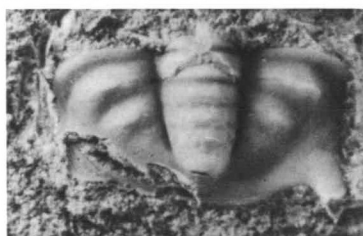
1a



1b



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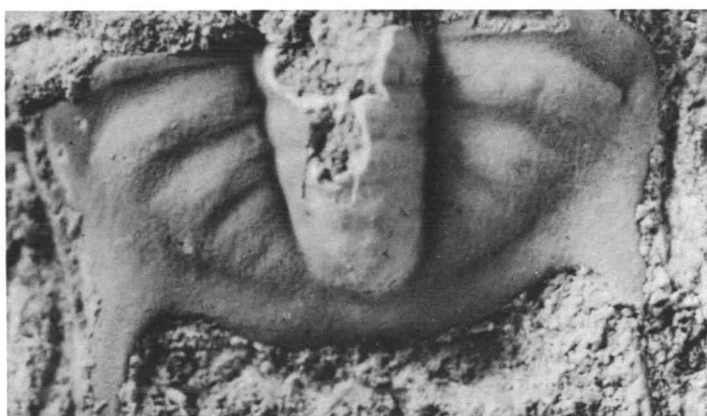
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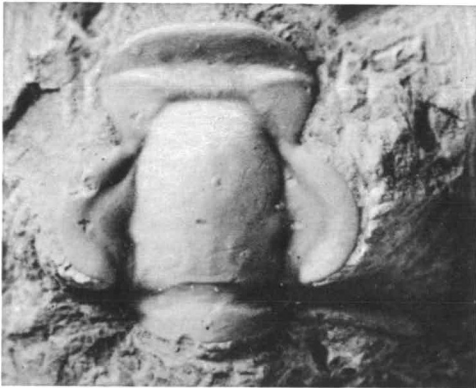
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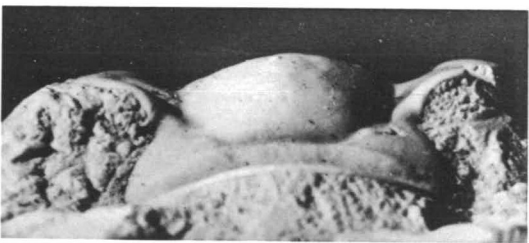
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1a



1b



1c



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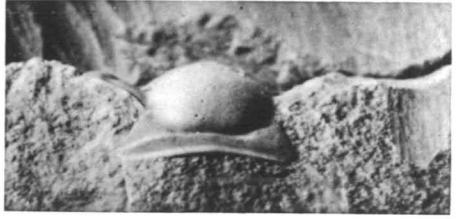
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6a



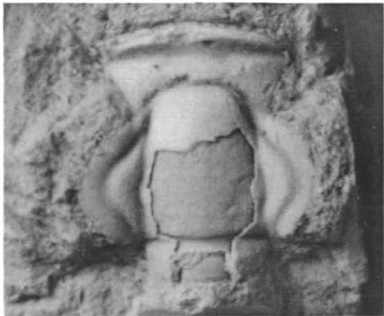
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6b

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Georgina Limestone, loc. W20, Zone of <i>Glyptagnostus stolidotus</i> .	



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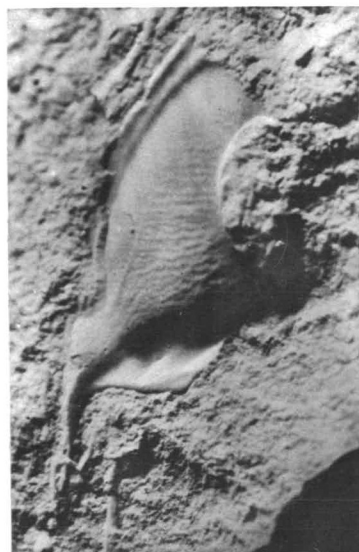
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6

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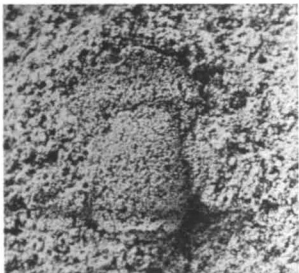
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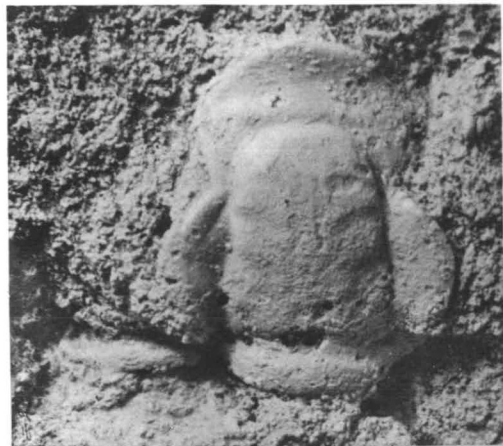
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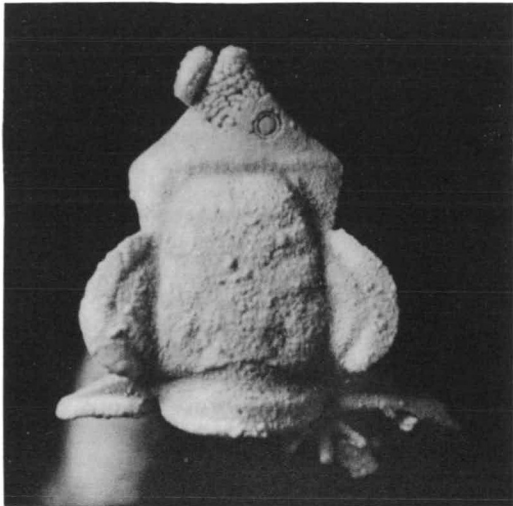
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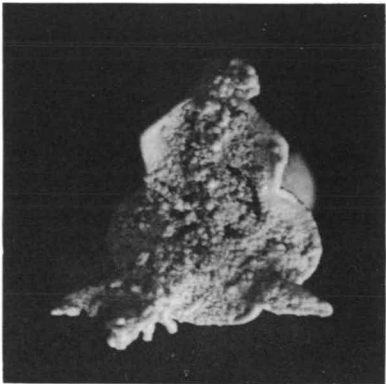
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Mungerebar Limestone, Zone of <i>Erediaspis eretes</i> .	



1a



1b



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3

PLATE 29

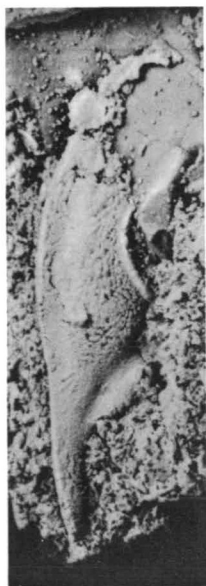
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Fig. 8.—Pygidium (x 4), rubber cast of CPC 5589, loc. G114. Mungerebar Limestone, Zone of <i>Erediaspis eretes</i> .	



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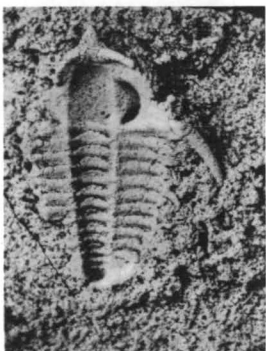
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4a



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4b



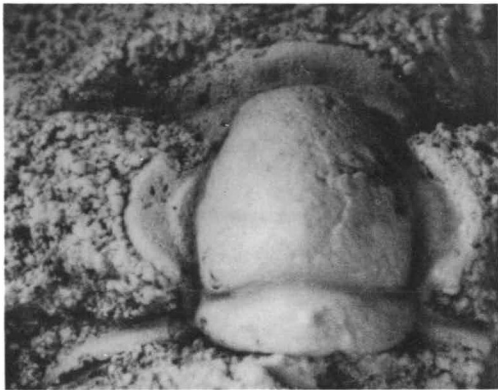
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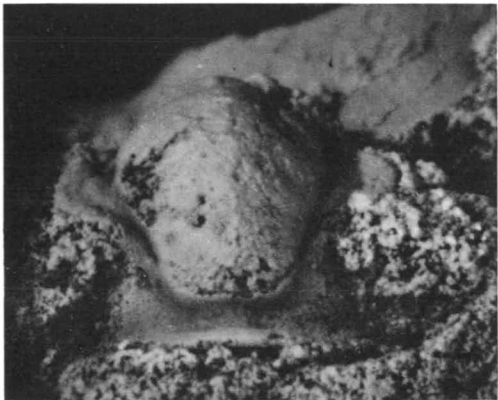
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PLATE 30

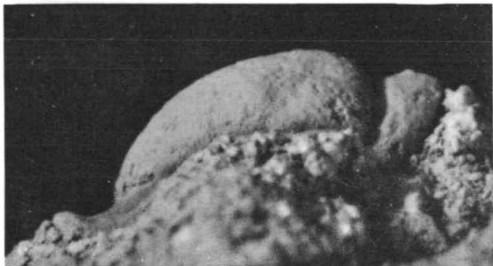
	Page
<i>Lobocephalina pyriceps</i> sp.nov.	248
Figs 1a-1c.—Cranidium, (x 10), holotype , CPC 5590.	
Fig. 2.—Cranidium (x 8), CPC 5591, the specimen is somewhat flattened.	
Fig. 3.—Cranidium (x 8), CPC 5592; associated are a free cheek of <i>Liostracina volens</i> and a pygidium of <i>Idolagnostus agrestis</i> . For other associated fossils see Plate 38, fig. 8.	
O'Hara Shale, loc. D29, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Saratogia? vetusta</i> sp.nov.	246
Fig. 4.—Cranidium (x 12), holotype , CPC 5593, loc. W20, Georgina Limestone, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Saukia? priscilla</i> sp.nov.	250
Fig. 5.—Pygidium (x 7), CPC 5594.	
Fig. 6.—Pygidium (x 7), CPC 5595, in hard chert. Figs 5 and 6.—loc. D29, O'Hara Shale.	
Fig. 7.—Pygidium (x 12), holotype , CPC 5596 in limestone, Georgina Limestone, loc. W1.	
Zone of <i>Glyptagnostus stolidotus</i> .	



1a



1b



1c



3



2



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6



4



7

PLATE 31

<i>Leichneyella caseyi</i> sp.nov.	Page 227
Figs 1a, 1b.—Cranidium (x 7 and x 6), holotype , CPC 5597; fig. 1b is rubber cast. Loc. D6. O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Leichneyella</i> sp. A.	228
Fig. 2.—Cranidium (x 3), CPC 5598, loc. G127. Mungerebar Limestone, Zone of <i>Cyclagnostus quasivespa</i> .	
<i>Paracoosia aspis</i> sp.nov.	225
Figs 3a, 3b.—Pygidium (x 2), holotype , CPC 5599; fig. 3b is rubber cast. O'Hara Shale, loc. D29, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Lophoholcus asper</i> sp.nov.	252
Figs 4a, 4b.—Cranidium (x 17 and x 18), CPC 5600, loc. D29.	
Fig. 5.—Free cheek (x 15), CPC 5601, loc. D6.	
Fig. 6.—Pygidium (x 8), CPC 5602, loc. D29.	
O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	



1a



1b



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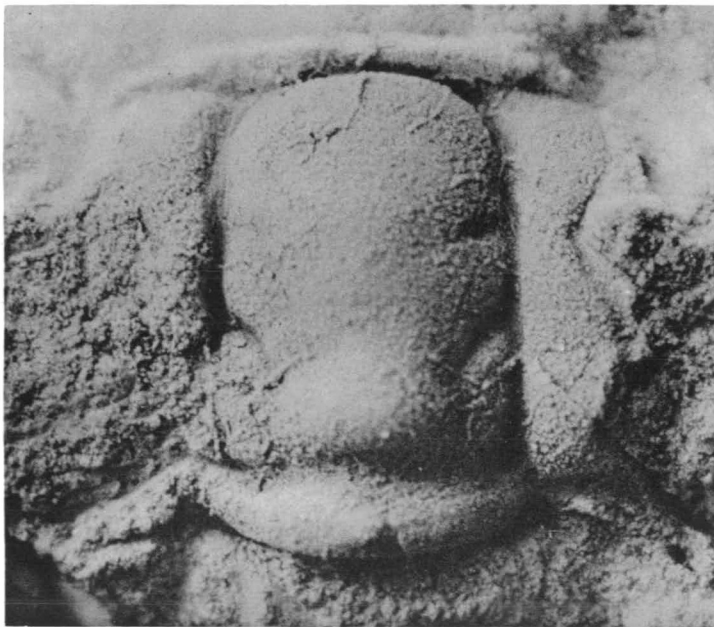
3a



3b



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4a



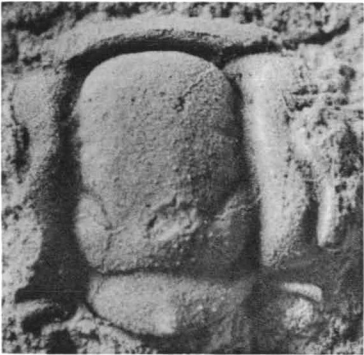
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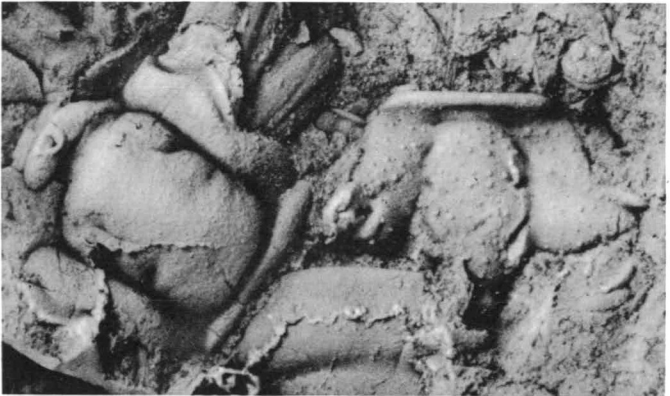
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PLATE 32

	Page
<i>Lophoholcus asper</i> sp.nov.	252
Figs 1a, 1b.—Cranidium (x 9 and x 6), holotype , CPC 5603.	
Fig. 2.—Cranidium (x 2, on the left) rubber cast of CPC 5604, on the right side of Figure 2—cranidium of <i>Blackwelderia repanda</i> sp.nov. (see below explanation of Figure 4).	
Figs 3a, 3B.—Small unformed cranidium (x 7), CPC 5606.	
Figs 4a–4c.—Cranidium (x 4 and x 10), CPC 5607; figures 4a and 4b are rubber casts; 4c.—rear part of cranidium (x 10), associated as a free cheek of <i>Auritama trilunata</i> ; same piece of rock contains the holotype of <i>Ferenepea hispida</i> , Plate 39, figs. 7a, 7b.	
<i>Blackwelderia repanda</i> sp.nov.	315
Fig. 2.—(right side)—Cranidium (x 6), CPC 5605. O'Hara Shale, loc. D29, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Nomadinis pristinus</i> sp.nov.	255
Fig. 5.—Immature cranidium (x 16), CPC 5608.	
Fig. 6.—Fragmentary pygidium (x 6), CPC 5609.	
The associated agnostid is <i>Agnostogonus incognitus</i> . O'Hara Shale, loc. D29.	
Fig. 7.—Pygidium (x 6), CPC 5610, in limestone, Georgina Limestone, loc. W1. Same specimen.	
Plate 33, figs 3a, 3b.—Zone of <i>Glyptagnostus stolidotus</i> .	



1a



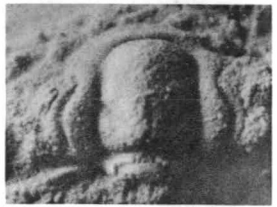
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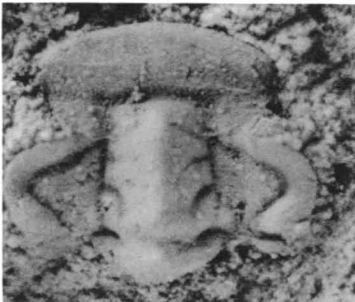
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4a



3a



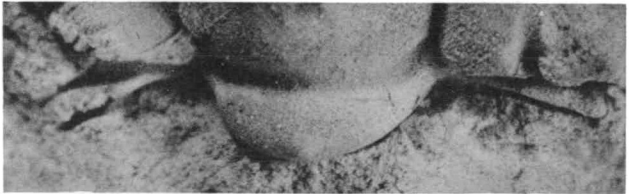
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4b



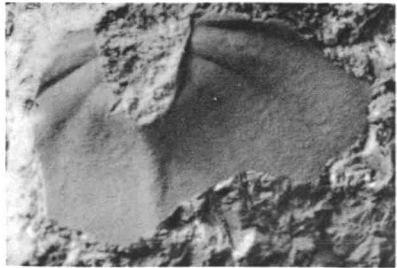
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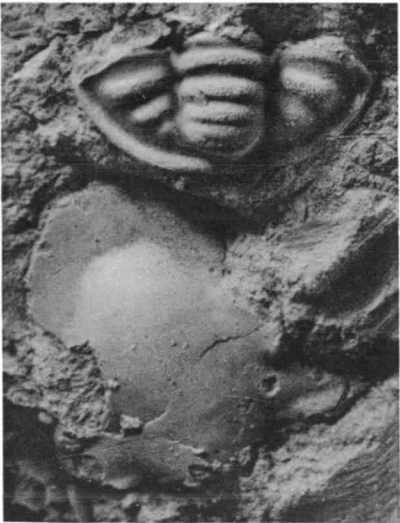
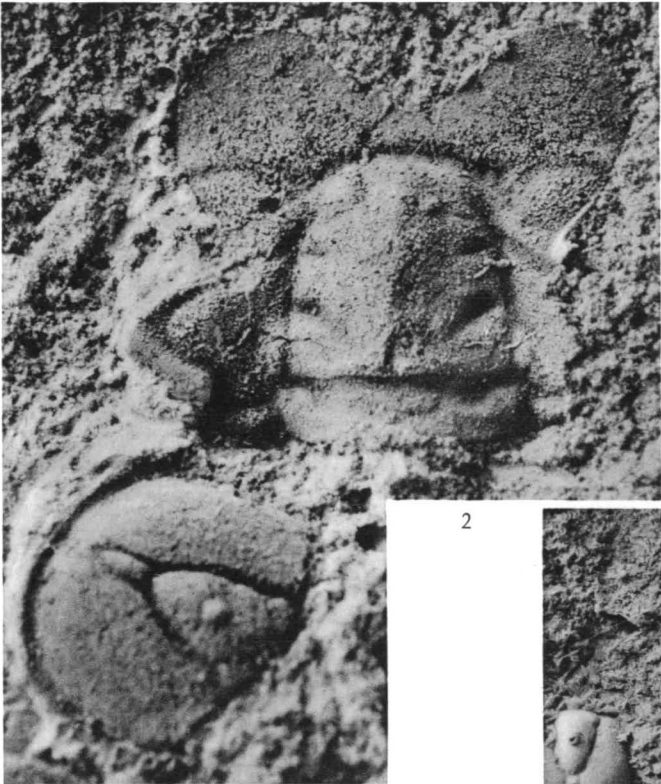
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7

PLATE 33

	Page
<i>Lophoholcus asper</i> sp.nov.	252
Fig. 1.—Cranidium (x 10), CPC 5611.	
<i>Nomadinis pristinus</i> sp.nov.	255
Fig. 2.—Cranidium (x 10), holotype , CPC 5612. Associated as a pygidium of <i>Agnostardis amplinatis</i> . Loc. D29, O'Hara Shale.	
Figs 3a, 3b.—Pygidium (x 6 and x 10) rubber cast of the specimen Plate 32, fig. 7. The lineate ornament is seen in fig. 3b. Associated is the pygidium of <i>Agnostardis amplinatis</i> , Plate 67, fig. 7.	
Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Griphasaphus griphus</i> sp.nov.	391
Fig. 4.—Cranidium (x 5.5), holotype , CPC 5613. Associated is the pygidium of <i>Rhyssometopus rhyssometopus</i> , Plate 25, fig. 4., loc. G125. Mungerebar Limestone, Zone of <i>Cyclagnostus quasivespa</i> .	

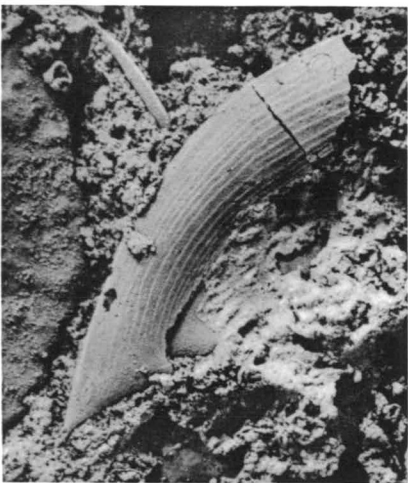


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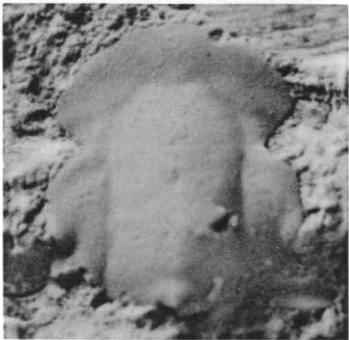
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PLATE 34

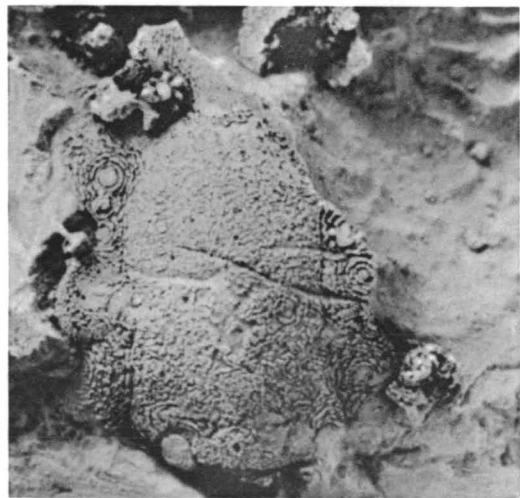
<i>Griphasaphus griphus</i> sp.nov.		Page 391
Fig. 1.—Cranidium (x 10), CPC 5614, associated with the holotype (Pl. 33, fig. 4). Loc. G125.		
Fig. 2.—Free cheek (x 5), CPC 5615, loc. G124.		
Fig. 3.—Cranidium (x 10), CPC 5616, loc. G125, associated with the holotype (Pl. 33, fig. 4).		
Fig. 4.—Cranidial fragment (x 5), CPC 5617, with preserved posterolateral limb, loc. G124.		
Fig. 5.—Silicified cranidium (x 4), CPC 5618, loc. G124.		
Fig. 6.—Pygidium (x 5), CPC 5619, loc. G124.		
Fig. 7.—Pygidium (x 2·5), CPC 5620, partly immersed in chert, loc. G124. Mungerebar Limestone, Zone of <i>Cyclagnostus quasivespa</i> .		



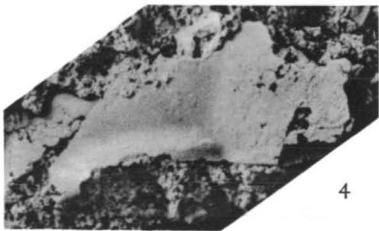
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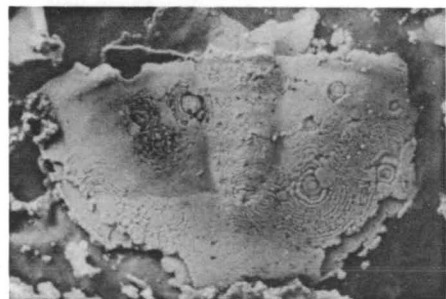
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PLATE 35

	Page
<i>Liostracina volens</i> sp.nov.	353
Fig. 1.—Cranidium (x 12), rubber cast of holotype , CPC 5621; porous chert.	
Fig. 2.—Cranidium (x 12), CPC 5622, friable silica.	
Fig. 3.—Cranidium (x 10), CPC 5623, friable silica.	
Fig. 4.—Free cheek (x 10), CPC 5624 externally decorticated.	
Fig. 5.—Free cheek (x 8), CPC 5625, ventral side.	
O'Hara Shale, loc. D29, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Liostracina nolens</i> sp.nov.	355
Fig. 6.—Cranidium (x 8), holotype , CPC 5626, loc. W1.	
Fig. 7.—Cranidium (x 7), CPC 5627, loc. W1.	
<i>Lynaspis noakesi</i> sp.nov.	356
Fig. 8.—Cranidium (x 10), holotype , CPC 5628, loc. W20. Georgina Limestone, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Doremataspis ornata</i> sp.nov.	357
Fig. 9.—Cranidium (x 12), CPC 5629, loc. D29. O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	



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3



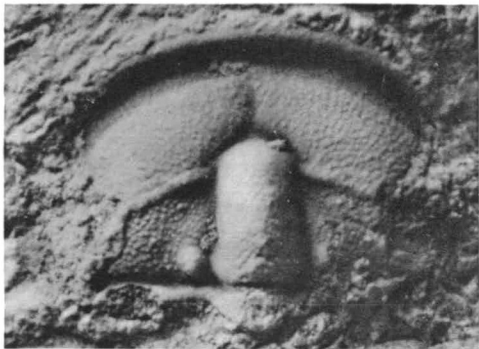
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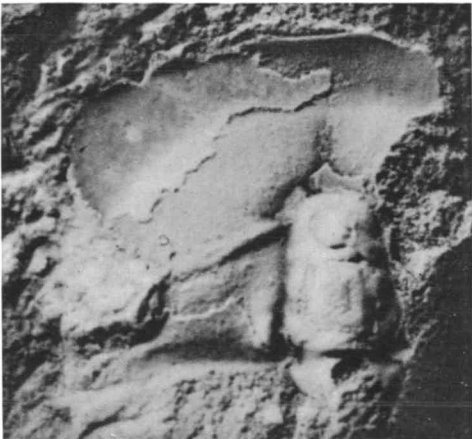
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PLATE 36

	Page
<i>Doremataspis ornata</i> sp.nov.	357
Fig. 1.—Cranidium (x 12), CPC 5630.	
Fig. 2.—Cephalon (x 12), CPC 5631, in friable silica.	
Fig. 3.—Fragmentary cephalon (x 8), CPC 5632, loc. D6.	
Fig. 4.—Cranidium (x 8), rubber cast of holotype, CPC 5633.	
Fig. 5.—Partly decorticated free cheek (x 12), CPC 5634.	
Fig. 6.—Pygidium (x 10), CPC 5635, attributed to <i>D. ornata</i> .	
Specimens Figures 1, 2, and 4–6 from loc. D29. O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Brassicicephalus</i> sp.ind.	347
Fig. 7.—Cranidium (x 16), CPC 5636.	
Figs 8a–8c.—Cranidium (x 10), CPC 5637.	
Loc. D29. O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Larva</i> , gen.indet. et sp.indet.	387
Fig. 9.—Cephalon (x 20), CPC 5638.	
Fig. 10.—Complete shield (x 50), CPC 5639.	
Fig. 11.—Complete shield (x 50), CPC 5640.	
Fig. 12.—Fragmentary cephalon (x 20), CPC 5641.	
Loc. G48. Georgina Limestone, Zone of <i>Glyptagnostus stolidotus</i> .	

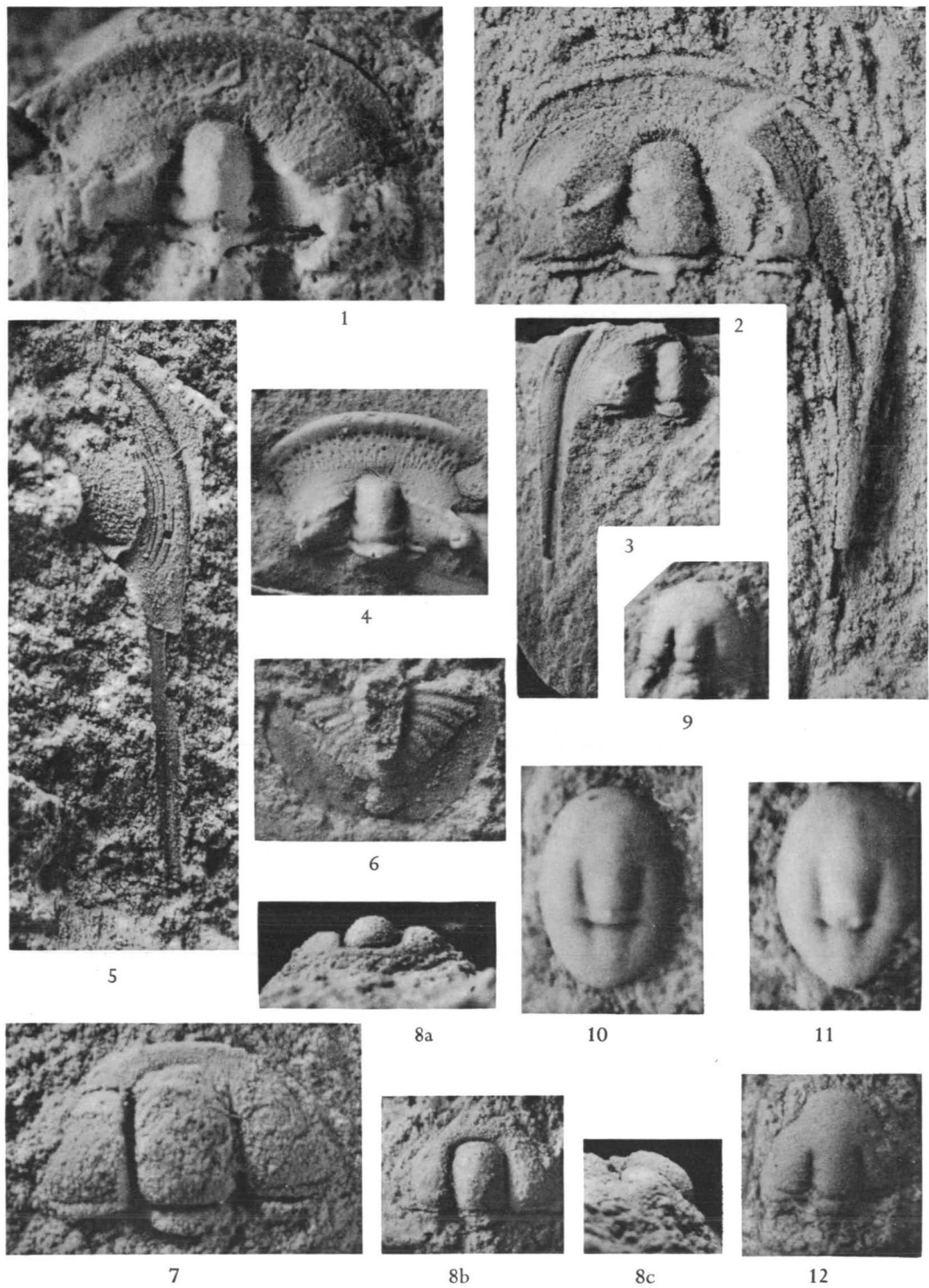
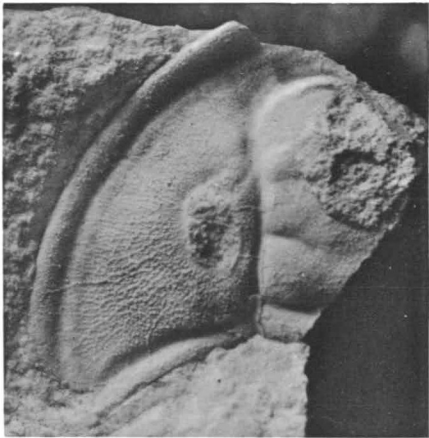


PLATE 37

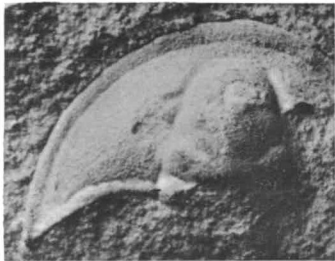
<i>Henadoparia integra</i> sp.nov.	Page 348
Figs 1a, 1b.—Cephalon (x 8 and x 6), holotype , CPC 5642. Fig. 1a is a rubber cast; loc. D6.	
Fig. 2.—Fragmentary cephalon (x 8), CPC 5643.	
Fig. 3.—Cephalon (x 9), CPC 5644, loc. D6.	
Fig. 4.—Fragment of cephalon (x 10), CPC 5645, loc. D29.	
Fig. 5.—Pygidium (x 8), CPC 5646, attributed to <i>H. integra</i> ; loc. D29. O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Biaverta biaverta</i> sp.nov.	368
Fig. 6.—Cranidium (x 17), rubber cast of holotype, CPC 5647, loc. D29. O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	



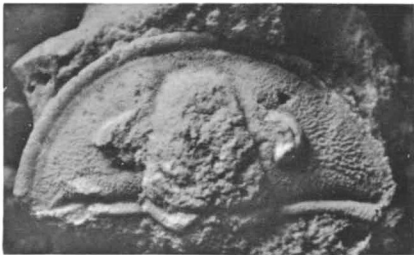
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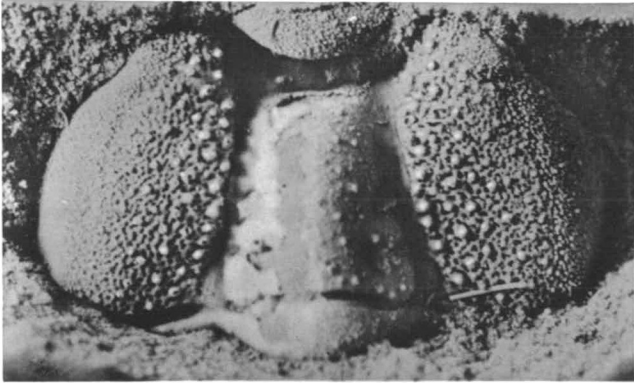
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PLATE 38

	Page
<i>Biaverta biaverta</i> sp.nov.	368
Figs 1a-1b.—Cranidium (x 14), rubber cast of CPC 5648. Note the rudimentary right palpebral lobe.	
Figs 2a-2c.—Cranidium (x 10), CPC 5649.	
Fig. 3.—Cranidium (x 20), rubber cast of CPC 5650.	
Fig. 4.—Cranidium (x 10), CPC 5651.	
Fig. 5.—Free cheek (x 10), CPC 5652.	
Fig. 6.—Fragmentary cranidium (x 5), CPC 5653, in limestone, loc. W21 (Georgina Limestone).	
Figs 7a-7b.—Immature cranidium (x 10 and x 25), CPC 5654.	
Fig. 8.—Three cranidia (x 6), CPC 5658 (above), 5657, and 5655 (below). Associated (on the left)— <i>Pseudagnostus bulgosus</i> , pygidium, CPC 5656; on the right—a pygidium of <i>Xestagnostus legirupa</i> .	
Fig. 9.—Fragmentary cranidium (x 10), CPC 5659.	
All specimens (Fig. 6 excepted; q.v.) from loc. D29, O'Hara Shale. Zone of <i>Glyptagnostus stolidotus</i> .	



1a



1b



3



2b



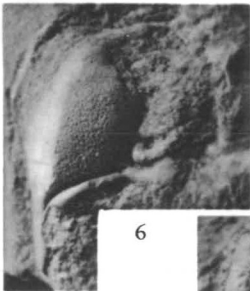
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2a



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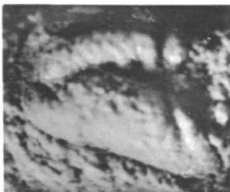
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7a



5



7b



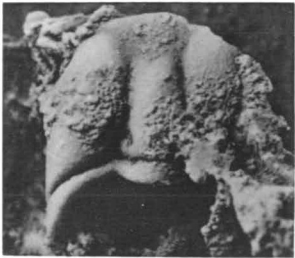
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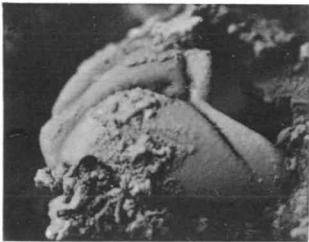
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PLATE 39

	Page
<i>Biaverta reineri</i> sp.nov.	371
Figs 1a-1b.—Cranidium (x 8), holotype , CPC 5660, loc. G119.	
Fig. 2.—Cranidium (x 7), CPC 5661, loc. G417.	
Fig. 3.—Cranidium (x 7), CPC 5662, resting on a pygidium of <i>Meringaspis</i> . Loc. G119.	
Fig. 4.—Cranidium (x 10), CPC 5663, loc. G8.	
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<i>Norwoodella? dubitalis</i> n.sp.	361
Fig. 6.—Cranidium (x 15), holotype , CPC 5665, loc. G429. Mungerebar Limestone, Zone of <i>Erediaspis eretes</i> .	
<i>Ferenepea hispida</i> sp.nov.	362
Figs 7a-7b.—Cranidium (x 16), holotype , CPC 5666; Figure 7b is rubber cast.	
Fig. 8.—Decorticated cranidium (x 10), CPC 5667. O'Hara Shale, loc. D29, Zone of <i>Glyptagnostus stolidotus</i> .	



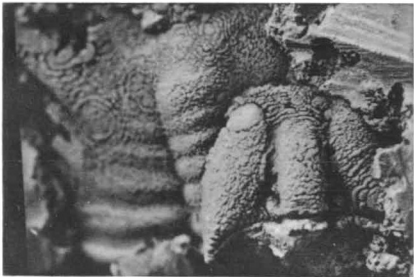
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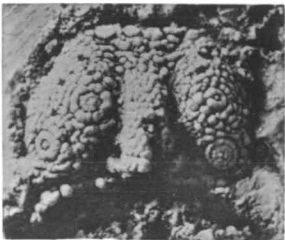
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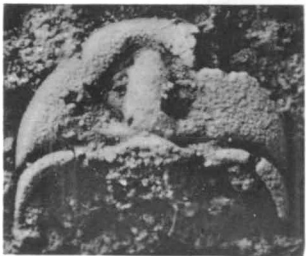
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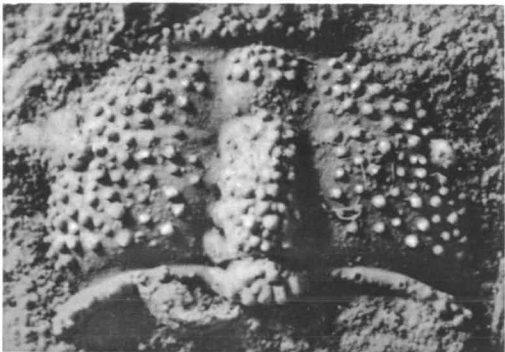
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7a



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7b



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PLATE 40

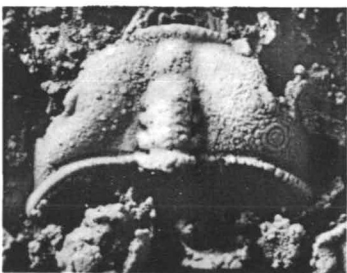
	Page
<i>Ferenepea hispida</i> sp.nov.	362
Figs 1a–1b.—Free cheek unit (x 6), CPC 5668, loc D29. O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Ferenepea pilaris</i> sp.nov.	364
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<i>Ascionepea janitrix</i> sp.nov.	365
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<i>Ascionepea anitys</i> sp.nov.	366
Fig. 4.—Cranidium (x 8), CPC 5671, loc. G119. Associated as a pygidium of <i>Grandagnostus evexus</i> .	
Fig. 5.—Cranidium (x 10), CPC 5672, loc. G8.	
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<i>Ascionepea</i> sp.aff. <i>anitys</i>	366
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<i>Aulacodigma quasispinale</i> sp.nov.	374
Fig. 8.—Complete specimen (x 10), CPC 5675.	
Fig. 9.—Complete specimen (x 10), holotype , CPC 5676. Georgina Limestone, loc. W20, Zone of <i>Glyptagnostus stolidotus</i> .	



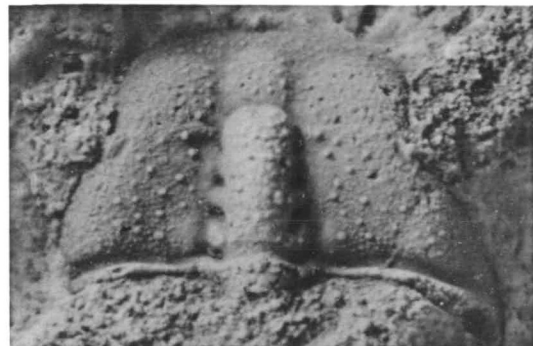
1a



1b



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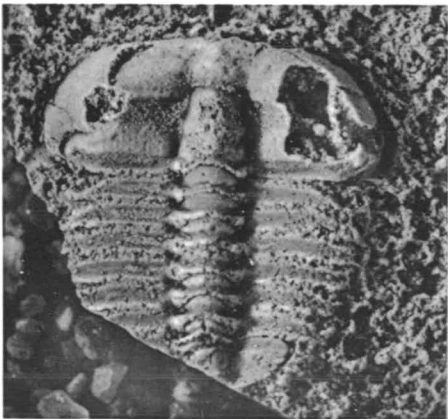
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PLATE 41

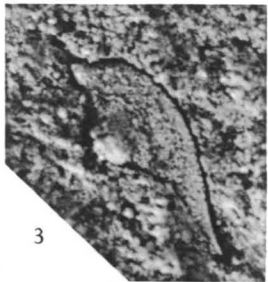
	Page
<i>Aulacodigma quasispinale</i> sp.nov.	374
Fig. 1.—Pygidium and part of thorax (x 12), CPC 5677. Fig. 2.—Cephalon (x 5), rubber cast of CPC 5678. Fig. 3.—Free cheek (x 10), CPC 5679. O'Hara Shale, loc D29. Fig. 4.—Cephalon (x 10), rubber cast of CPC 5680, loc. W20. Georgina Limestone. Fig. 5.—Cephalon (x 15), CPC 5681. Fig. 6.—Cranidium (x 15), CPC 5682. Fig. 7.—Cranidium (x 15), CPC 5683. Fig. 8.—Cephalon (x 15), CPC 5684. Figs 9a-9b.—Cephalon (x 20), CPC 5685. It is associated with a cephalon of <i>Agnostardis</i>. Fig. 10.—Cephalon (x 15), CPC 5686.	
<i>Aspidagnostus inquilinus</i> sp.nov.	120
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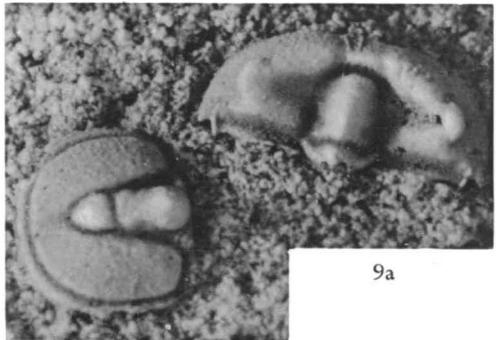
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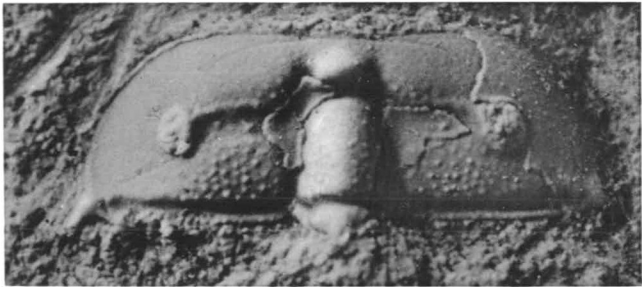
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PLATE 42

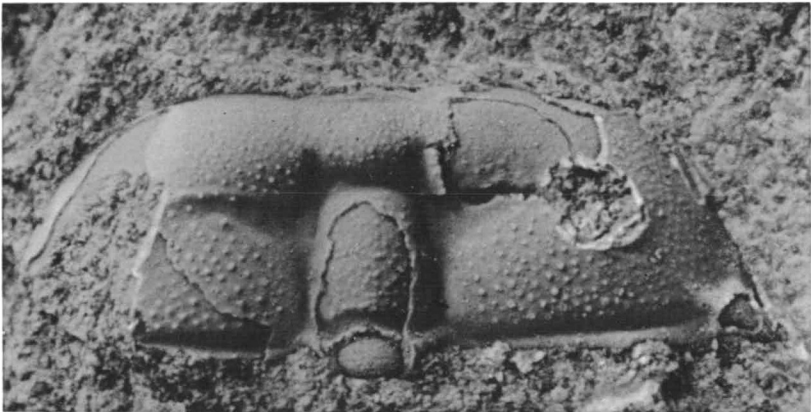
	Page
<i>Aulacodigma illimbatum</i> sp.nov.	377
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1a



1b



2



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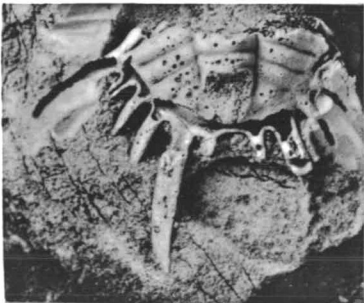
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8



7



6

PLATE 43

<i>Dipentaspis dipentas</i> sp.nov.	Page 329
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Collection (locality) No. 41621, Frome Broken Hill Pty Ltd, in vicinity of D96.	
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Steamboat Sandstone, the Middle Cambrian Zone of <i>Leiopyge laevigata</i> .	



1a



1b



7a



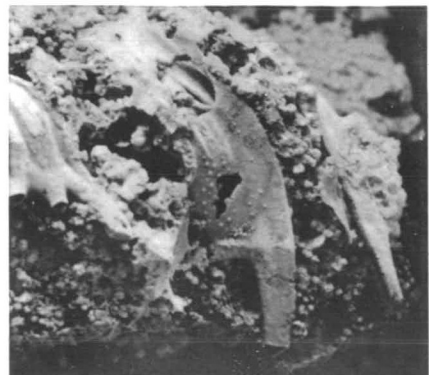
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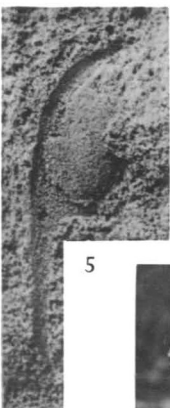
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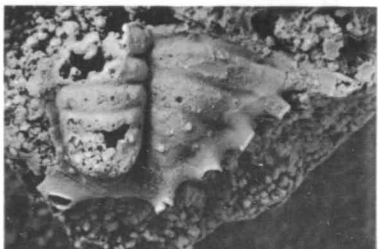
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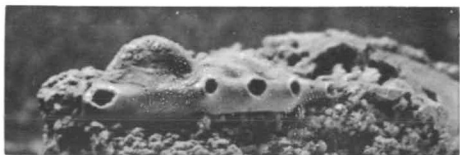
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5



6a



6b

PLATE 44

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<i>Histiomona oculosa</i> sp.nov.	336
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Loc. D29. O'Hara Shale, Zone of <i>Glyptagnostus reticulatus</i> .	

* Erroneous repetition of the numeral '6'.



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5a



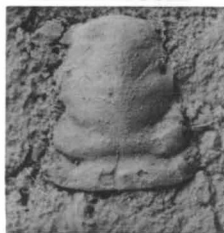
4a



4b



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6



5b



8



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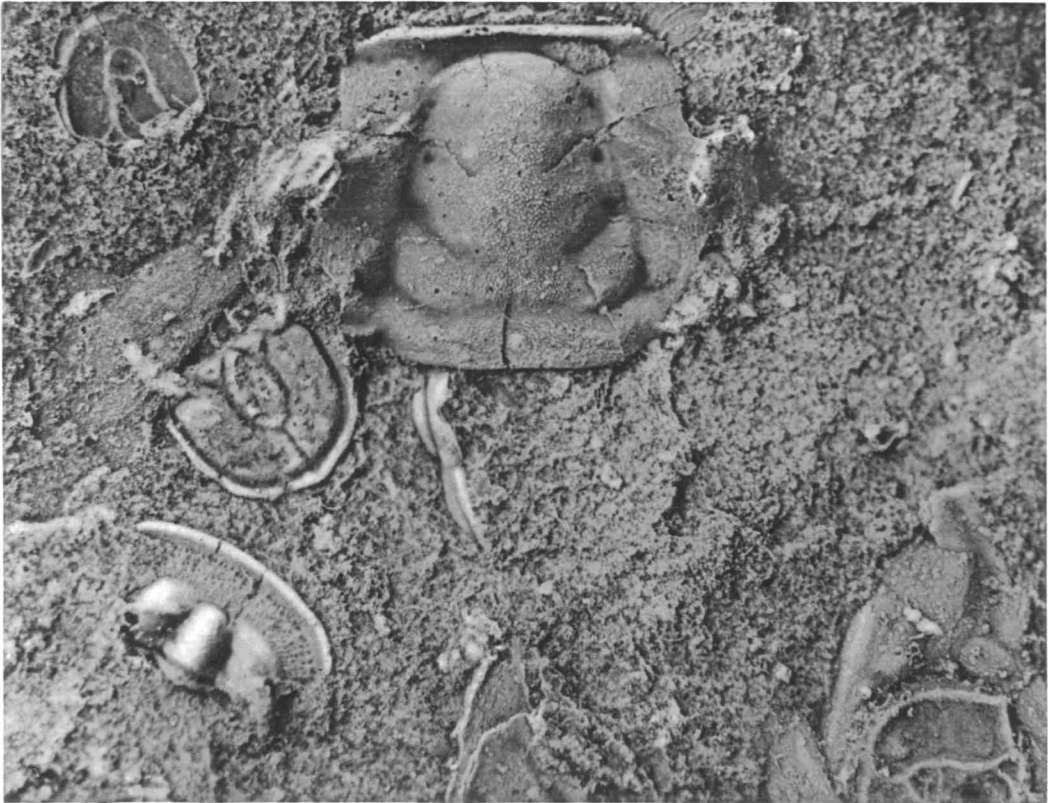
5c



6

PLATE 45

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1



2

PLATE 46

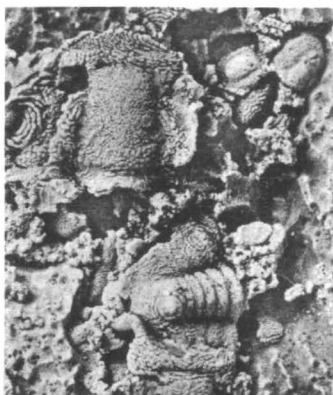
	Page
<i>Meringaspis</i> sp. B.	326
Fig. 1.—Cranidium (x 4), CPC 5717, loc. G131.	
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Figs 6a–6c.—Cranidium (x 3, x 1·5 and x 2), holotype , CPC 5724, loc. G127.	
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Fig. 8.—Cranidium (x 3), CPC 5726. Inside view showing frontal doublure. Mungerebar Limestone, Zone of <i>Cyclagnostus quasivespa</i> .	



1



2



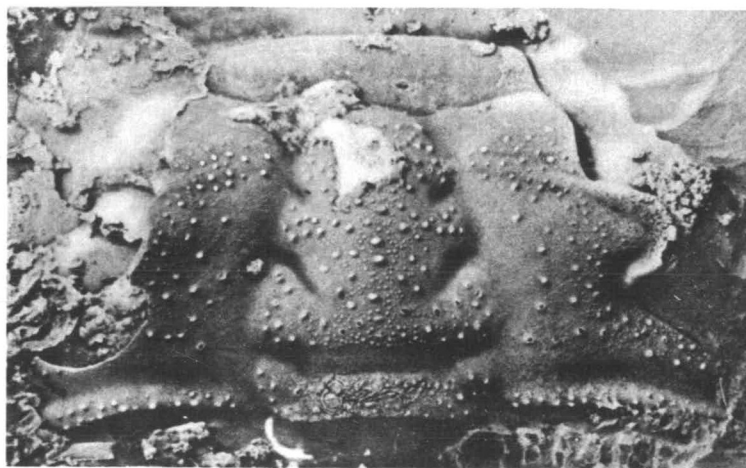
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6a



7



6b



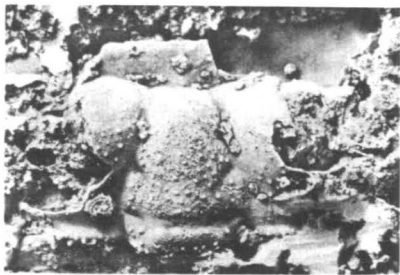
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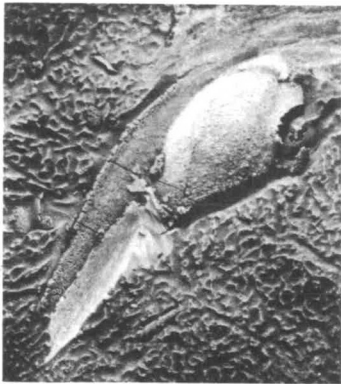
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PLATE 47

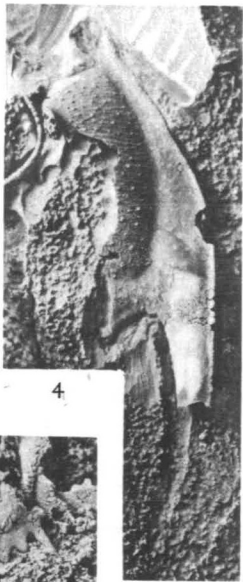
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Fig. 1.—Cranidium (x 2), CPC 5727.	
Fig. 2.—Cranidium (x 3), CPC 5728, buried in silica, shows well preserved ornament.	
Fig. 3.—Free cheek (x 1·5), CPC 5729.	
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Fig. 5.—Hypostoma (x 2), CPC 5731, inside, filled with silica.	
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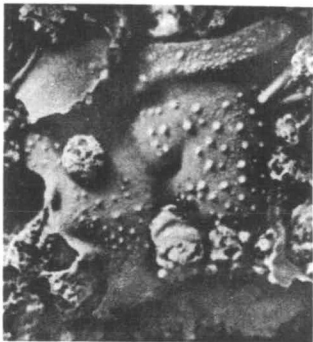
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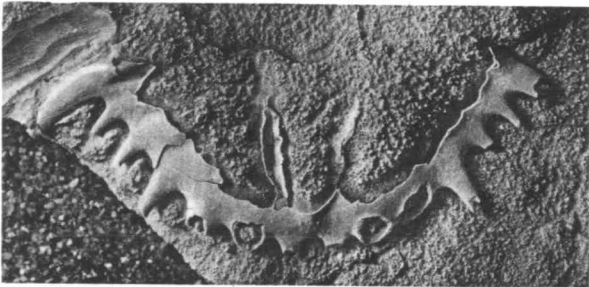
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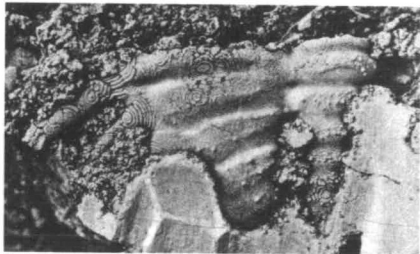
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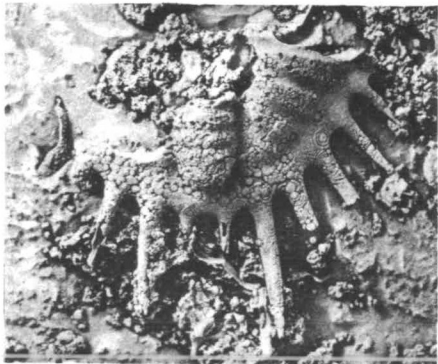
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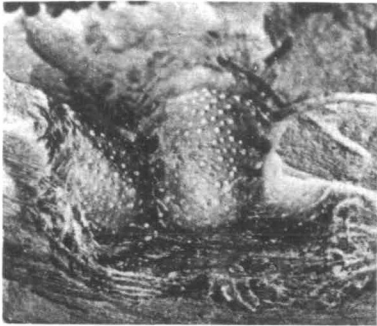
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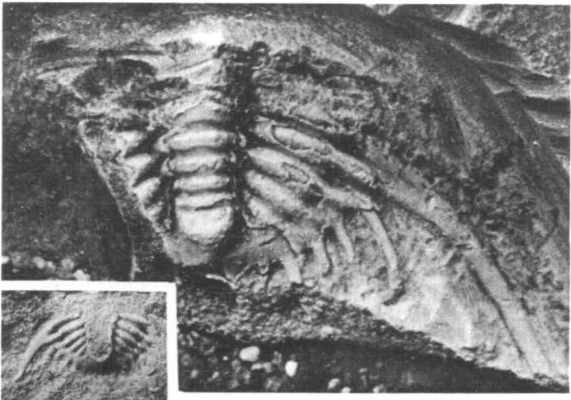
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Georgina Limestone, Zone of <i>Glyptagnostus stolidotus</i> .	
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O'Hara Shale, loc. D29, Zone of <i>Glyptagnostus stolidotus</i> .	



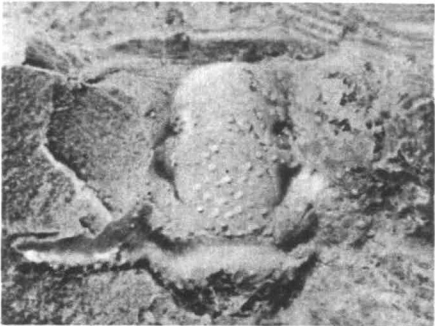
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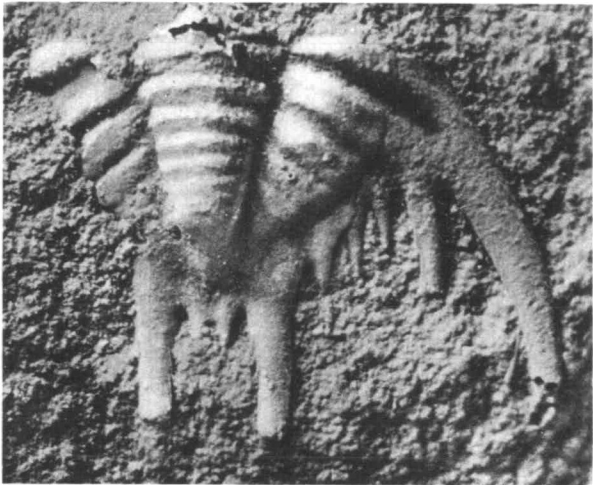
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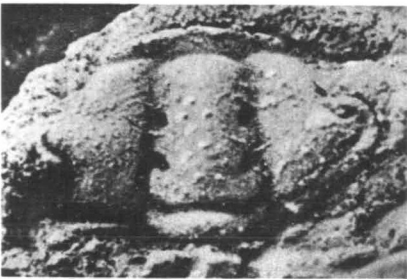
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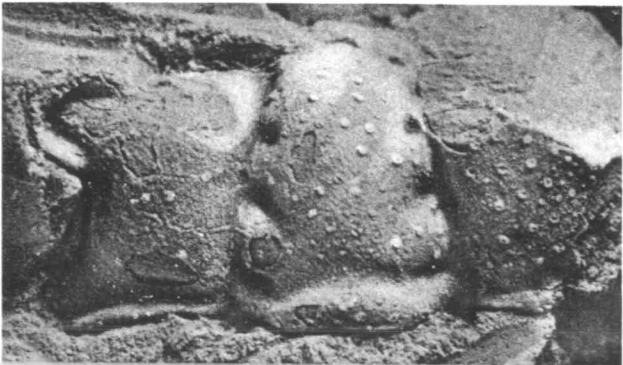
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5



6b



6a

PLATE 49

	Page
<i>Dipyrgotes novella</i> n.sp.	318
Figs 1a, 1b.—Cranidium (x 6 and x 3), CPC 5743, frontal and dorsal view.	
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O'Hara Shale, loc. D29, Zone of <i>Glyptagnostus stolidotus</i> .	
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<i>Cyrtoprora intricata</i> sp.nov.	321
Figs 4a-4c.—Cranidium (x 4 and x 2), holotype , CPC 5746. Fig. 4b—before, and Fig. 4a.—The holotype, after the operation on the frontal scroll; Fig. 4c.—rubber cast of holotype showing left palpebral lobe. Loc. W15.	
Fig. 5.—Cranidium (x 2), CPC 5747, loc. W20.	
Fig. 6.—Fragment of cranidium (x 7), CPC 5748, loc. G51.	
Georgina Limestone, Zone of <i>Glyptagnostus stolidotus</i> .	



1a



1b



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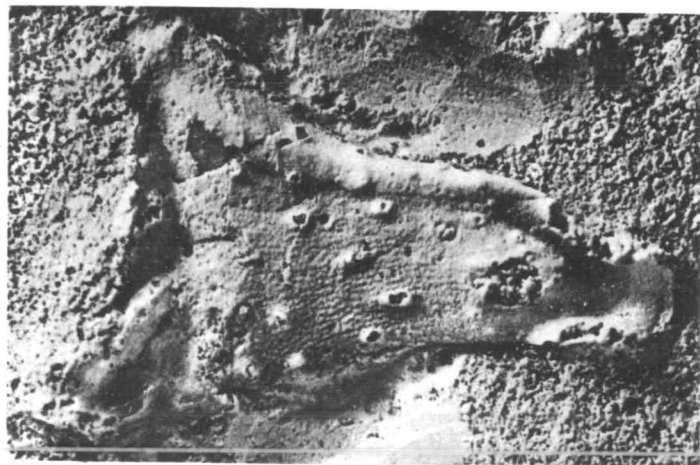
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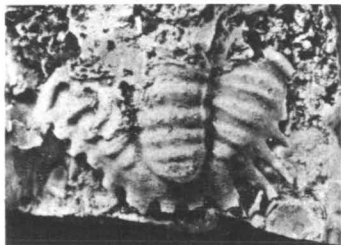
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PLATE 50

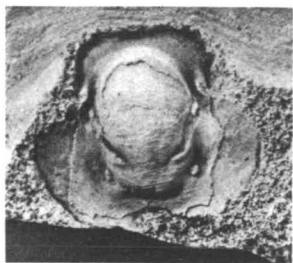
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<i>Blackwelderia?</i> sp. B.	317
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Mungerebar Limestone, Zone of <i>Cyclagnostus quasivespa</i> .	
<i>Palaeadotes dissidens</i> sp.nov.	341
Fig. 3.—Hypostoma (x 5), CPC 5751, loc. W20.	
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Fig. 8.—Pygidium (x 2), holotype , CPC 5756, loc. G50.	
Georgina Limestone Zone of <i>Glyptagnostus stolidotus</i> .	
<i>Palaeadotes italops</i> sp.nov.	345
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Fig. 10.—Fragmentary cranidium (x 5), CPC 5758.	
Fig. 11.—Axial lobe of cranidium (x 4), CPC 5759.	
Loc. D29.	
Fig. 12.—Pygidium (x 5), holotype , CPC 5760, loc. D28. Associated is a cranidium of <i>Liostracina volens</i> sp.nov.	
O'Hara Shale, Zone of <i>Glyptagnostus stolidotus</i> .	



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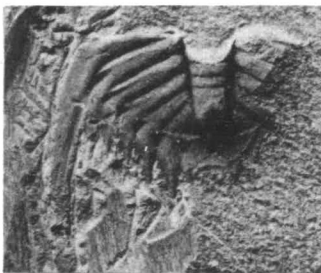
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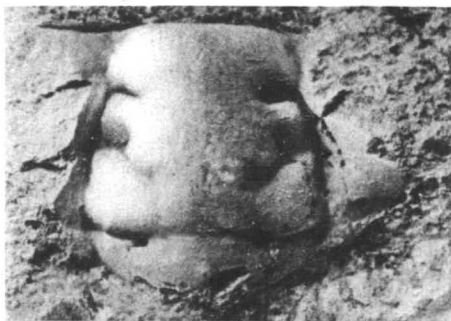
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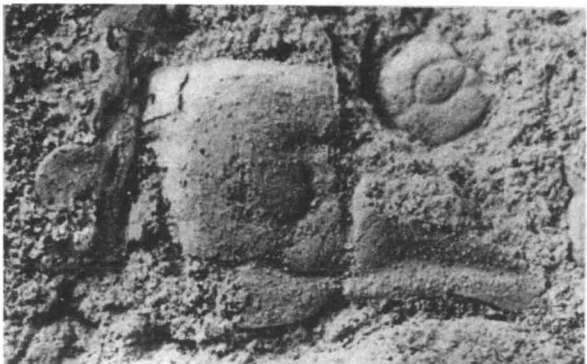
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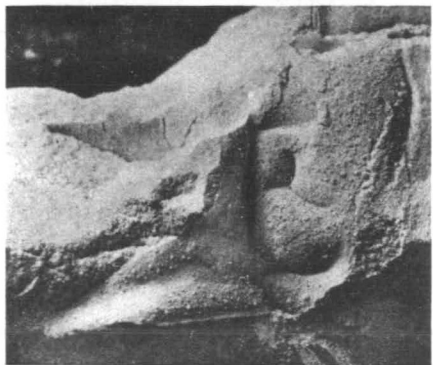
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PLATE 51

	Page
<i>Palaeadotes italops</i> sp.nov.	345
Fig. 1.—Hypostoma (x 10), CPC 5761.	
Fig. 2.—Hypostoma (x 4), CPC 5762, illustrated back to front, to show the ornament.	
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Free cheek No. 2	388
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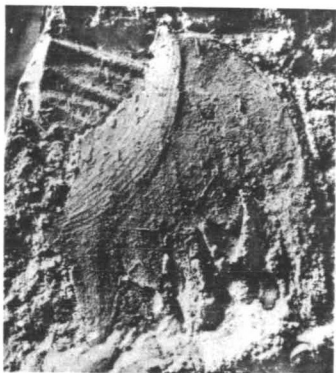
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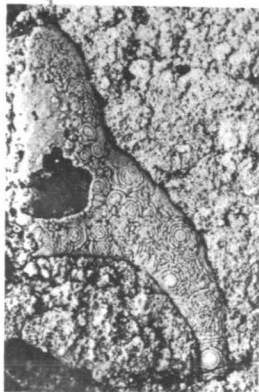
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13

PLATE 52

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Fig. 1.—Pygidium (x 10), holotype , CPC 5776, loc. G9.	
Figs 2a, 2b.—Cephalon (x 10), CPC 5777, loc. G9. Mungerebar Limestone.	
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Steamboat Sandstone-Mungerebar Limestone transition, Zone of Middle/Upper Cambrian Passage.	
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Mungerebar Limestone, Zone of <i>Erediaspis eretes</i> .	
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Figs 7a, 7b.—Cephalon (x 8), holotype , CPC 5783. Part of the rear edge has crumbled away.	
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Loc. D120b. Pomegranate Limestone, Idamean Zone of <i>Erixanium sentum</i> .	

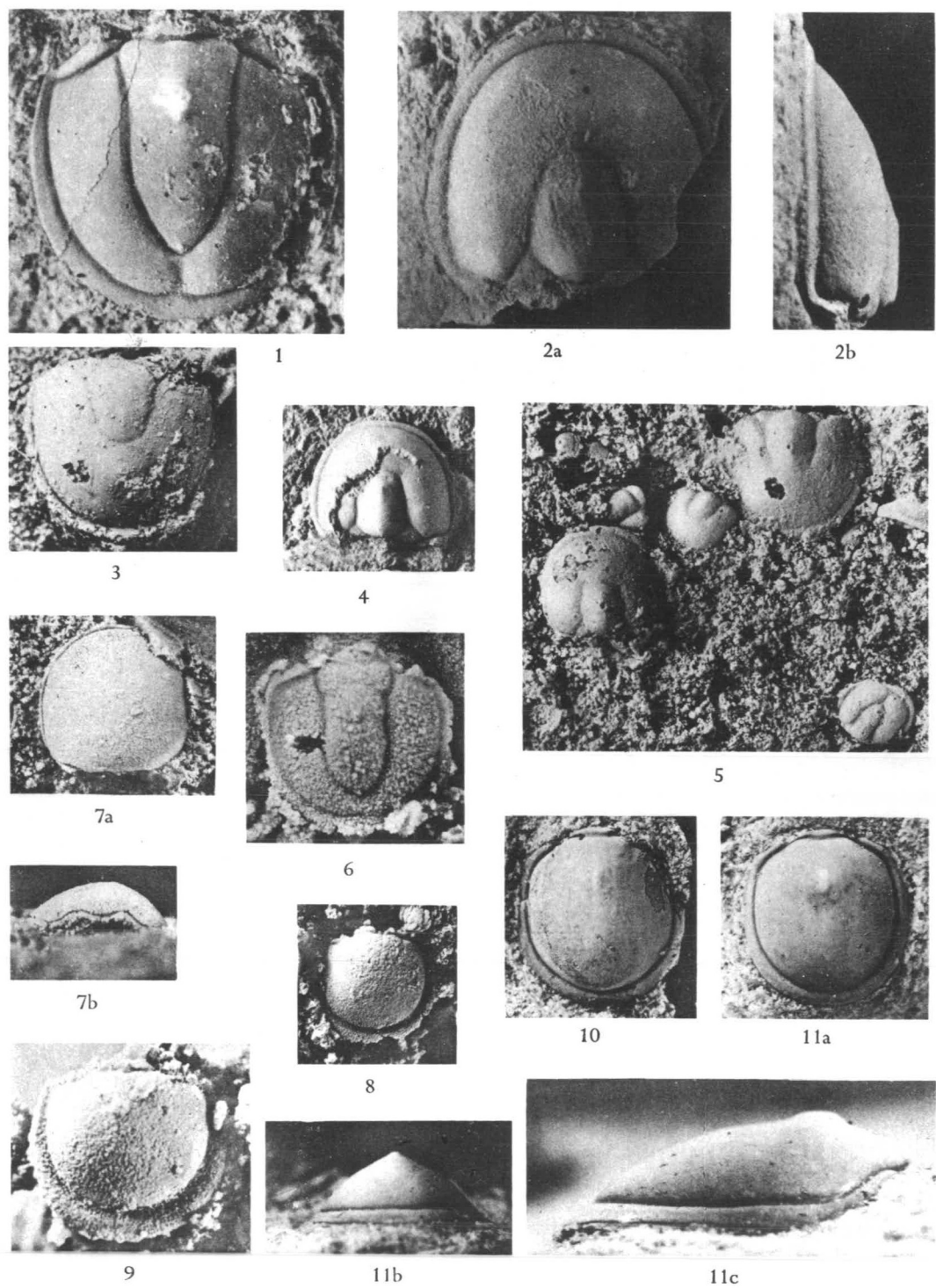
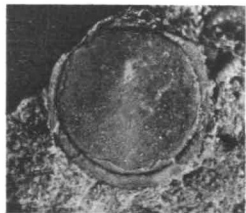


PLATE 53

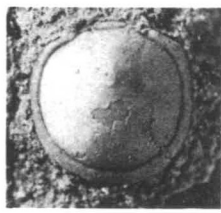
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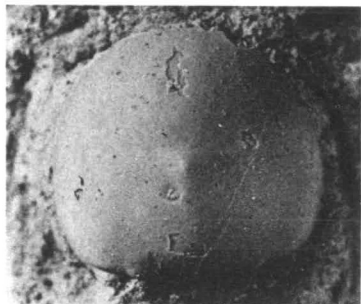
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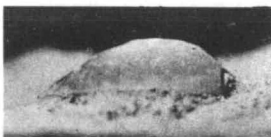
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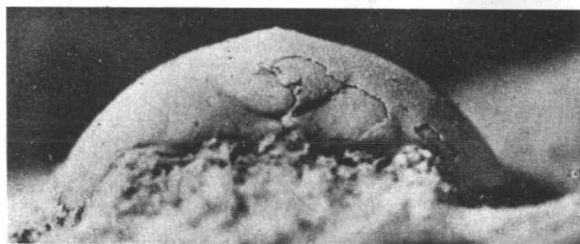
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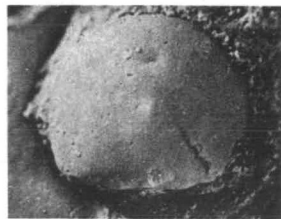
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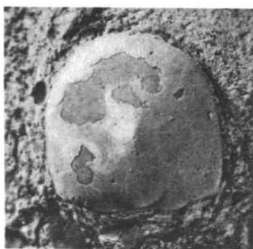
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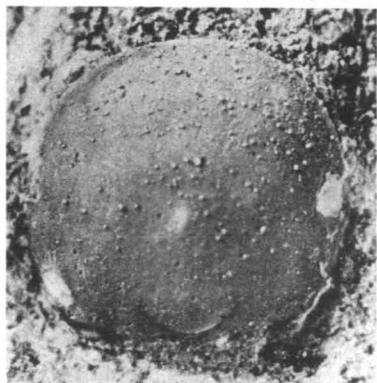
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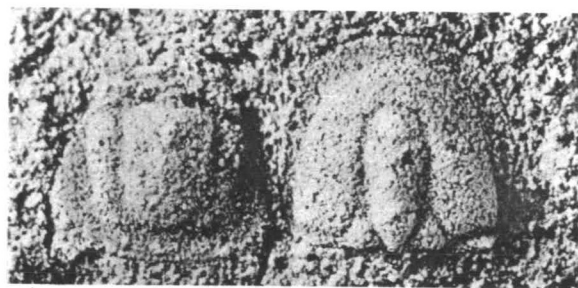
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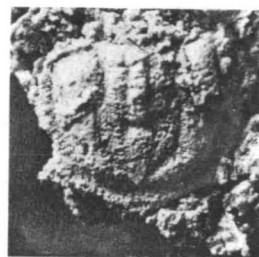
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11a



12



7



11b



13



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14



10a



10b



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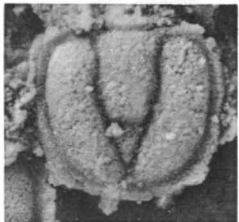
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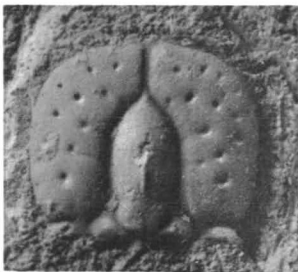
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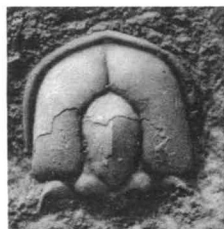
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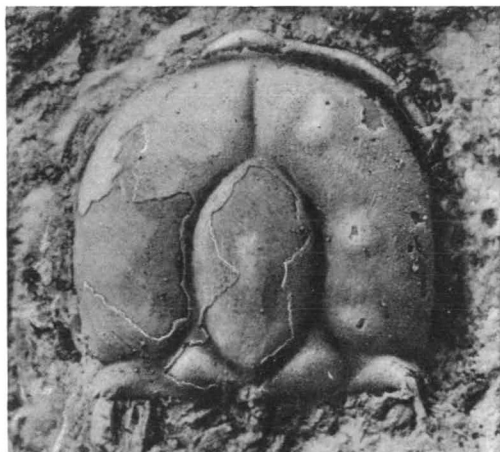
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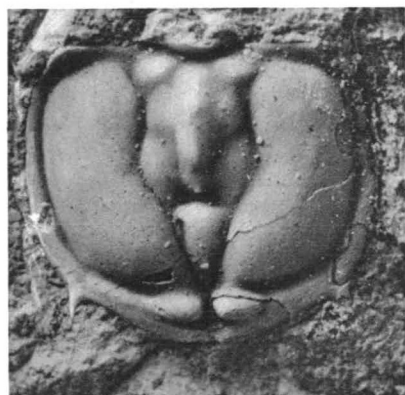
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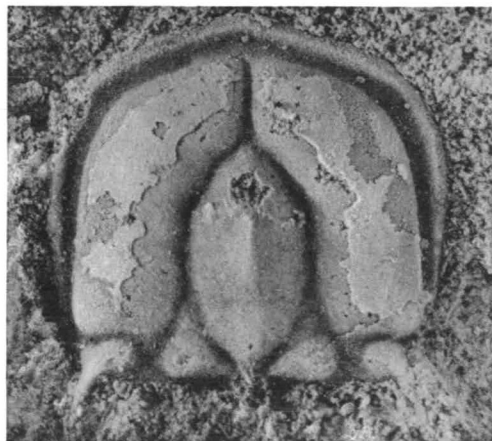
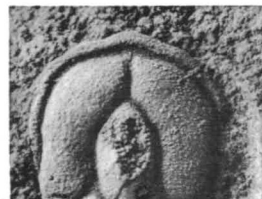
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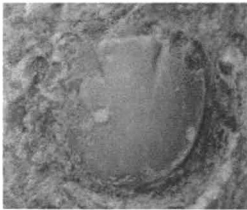
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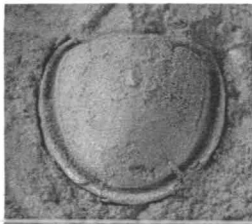
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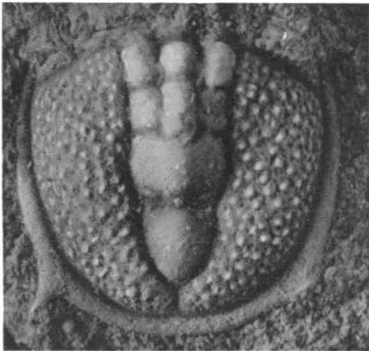
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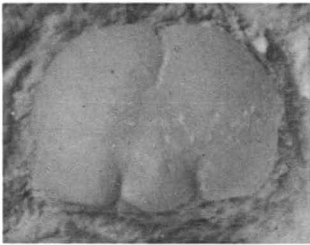
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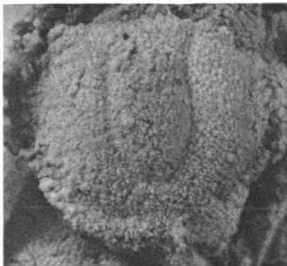
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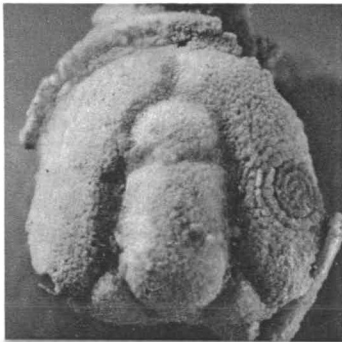
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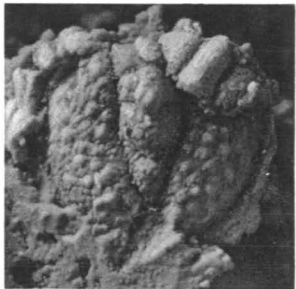
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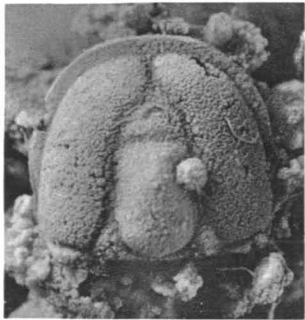
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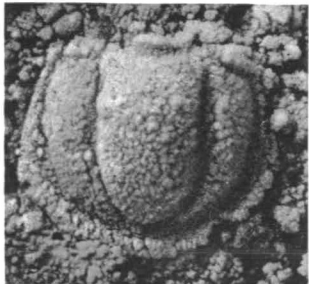
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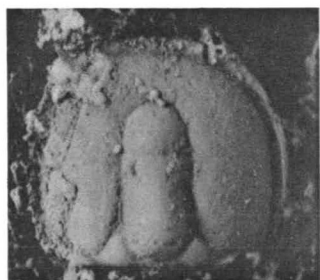
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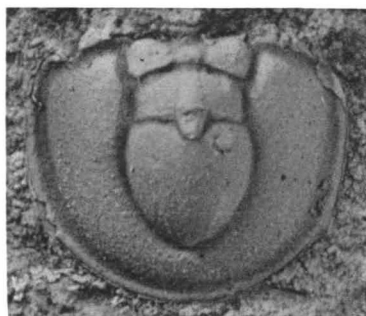
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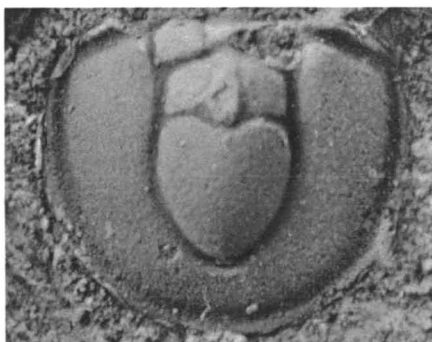
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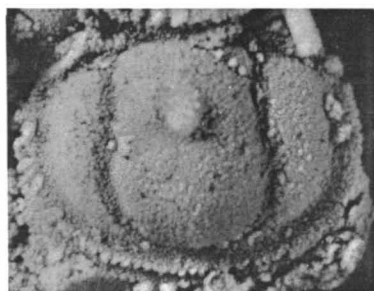
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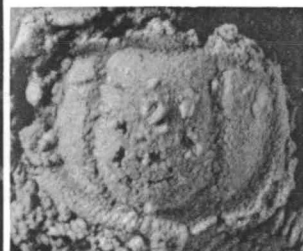
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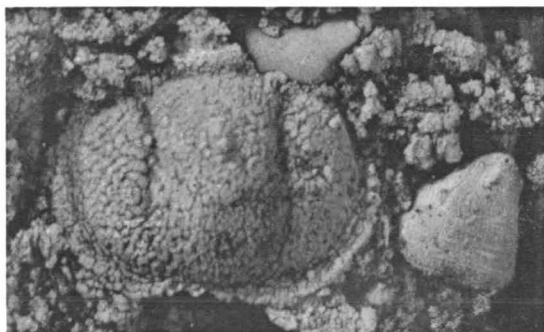
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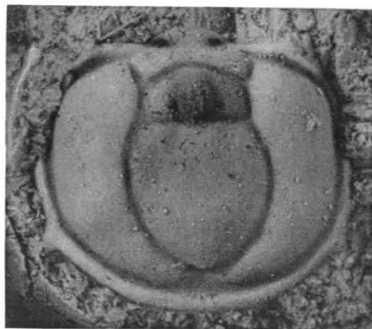
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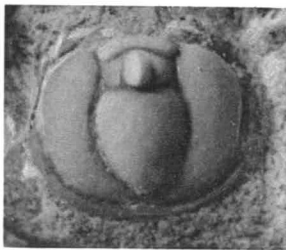
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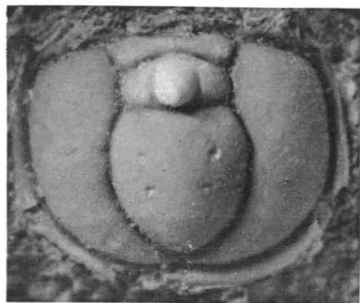
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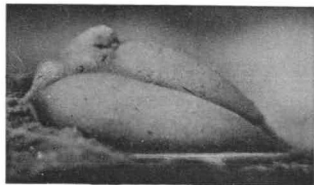
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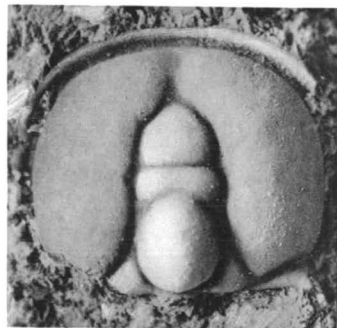
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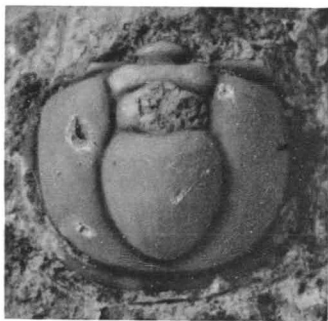
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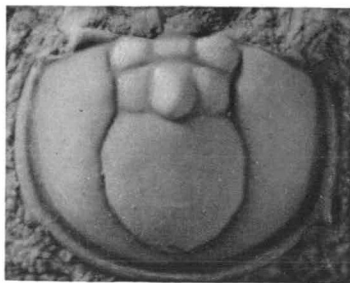
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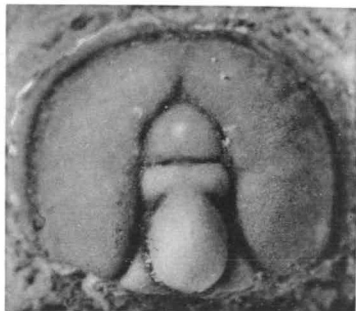
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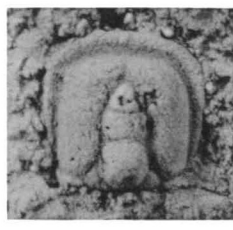
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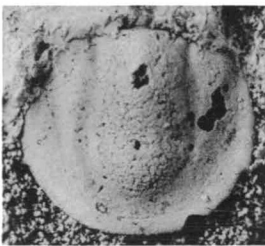
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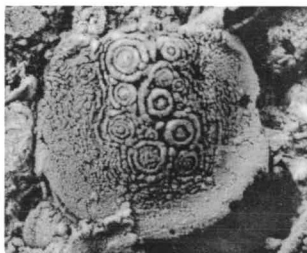
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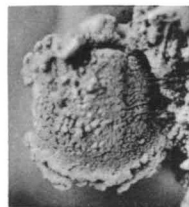
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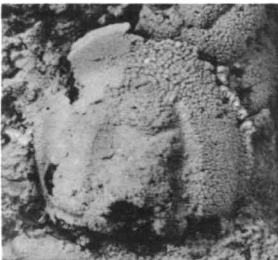
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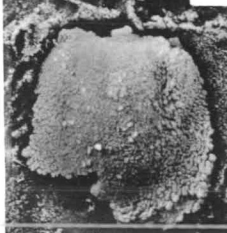
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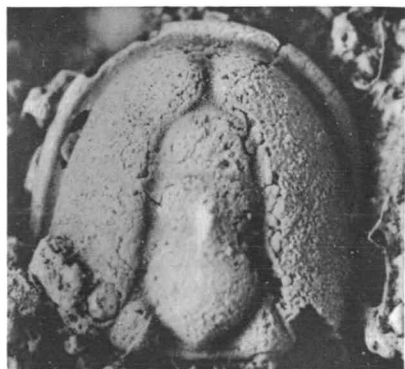
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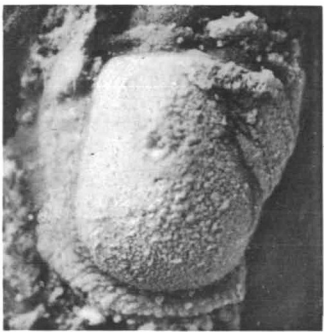
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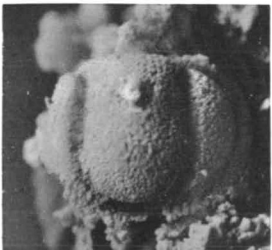
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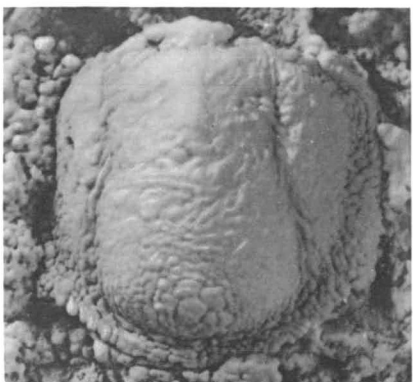
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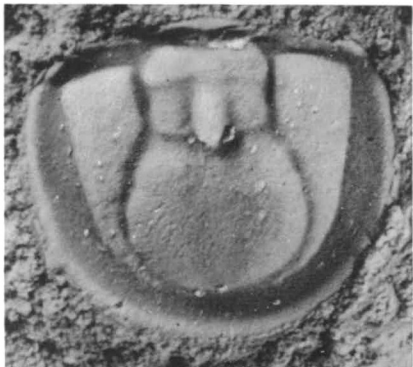
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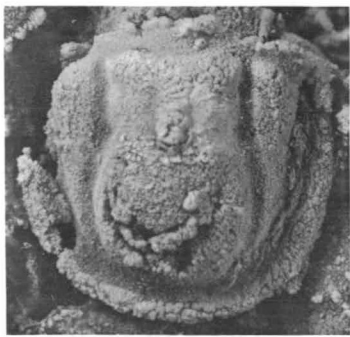
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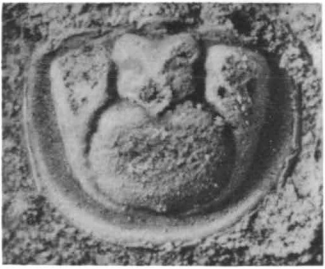
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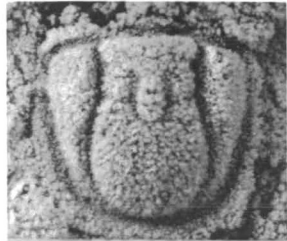
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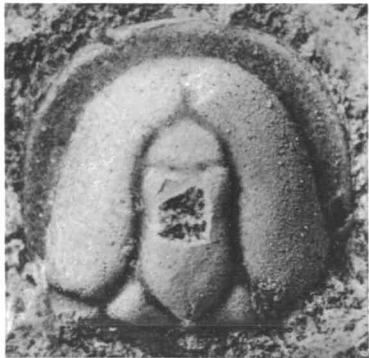
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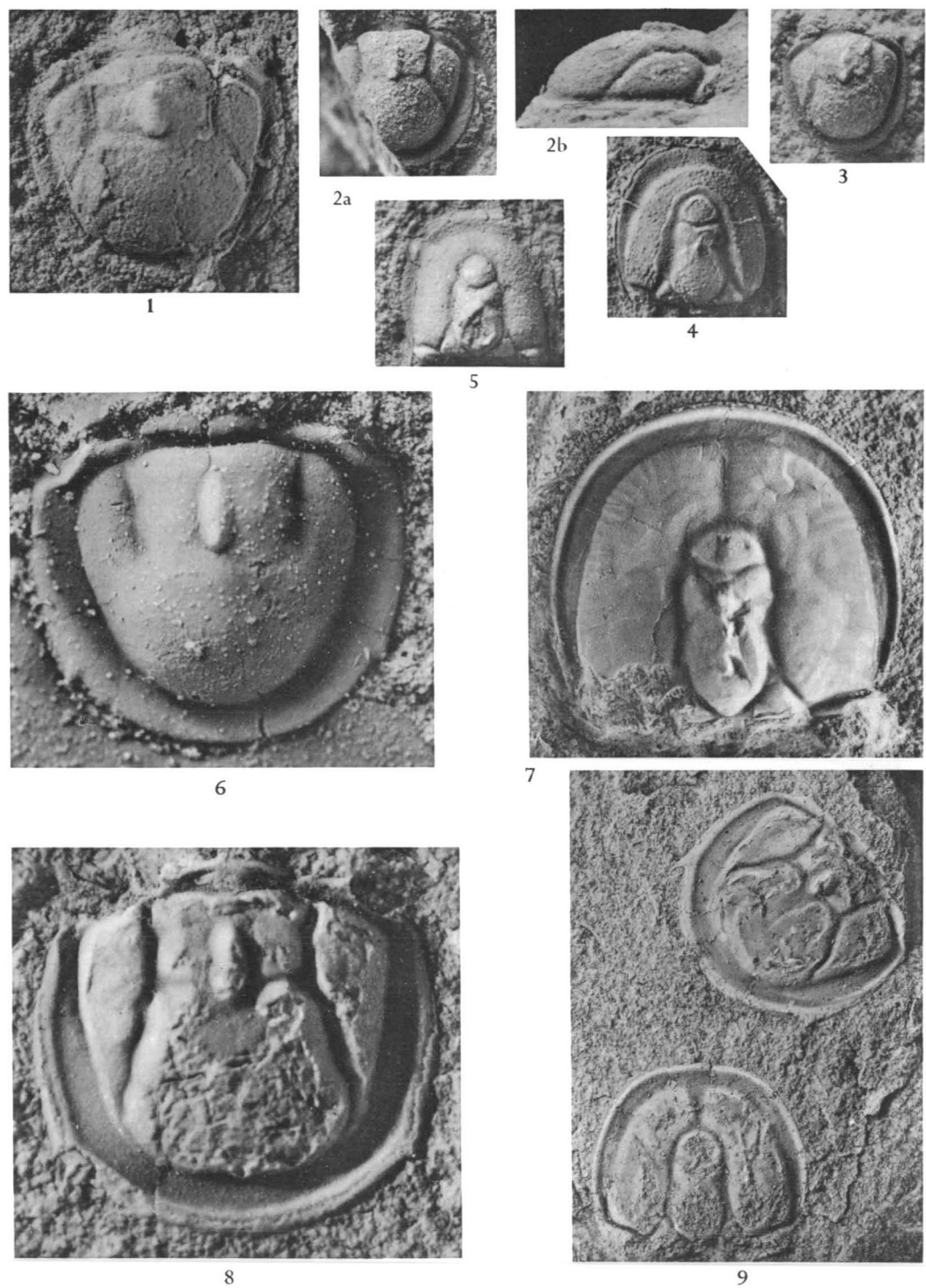
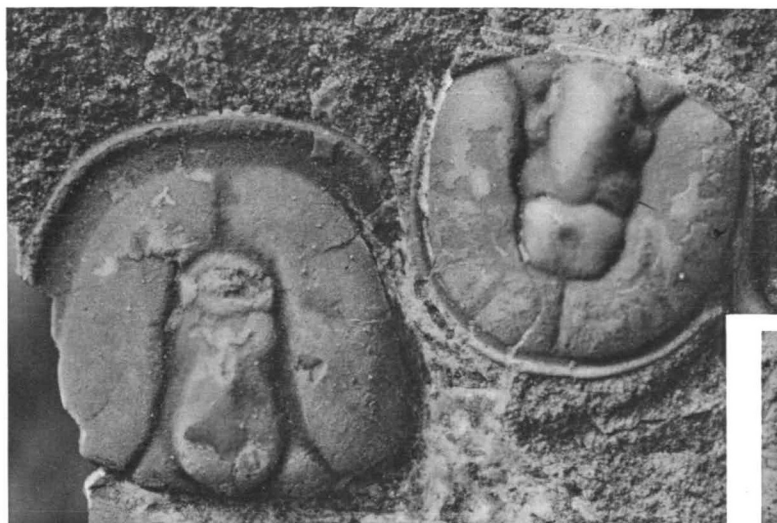


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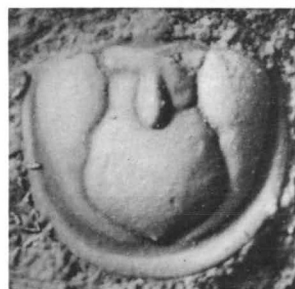
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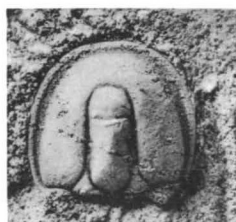
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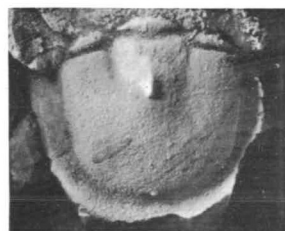
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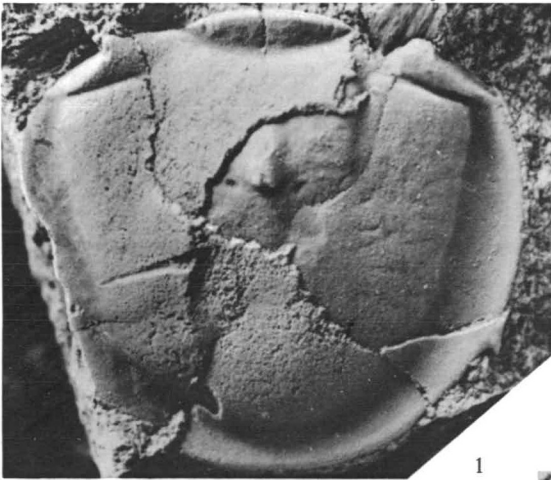
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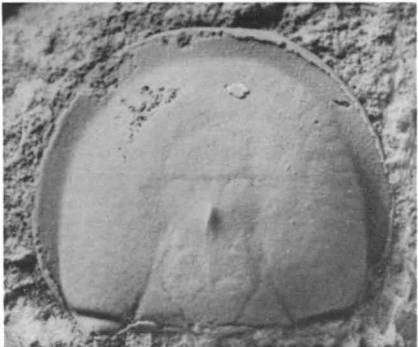
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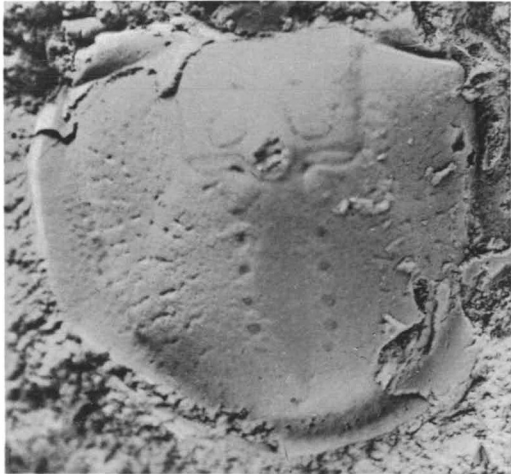
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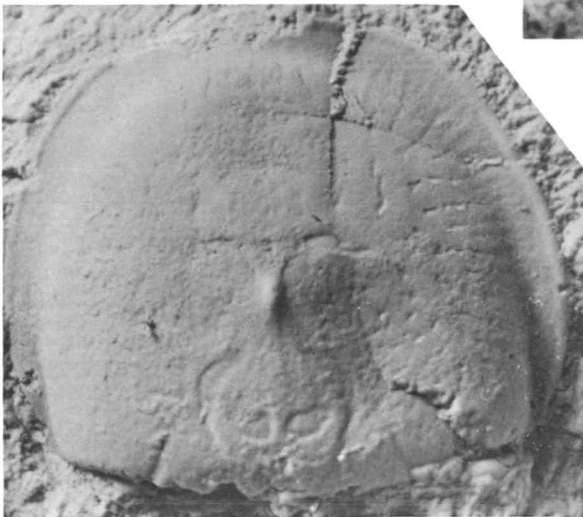
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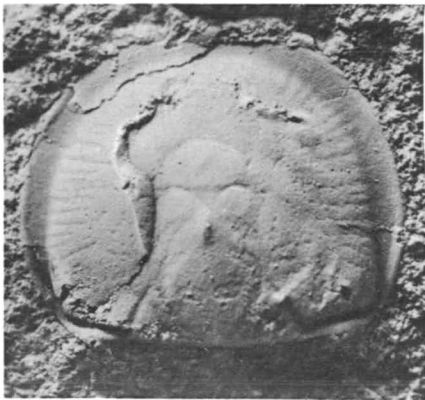
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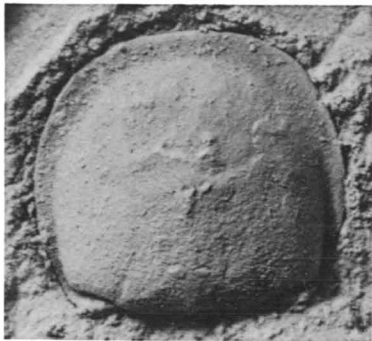
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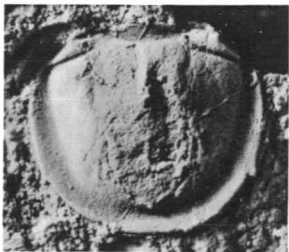
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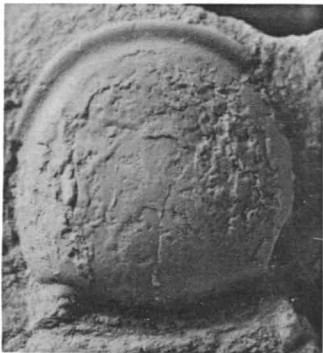
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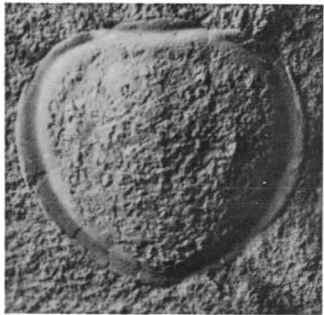
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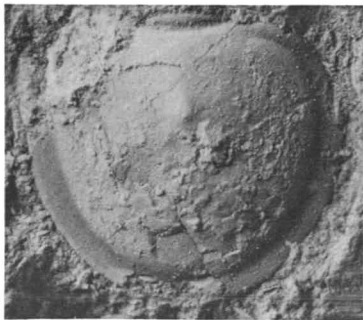
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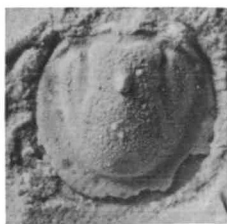
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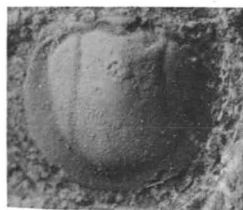
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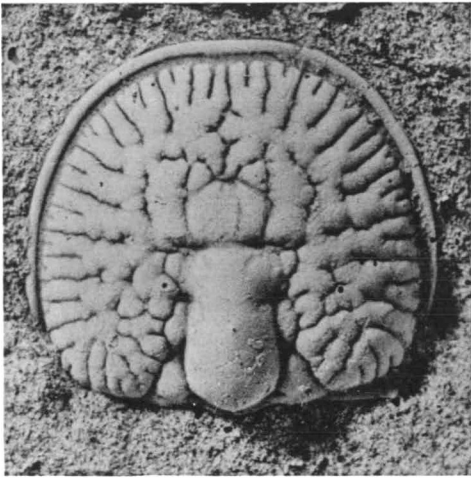
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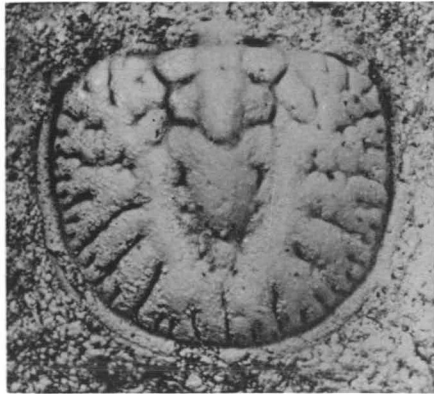
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