

MEDDELELSER OM GRØNLAND

UDGIVNE AF

KOMMISSIONEN FOR VIDENSKABELIGE UNDERSØGELSER I GRØNLAND

Bd. 139

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PALÆOZOOLOGICA GROENLANDICA

AFHANDLINGER OM ØSTGRØNLANDSKE VERTEBRATFOSSILER  
INDSAMLEDE PAA DE AF DR. LAUGE KOCH I AARENE 1926–38 LEDEDE  
EKSPEDITIONER UDGIVET AF UNIVERSITETETS ZOOLOGISKE MUSEUM

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ON THE PLACODERMI  
OF THE UPPER DEVONIAN  
OF EAST GREENLAND II

BY

ERIK A:SON STENSIÖ

WITH 308 FIGURES IN THE TEXT  
AND 75 PLATES

*Plates*

KØBENHAVN

C. A. REITZELS FORLAG

DET HOFFENBERGSKE ETABLISSEMENT

1948



ERIK A:SON STENSIÖ

ON THE PLACODERMI  
OF THE UPPER DEVONIAN  
OF EAST GREENLAND

II

ANTIARCHI: SUBFAMILY  
BOTHRIOLEPINAE

WITH AN ATTEMPT AT A REVISION  
OF THE PREVIOUSLY DESCRIBED SPECIES  
OF THAT SUBFAMILY

*Plates*

### **Explanation of plates.**

All the specimens reproduced in the plates belong to the Zoological Museum of the University of Copenhagen.

For particulars concerning the stratigraphy of the Upper Devonian of East Greenland and for information concerning the position of the various localities mentioned in the explanations below the reader is referred to papers by Stensiö (1931, text-fig. 1), Säve-Söderbergh (1932, 1933, 1934) Jarvik (1935) and to pp. 534–536 above in the present work.

## Plate 1.

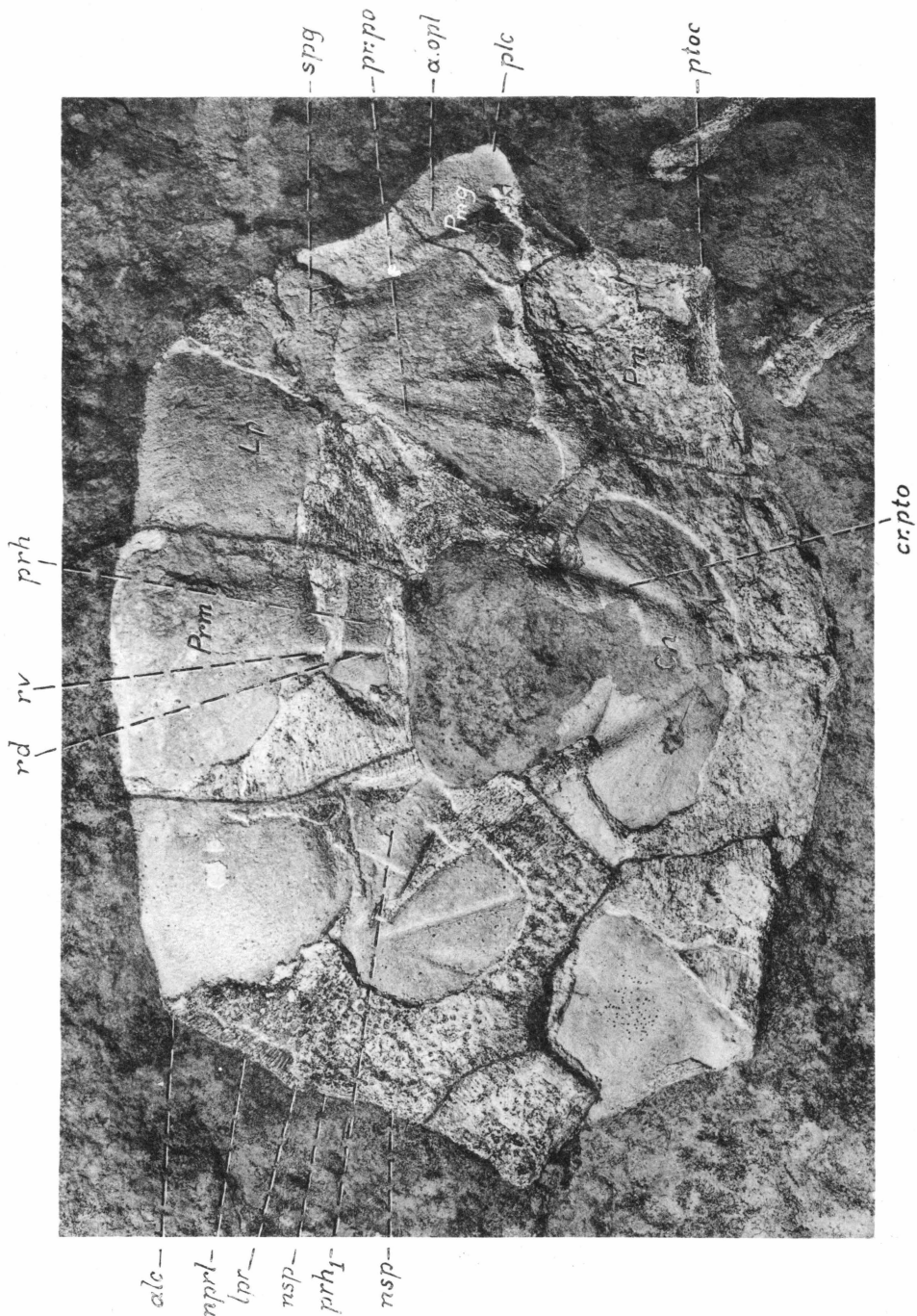
### *Bothriolepis groenlandica* Heintz.

Large flattened head-shield in dorsal aspect. The bone tissue much destroyed by weathering, and on account of this the various bones to a considerable extent represented only by impressions of their lower sides. Specimen No. 996. Nat. Size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

### Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *Pmg*, post-marginal plate; *Prm*, premedian plate; *alc*, antero-lateral corner of head-shield; *a.opl*, area of attachment for extralateral (opercular) plate (impression); *cr.pto*, postorbital crest (impression); *lpr*, supraspiracular process; *npri*, prelateral notch; *nsp*, spiracular notch; *plc*, postero-lateral (preobstantic) corner; *prh*, *prh<sub>1</sub>*, median, unpaired and lateral, paired divisions respectively of preorbital recess; *pr.po* antero-lateral corner of otico-occipital depression developed for postorbital process of endocranium; *ptco*, postobstantic corner; *rd*, rostro caudal ridge on dorsal face of median division of preorbital recess; *rv*, rostro-caudal ridge on lower face of premedian plate underneath median division of preorbital recess; *spg*, spiracular groove (impression).



## Plate 2.

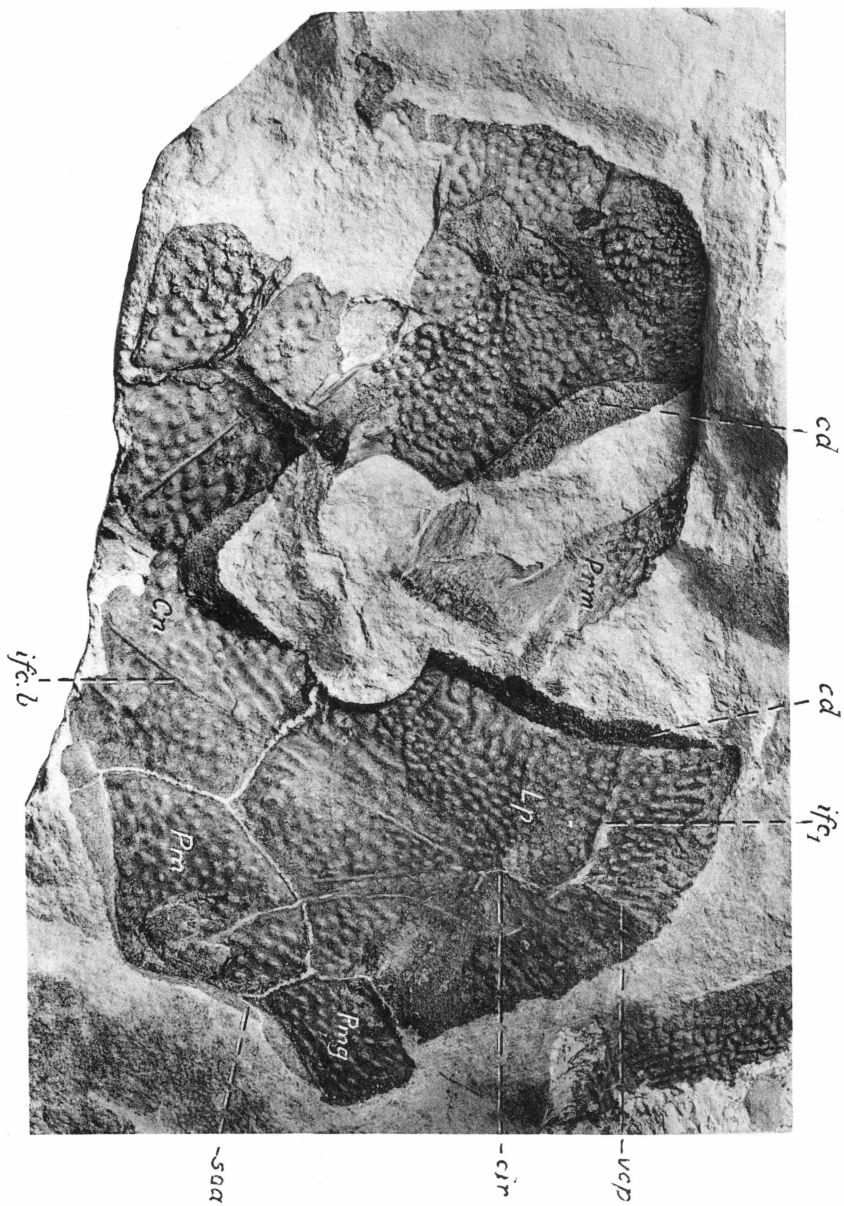
*Bothriolepis groenlandica* Heintz.

Imperfect impression of the dorsal side of a large head-shield. The premedian plate detached and somewhat displaced. Specimen No. 1001. Nat. size.

Gaus Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

### Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *Pmg*, post-marginal plate; *Ppm*, premedian plate; *cd*, area overlapped by premedian plate (impression); *cir*, semicircular pit-line groove; *ifc<sub>1</sub>*, upper infraorbital sensory groove; *ifc.b*, posterior oblique cephalic pitline groove; *soa*, subobstantic area; *vpc*, vertical pit-line groove of cheek.



### Plate 3.

#### *Bothriolepis groenlandica* Heintz.

Fig. 1. Imperfect head-shield. To a large extent preserved as an impression of the upper side. Specimen No. 998. Nat. size.

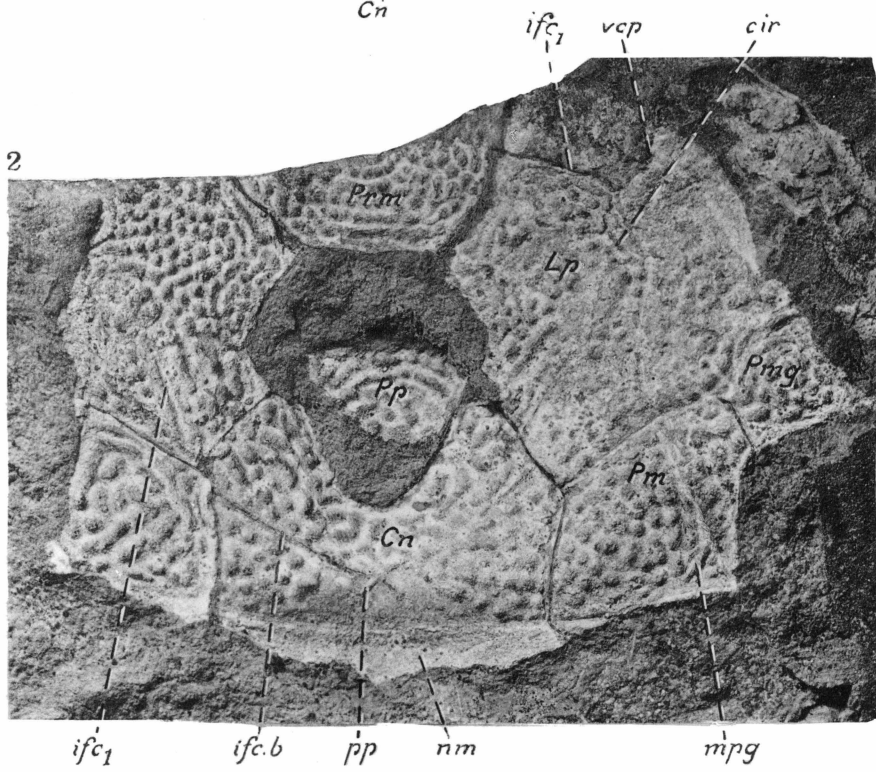
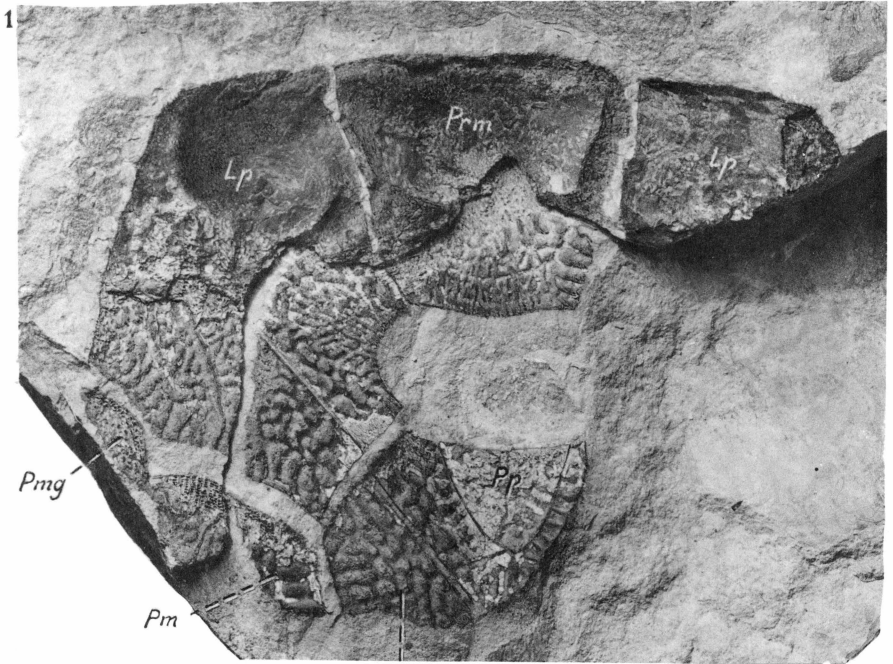
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and GROSSOPTERYGIAN Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Small deficient head-shield preserved as an impression of the upper side. Specimen No. 1007.  $\times \frac{1}{2}$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *Pmg*, post-marginal plate; *Pp*, postpineal plate; *Prm*, premedian plate; *cir*, semicircular pit-line groove; *ife*<sub>1</sub>, upper infraorbital sensory groove; *ife. b*, posterior oblique cephalic pit-line groove; *mpg*, middle pit-line groove of skull-roof; *nm*, obstructed nuchal area; *pp*, posterior pit-line groove of the skull-roof; *vcp*, vertical pit-line groove of cheek.



#### Plate 4.

##### *Bothriolepis groenlandica* Heintz.

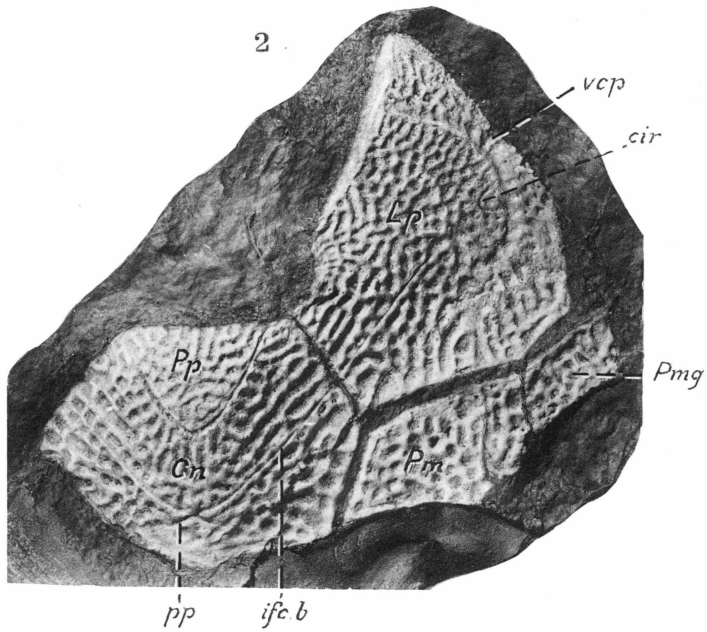
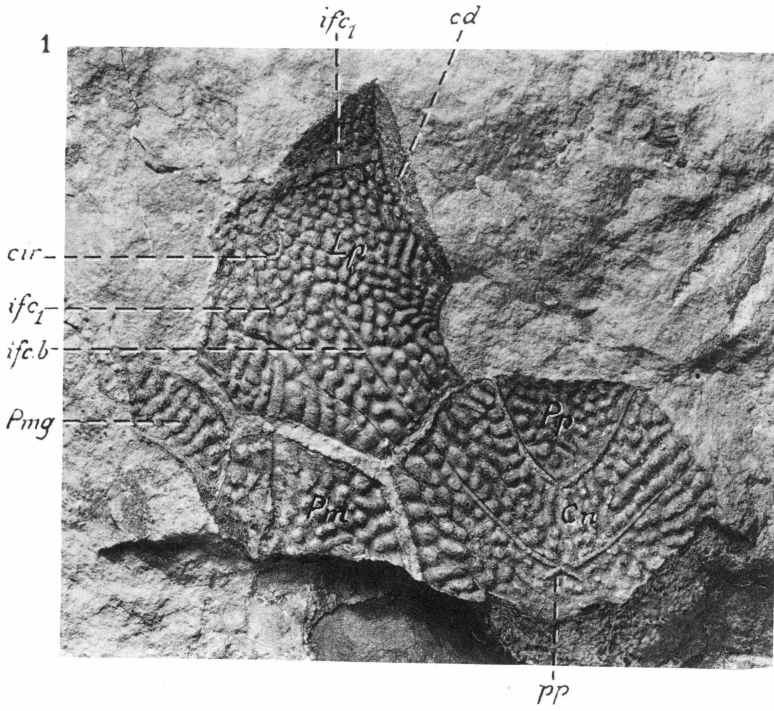
Fig. 1. Part of a head-shield preserved as an impression of the upper side. Specimen No. 1048. Nat. size.

Gauss Peninsula. Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Plaster cast of the specimen in fig. 1.

##### Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *Pmg*, post-marginal plate; *Pp*, postpineal plate; *cd*, area overlapped by premedian plate (impression); *cir*, semicircular pit-line groove; *ife*<sub>1</sub>, upper infraorbital sensory canal groove; *ife*, *b*, posterior oblique cephalic pit-line groove; *pp*, posterior pit-line groove of skull-roof; *vcp*, vertical pit-line groove of cheek.



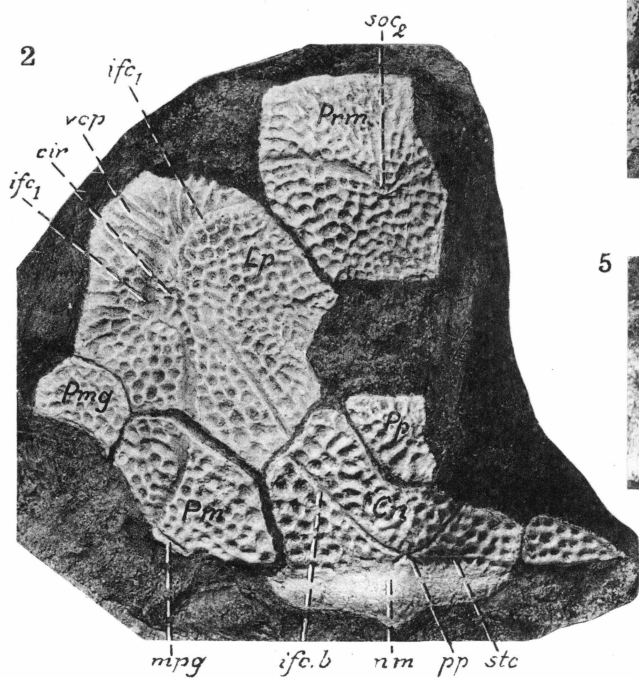
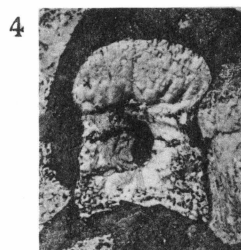
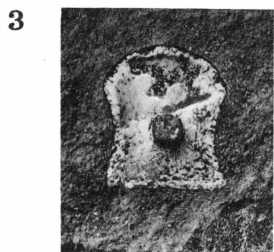
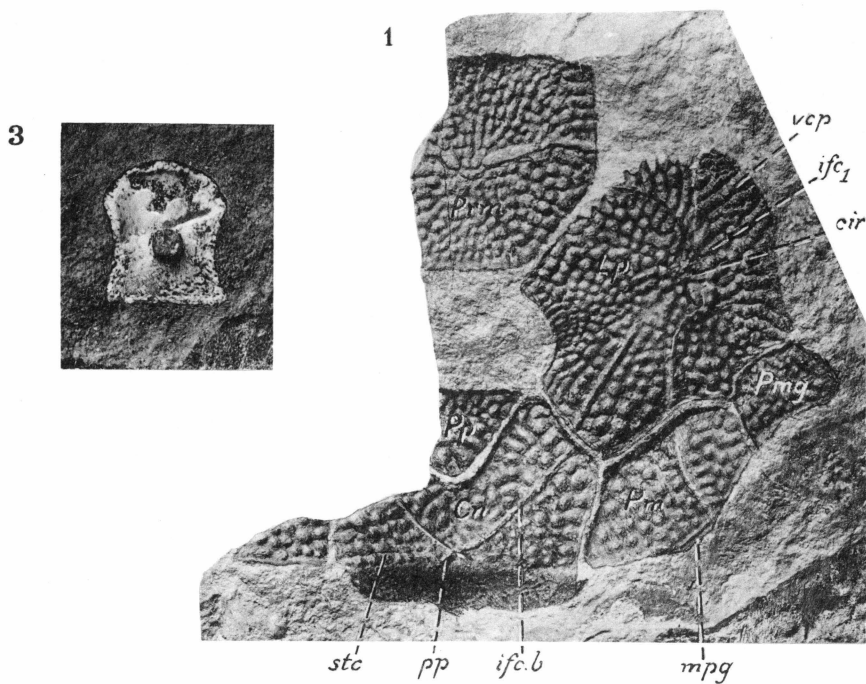
## Plate 5.

### *Bothriolepis groenlandica* Heintz.

- Fig. 1. Part of a head-shield preserved as an impression of the upper side. Specimen No. 999. Nat. size.
- Fig. 2. Plaster cast of the specimen in fig. 1.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 3. Pineal plate in dorsal view with impression of pineal pit. Only the basal parts of the plate preserved. Specimen No. 1079.  $\times 2$ .  
Same locality and horizon etc. as the specimen in figs. 1, 2.
- Figs. 4, 5. Pineal plate in counterpart. The deep pineal pit and the pineal foramen well shown. Specimen No. 1081a, b.  $\times 2$ .  
Gauss Peninsula. Glacier Valley. Bend of brook. Western slope of ravine. Horizon 422 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *Pmg*, post-marginal plate; *Pp*, postpineal plate; *Prm*, premedian plate; *cir*, semicircular pit-line groove; *ifc*<sub>1</sub>, upper infraorbital sensory canal groove; *ifc*. *b*, posterior oblique cephalic pit-line groove; *mpg*, middle pit-line groove; *nm*, obstructed nuchal area; *pp*, posterior pit-line groove of skull-roof; *soc*<sub>2</sub>, median unpaired section of supraorbital sensory canal grooves; *vcp*, vertical pit-line groove of cheek.



### Plate 6.

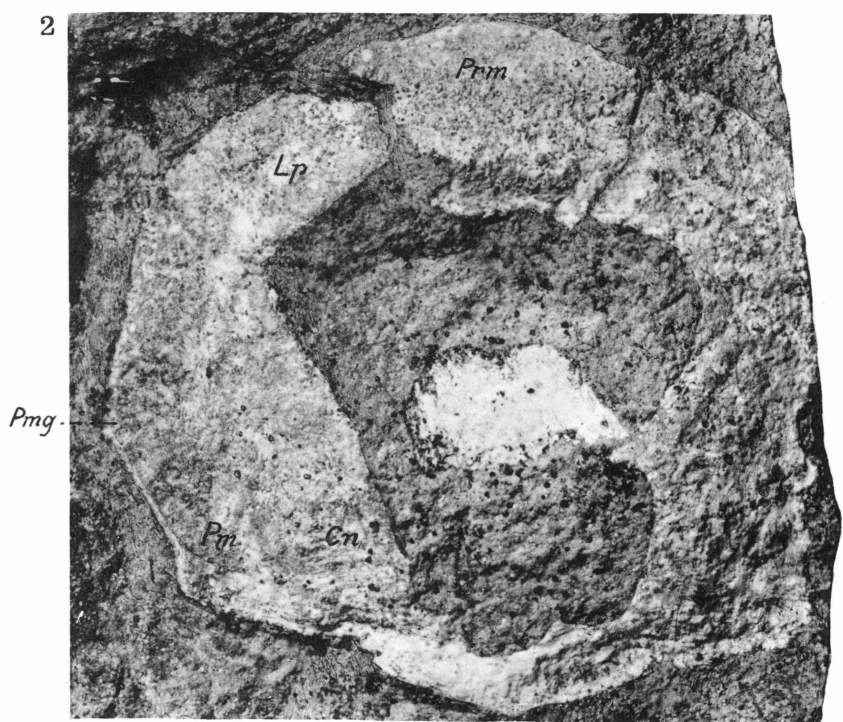
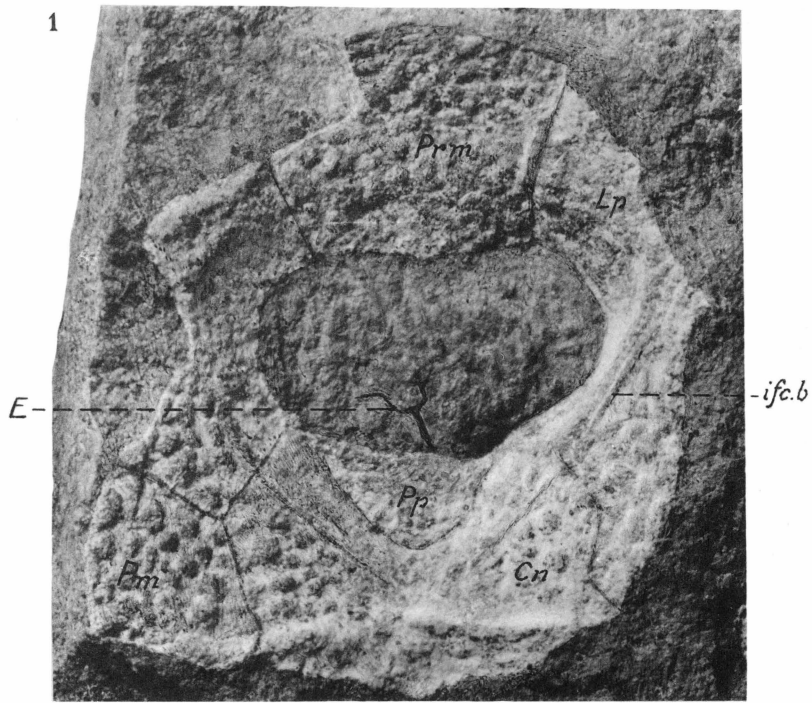
*Bothriolepis groenlandica* Heintz.

Figs. 1, 2. A very small imperfectly preserved head-shield in counterpart. Specimen No. 1087a, b.  $\times 4$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480–550 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*Cn*, centro-nuchal plate; *E*, ossification probably situated in the foremost part of the interorbital wall close behind the nasal capsules; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *Pmg*, postmarginal plate; *Pp*, postpineal plate; *Prm*, premedian plate; *ifc. b.*, posterior oblique cephalic pit-line groove.



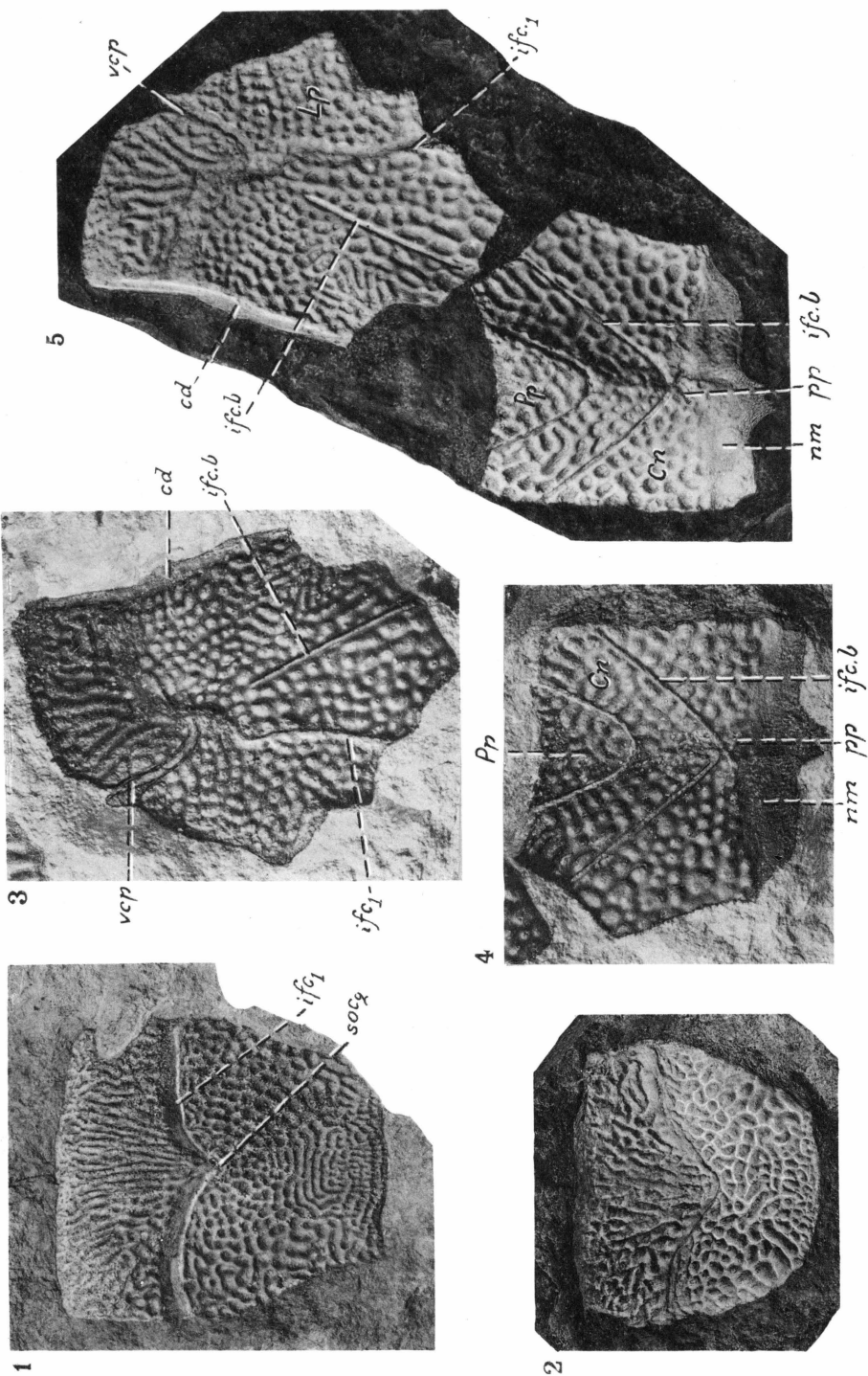
## Plate 7.

### *Bothriolepis groenlandica* Heintz.

- Fig. 1. Large, somewhat imperfect premedian plate preserved as an impression of its upper side. Specimen No. 376. Nat. size.  
Gauss Peninsula. Glacier Valley. W. side, above ravine. Loose 401-431 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 2. Premedian plate preserved as an impression of its upper side. Specimen No. 1008. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 3. Impression of the upper side of a lateral plate. Specimen No. 1049. Nat. size.
- Fig. 4. Impression of a centro-nuchal plate with the postpineal plate attached. Specimen No. 1050. Nat. size.
- Fig. 5. Plaster cast of the plates in figs. 3 and 4. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pp*, postpineal plate; *cd*, area overlapped by premedian plate; *ifc<sub>1</sub>*, upper infraorbital sensory groove; *ifc. b*, posterior oblique cephalic pit-line groove; *nm*, obtected nuchal area; *pp*, posterior pit-line groove of skull-roof; *soc<sub>2</sub>*, anterior median unpaired division of supraorbital sensory canal grooves, the anterior median pit-line; *vcp*, vertical pit-line groove of cheek.



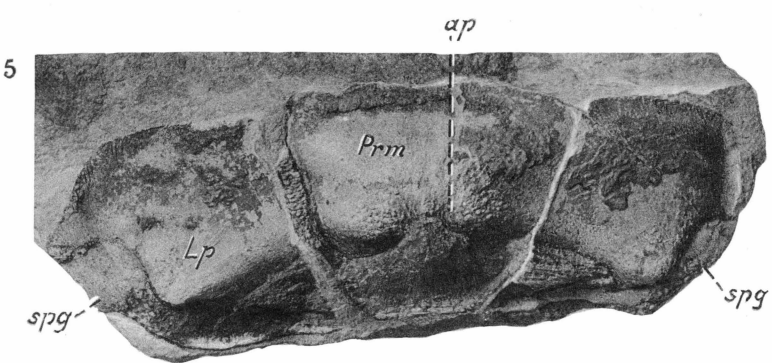
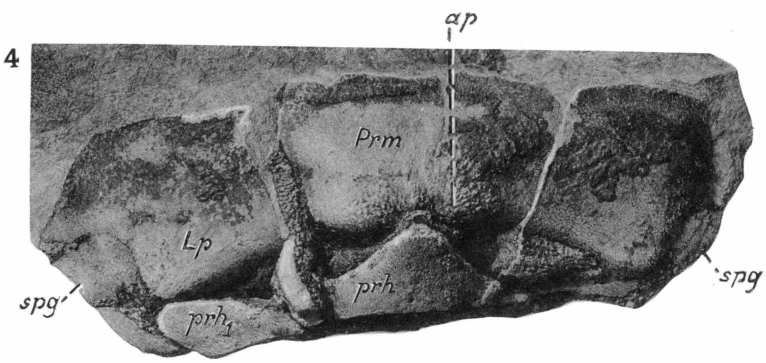
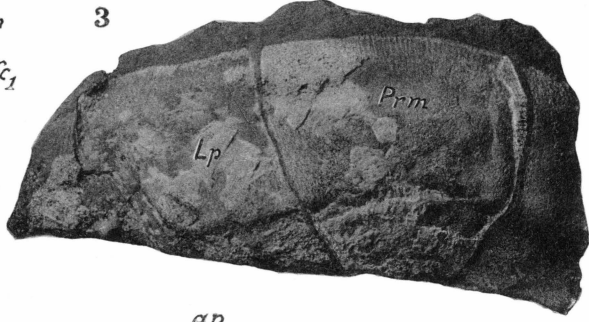
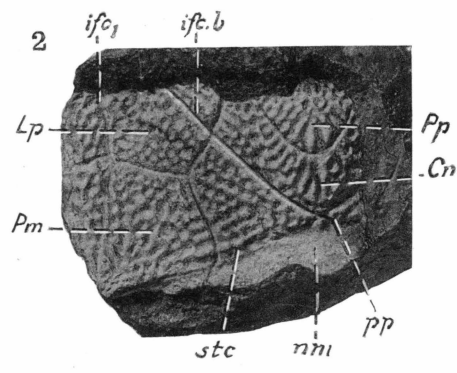
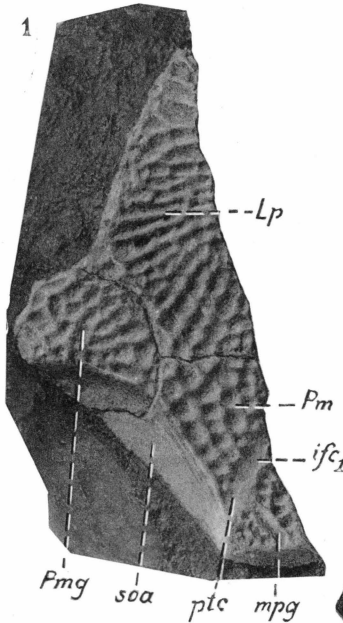
### Plate 8.

*Bothriolepis groenlandica* Heintz.

- Fig. 1. Plaster cast of a postero-lateral part of a head-shield, showing the outlines of the suborbital area (*soa*). Specimen No. 1097.  $\times \frac{3}{2}$ .  
Cape Graah. Orvin's locality. *Phyllolepis*-series. 1931.
- Fig. 2. Plaster cast of a posterior part of a head-shield. Specimen No. 1106. Nat. size.  
Cape Graah. Orvin's locality. *Phyllolepis*-series. 1931.
- Fig. 3. Impression of the lower side of the preorbital division of a head-shield. Specimen No. 1072a. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 4. Imperfect preorbital division of a head-shield with the bone-tissue removed so as to show parts of the preorbital recess (*prh*, *prh*<sub>1</sub>) and impressions of parts of the lower sides of the premedian and lateral plates. Specimen No. 404. Nat. size.
- Fig. 5. Same specimen as in fig. 4, but with the preorbital recess removed. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *Pmg*, post-marginal plate; *Pp*, postpineal plate; *Prm*, premedian plate; *ap*, poriferous area (impression); *ifc*<sub>1</sub>, upper infraorbital sensory groove; *ifc. b*, posterior oblique cephalic pit-line groove; *mpg*, middle pit-line groove of skull-roof; *nm*, obstructed nuchal area; *pp*, posterior pit-line groove of skull-roof; *prh*, *prh*<sub>1</sub>, preorbital recess preserved as a cast; *ptc*, cephalic division of main lateral line groove; *soa*, suborbital area; *spg*, spiracular groove; *stc*, supratemporal pit-line groove.



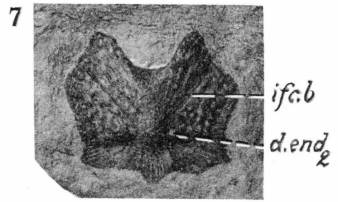
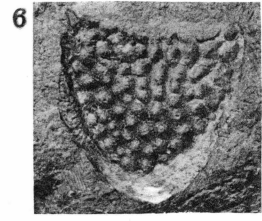
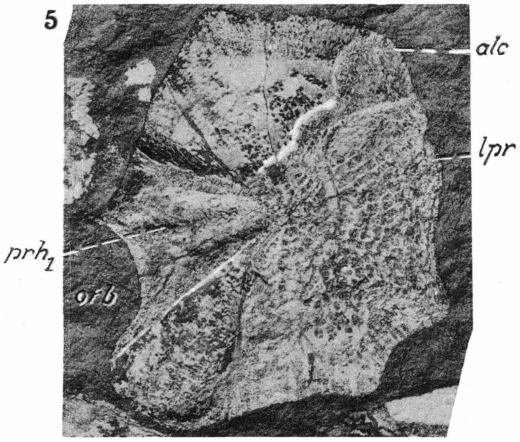
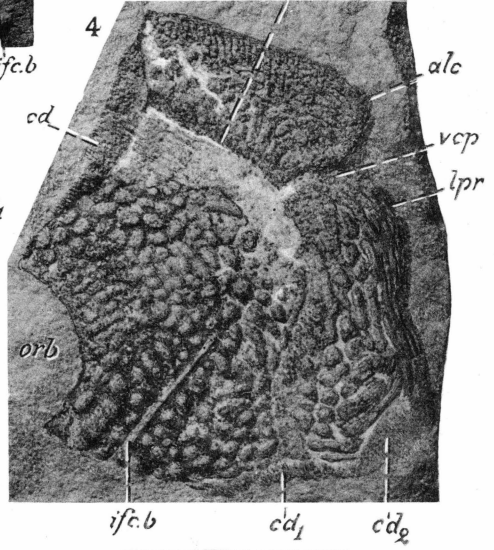
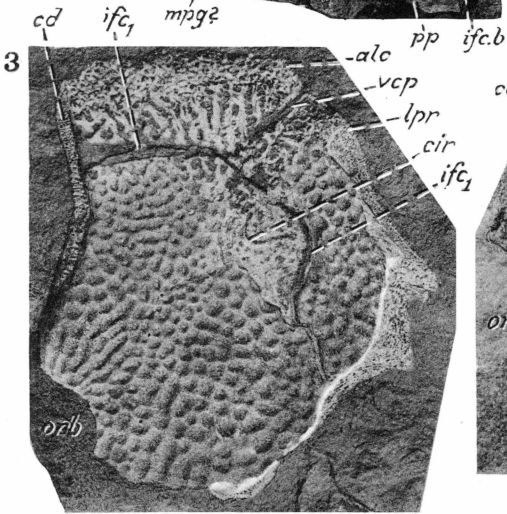
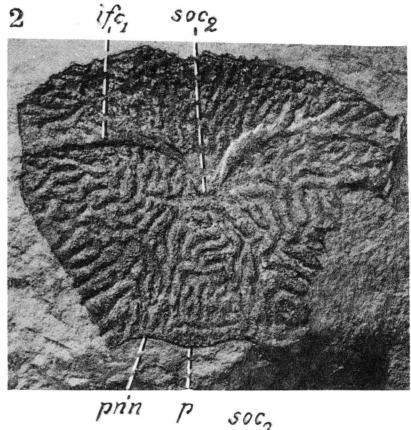
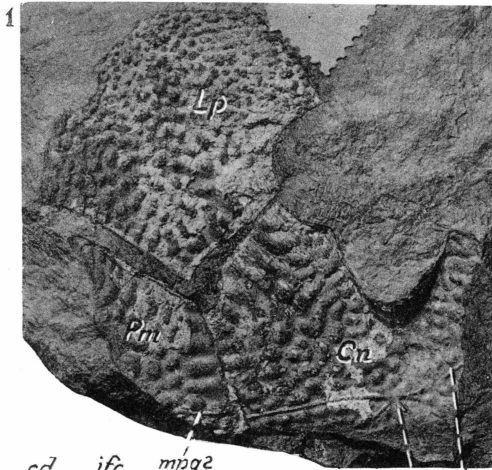
## Plate 9.

### *Bothriolepis groenlandica* Heintz.

- Fig. 1. Impression of the upper side of a posterior part of a head-shield. The middle pit-line groove (*mpg?*) presumably completely developed. Specimen No. 377. Nat. size.  
Gauss Peninsula. Glacier Valley. Bend of brook. W. side, above ravine. Loose 401-431 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 2. Impression of a large imperfect premedian plate. Specimen No. 1051. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 3. Impression of the upper side of a lateral plate. Specimen No. 1108. Nat. size.  
Same locality and horizon as the specimen reproduced in fig. 2.
- Fig. 4. Impression of the upper side of a rather small lateral plate. Specimen No. 1088b.  $\times 2$ . Counterpart reproduced in pl. 10, fig. 6.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 5. Somewhat deficient lateral plate in dorsal aspect. Specimen No. 1083. Nat. size.  
Gauss Peninsula. Glacier Valley. Bend of brook. Slope of ravine. Horizon 422 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 6. Detached postpineal plate. Impression of upper side. Specimen No. 1060. Nat. size.  
Same locality and horizon etc. as the specimen reproduced in fig. 1.
- Fig. 7. Small centro-nuchal plate. Dorsal aspect. Specimen No. 997. Nat. size.  
Same locality and horizon etc. as the specimen reproduced in fig. 1.

#### Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *alc*, antero-lateral corner; *cd*, area overlapped by premedian plate; *cd*<sub>1</sub>, area overlapped by paranuchal-marginal plate; *cd*<sub>2</sub>, area overlapped by postmarginal plate; *cir*, semicircular pit-line; *d. end*<sub>2</sub>, dorsal opening of canal for endolymphatic duct; *ifc*<sub>1</sub>, upper infraorbital sensory canal groove; *ifc. b.*, posterior oblique cephalic pit-line groove; *lpr*, supraspiracular process; *mpg?*, probably middle pit-line of skull-roof (completely developed); *orb*, orbital notch; *p*, nasal process; *pnn*, paranasal notch; *pp*, posterior pit-line groove of skull-roof; *prh*<sub>1</sub>, lateral paired division of preorbital recess; *soc*<sub>2</sub>, anterior median unpaired section of supraorbital sensory canal grooves, the anterior median pit-line; *vep*, vertical pit-line groove of cheek.



## Plate 10.

### *Bothriolepis groenlandica* Heintz.

Figs. 1-4. Impression of the lower sides of four lateral plates. Specimens Nos. 1015, 1016, 1017 and 975 respectively. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 5. Imperfect impression of the upper side of a lateral plate. Specimen No. 1065. Nat. size.

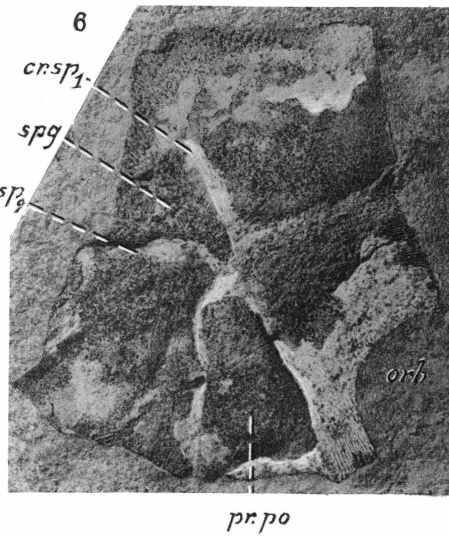
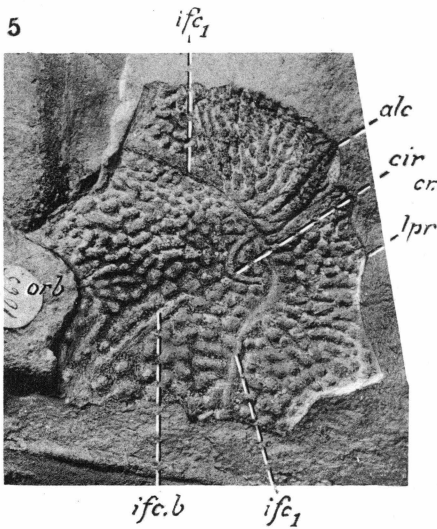
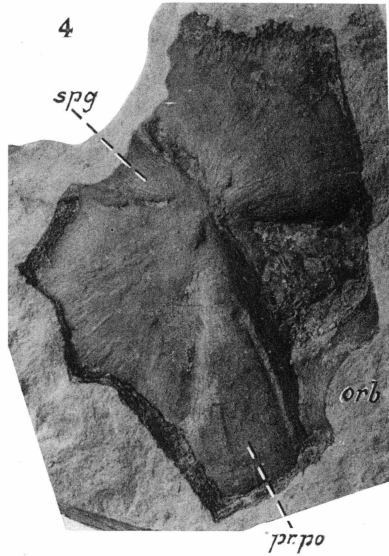
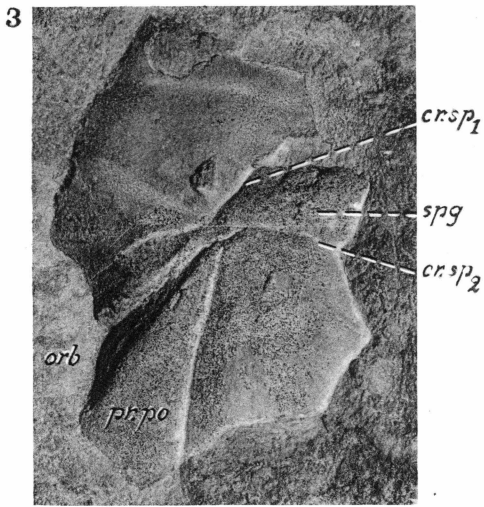
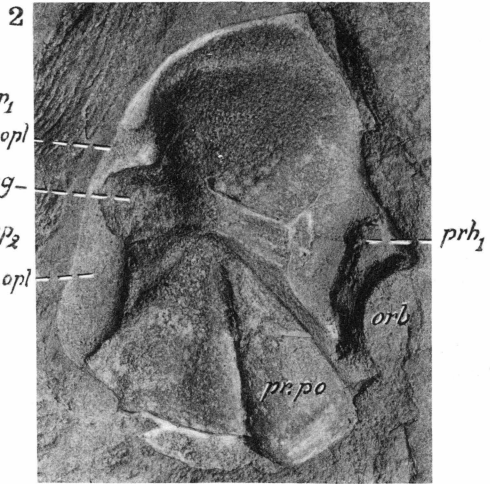
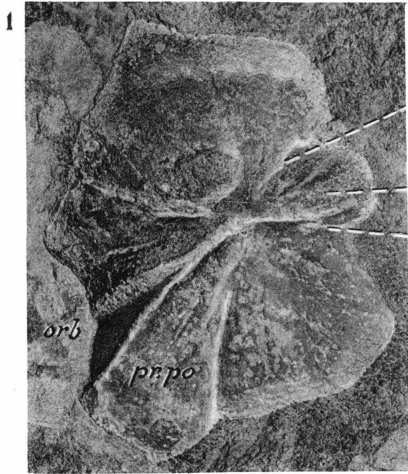
Same locality and horizon etc. as the specimens reproduced in figs. 1-4.

Fig. 6. Deficient impression of lower side of a small lateral plate. Specimen No. 1088a. Same specimen as in pl. 9, fig. 4.  $\times 2$ .

Locality, see pl. 9, fig. 4.

### Explanation of letters.

*alc*, antero-lateral corner; *a. opl*, area of attachment for extralateral (opercular) plate; *cir*, semicircular pit-line groove; *cr. sp<sub>1</sub>*, *cr. sp<sub>2</sub>*, prespiracular crista and postspiracular crista respectively; *ifc<sub>1</sub>*, upper infraorbital sensory canal groove; *ifc. b*, posterior oblique cephalic pit-line groove; *lpr*, supraspiracular process; *orb*, orbital notch; *prh<sub>1</sub>*, cast of lateral division of preorbital recess; *pr. po*, antero-lateral corner of otico-occipital depression developed for postorbital process of otic region of endocranium (impression); *spg*, spiracular groove (impression).



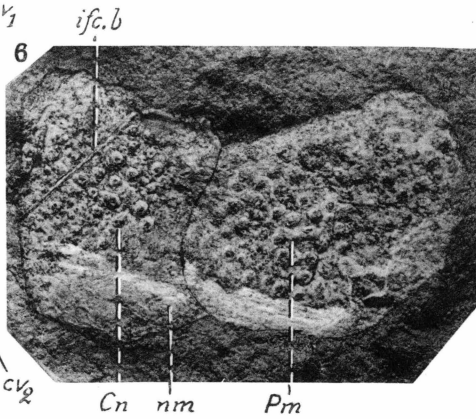
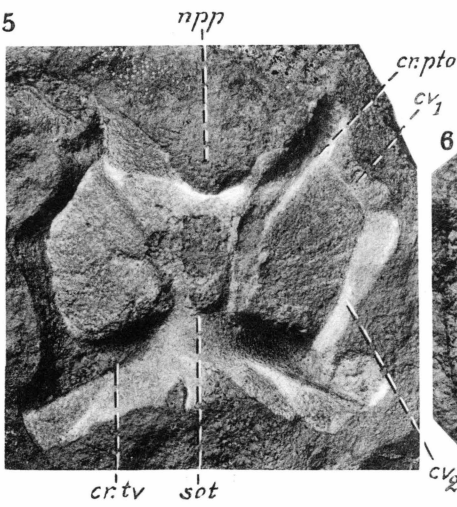
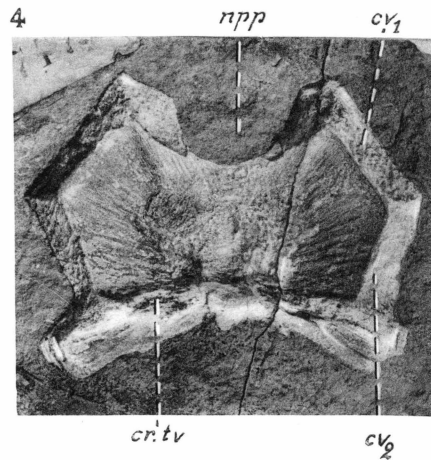
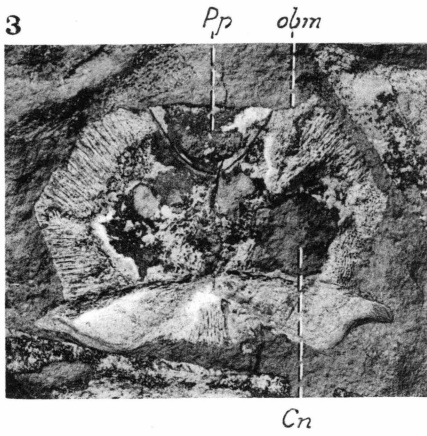
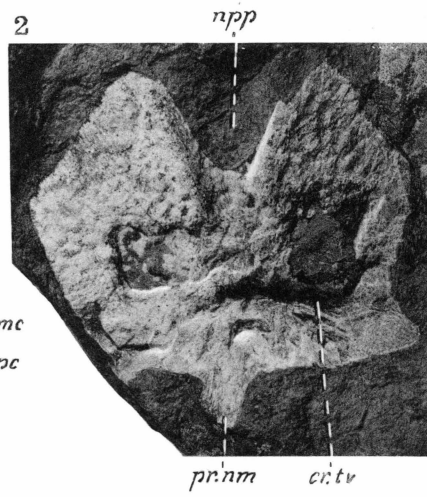
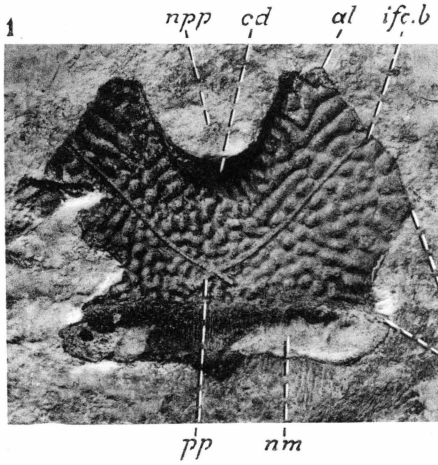
## Plate 11.

### *Bothriolepis groenlandica* Heintz.

- Fig. 1. Imperfect impression of the upper side of a centro-nuchal plate. Specimen No. 373. Nat. size.  
Gauss Peninsula, Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 2. Imperfect centro-nuchal plate in dorsal aspect. The bone tissue partly weathered away. Specimen No. 1112. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 3. Centro-nuchal plate with the postpineal plate attached. Dorsal aspect, but the bone-tissue largely weathered away. Specimen No. 435. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. S. side of Profile Ravine. Local talus 535-541 m. *Phyllolepis*-series. Expedition 1933.
- Figs. 4, 5. Two centro-nuchal plates preserved as impressions of their lower sides. Specimens Nos. 1110 and 422 respectively. Nat. size.  
Same locality and horizon etc. as the centro-nuchal plate in fig. 1.
- Fig. 6. A postero-lateral part of a small head-shield showing parts of the centro-nuchal plate and of the paranuchal-marginal plate as well. Impression of the upper side. Specimen No. 1089a.  $\times 2$ .  
Same locality and horizon as the specimen reproduced in fig. 2.

#### Explanation of letters.

*Cn*, centro-nuchal plate; *Pm*, paranuchal-marginal plate; *Pp*, postpineal plate; *al*, antero-lateral corner of centro-nuchal plate; *cd*, area overlapped by postpineal plate; *cr. pto*, postorbital crista; *cr. tv*, transverse nuchal crista; *cv<sub>1</sub>*, area overlapping lateral plate; *cv<sub>2</sub>*, area overlapping paranuchal-marginal plate; *ifc. b*, posterior oblique cephalic pit-line groove; *mc*, lateral corner of centro-nuchal plate; *nm*, obtected nuchal area (impression); *npp*, postpineal notch; *obm*, orbital facet of anterior margin of centro-nuchal plate; *pc*, postero-lateral corner of centro-nuchal plate; *pp*, posterior pit-line groove of skull-roof; *pr. nm*, posterior median process; *sol*, supraotic thickening (impression).



## Plate 12.

### *Bothriolepis groenlandica* Heintz.

Fig. 1. Impression of the upper side of a fairly small, somewhat imperfect head-shield. Specimen No. 1009.  $\times \frac{3}{2}$ . Plaster cast of this specimen reproduced in pl. 13, fig. 1.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Part of a head-shield. Impression of the upper side. Specimen No. 1195. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. The spur E. of Crossopterygian Ravine. Loose 545 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *Pmg*, post-marginal plate; *Pp*, postpineal plate; *Prm*, premedian plate; *cd*, area overlapped by premedian plate (impression); *cir*, semicircular pit-line groove; *ifc<sub>a</sub>*, upper infraorbital sensory canal groove; *ifc. b*, posterior oblique cephalic pit-line groove; *mpg*, middle pit-line groove of skull-roof; *nm*, obtected nuchal area; *pp*, posterior pit-line groove of skull-roof; *pr. nm*, posterior median process of centro-nuchal plate; *soa*, subobstantic area; *stc*, supratemporal pit-line groove; *vcp*, vertical pit-line groove of cheek.



### Plate 13.

#### *Bothriolepis groenlandica* Heintz.

Fig. 1. Plaster cast of a fairly small, somewhat imperfect head-shield. The specimen reproduced in pl. 12, fig. 1.  $\times \frac{3}{2}$ .

Fig. 2. Part of the preorbital division of a fairly small head-shield. Dorsal aspect. Specimen No. 1116c.  $\times \frac{3}{2}$ .

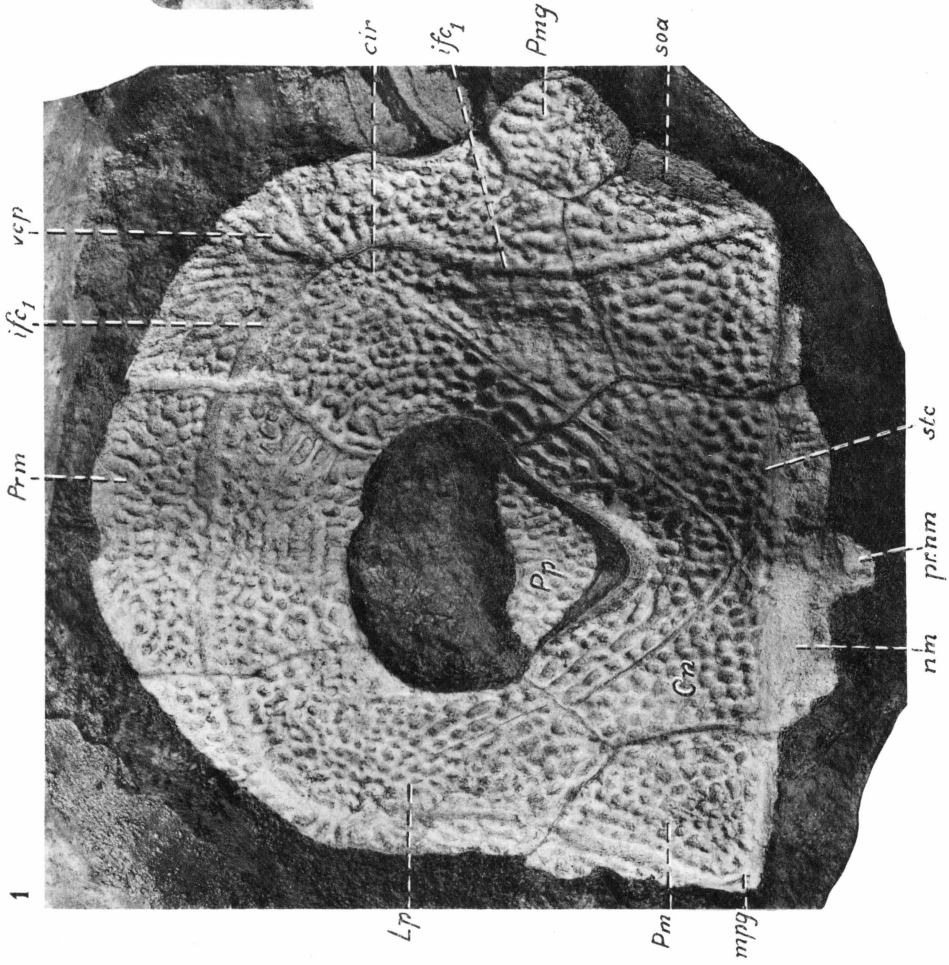
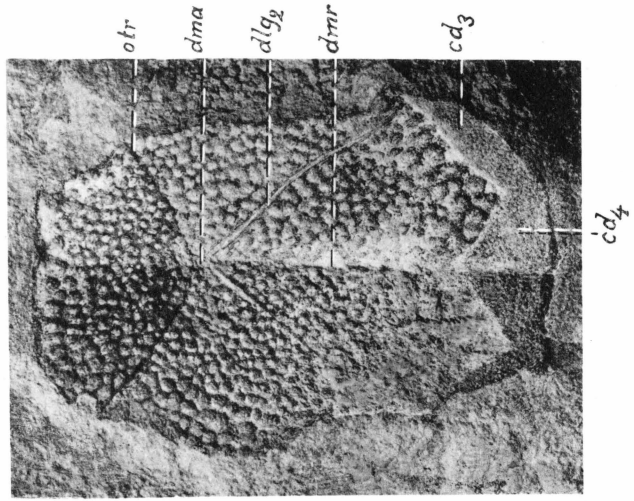
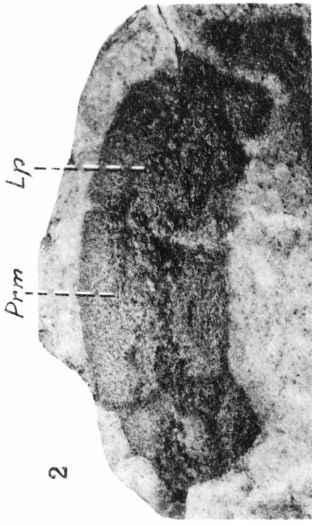
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Somewhat E. of Crossopterygian Ravine. Loose 543 m. *Phyllolepis*-series. Expedition 1934.

Fig. 3. Imperfect impression of the upper side of a small anterior median dorsal plate. Specimen No. 1090.  $\times 2$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*Cn*, centro-nuchal plate; *Lp*, lateral plate; *Pm*, paranuchal-marginal plate; *Pmg*, post-marginal plate; *Pp*, postpineal plate; *Prm*, premedian plate; *cd<sub>3</sub>*, area overlapped by mixilateral plate; *cd<sub>4</sub>*, area overlapped by posterior median dorsal plate; *cir*, semicircular pit-line groove; *dlg<sub>2</sub>*, posterior oblique abdominal pit-line groove; *dma*, tergal angle; *dmr*, dorsal median ridge; *ifc*, upper infraorbital sensory canal groove; *mpg*, middle pit-line groove of skull-roof; *nm*, obstructed nuchal area; *otr*, oblique transverse ridge marking the course of the anterior oblique abdominal pit-line groove (impression); *pr. nm*, posterior median process of centro-nuchal plate; *soa*, subobstantic area; *stc*, supratemporal pit-line groove; *vcp*, vertical pit-line groove of cheek.



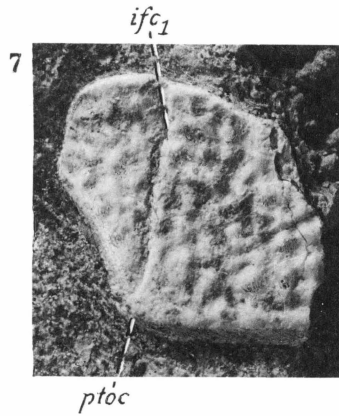
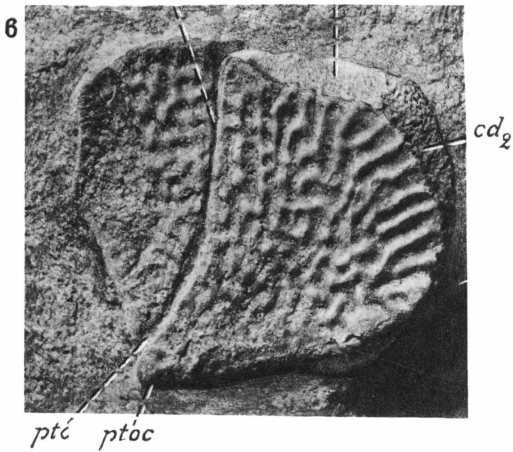
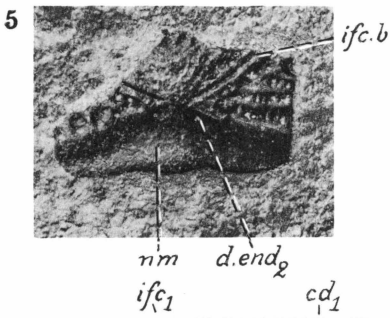
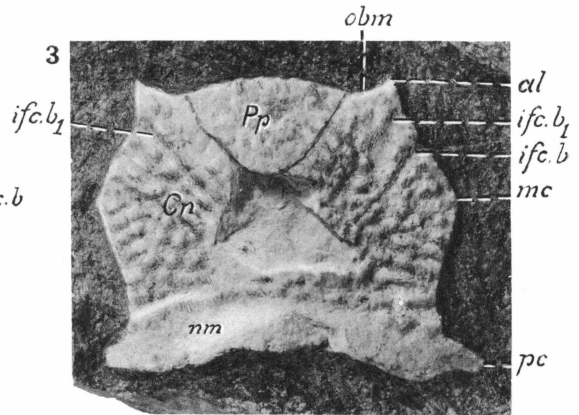
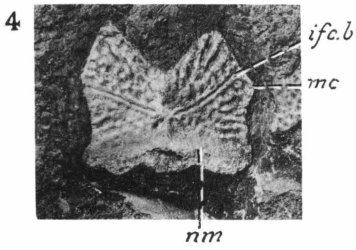
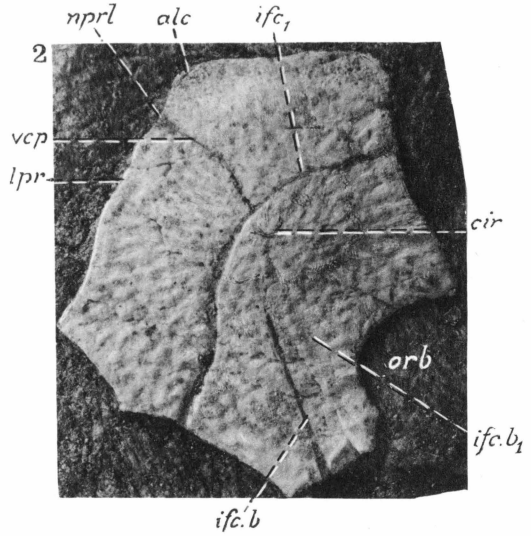
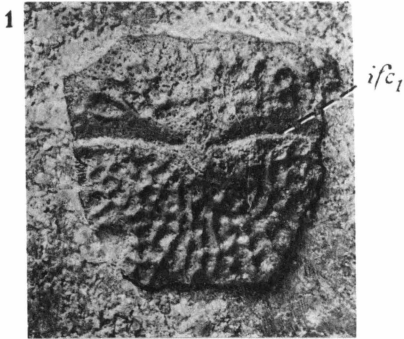
## Plate 14.

*Bothriolepis jarviki* n.sp.

- Fig. 1. Premedian plate in dorsal aspect. Specimen No. 1208.  $\times 2$ .  
Ymer Island. Dusén Fjord, N. side. Profile A, 435 m. E. Nielsen 1936.
- Fig. 2. Left lateral plate. Dorsal aspect. Specimen No. 1213.  $\times \frac{3}{2}$ . Ymer Island. Dusén Fjord, N. side. Profile B, about 977 m. E. Nielsen 1936.
- Fig. 3. Centro-nuchal plate with the postpineal plate attached. Dorsal aspect. Specimen No. 1214.  $\times \frac{3}{2}$ .  
Ymer Island. Dusén Fjord, N. side. Profile B, about 977 m. E. Nielsen 1936.
- Fig. 4. Small centro-nuchal plate. Dorsal aspect. Specimen No. 1210. Nat. size.  
Ymer Island. Dusén Fjord, N. side. Profile A, 435 m. E. Nielsen 1936.
- Fig. 5. Posterior part of a centro-nuchal plate. Dorsal aspect. Specimen No. 1211.  $\times 2$ .  
Ymer Island. Dusén Fjord, N. side. Profile A, 435 m. E. Nielsen 1936.
- Fig. 6. Somewhat deficient paranuchal-marginal plate. Dorsal aspect. Specimen No. 1212.  $\times 2$ .  
Ymer Island. Dusén Fjord. N. side. E. Nielsen 1936.
- Fig. 7. A deficient paranuchal-marginal plate. Dorsal aspect. Specimen No. 1217.  $\times 2$ .  
Ymer Island. Dusén Fjord, N. side. Profile A, 435 m. E. Nielsen 1936.

### Explanation of letters.

*Cn*, centro-nuchal plate; *Pp*, postpineal plate; *al*, antero-lateral corner of centro-nuchal plate; *alc*, antero-lateral corner of lateral plate (and of head-shield as a whole); *cd*<sub>1</sub>, area overlapped by lateral plate; *cd*<sub>2</sub>, area overlapped by centro-nuchal plate; *cir*, semicircular pit-line groove; *d. end*<sub>2</sub>, external opening of canal for endolymphatic duct; *ifc*<sub>1</sub>, upper infraorbital sensory canal groove; *ifc. b*, posterior oblique cephalic pit-line groove; *lpr*, supraspiracular process; *mc*, lateral corner of centro-nuchal plate; *nm*, obtected nuchal area; *npri*, prelateral notch; *obm*, orbital facet of anterior margin of centro-nuchal plate; *orb*, orbital notch; *pc*, postero-lateral corner of centro-nuchal plate; *ptc*, cephalic division of lateral line; *ptoc*, postobstantic corner; *vcp*, vertical pit-line groove of cheek.



## Plate 15.

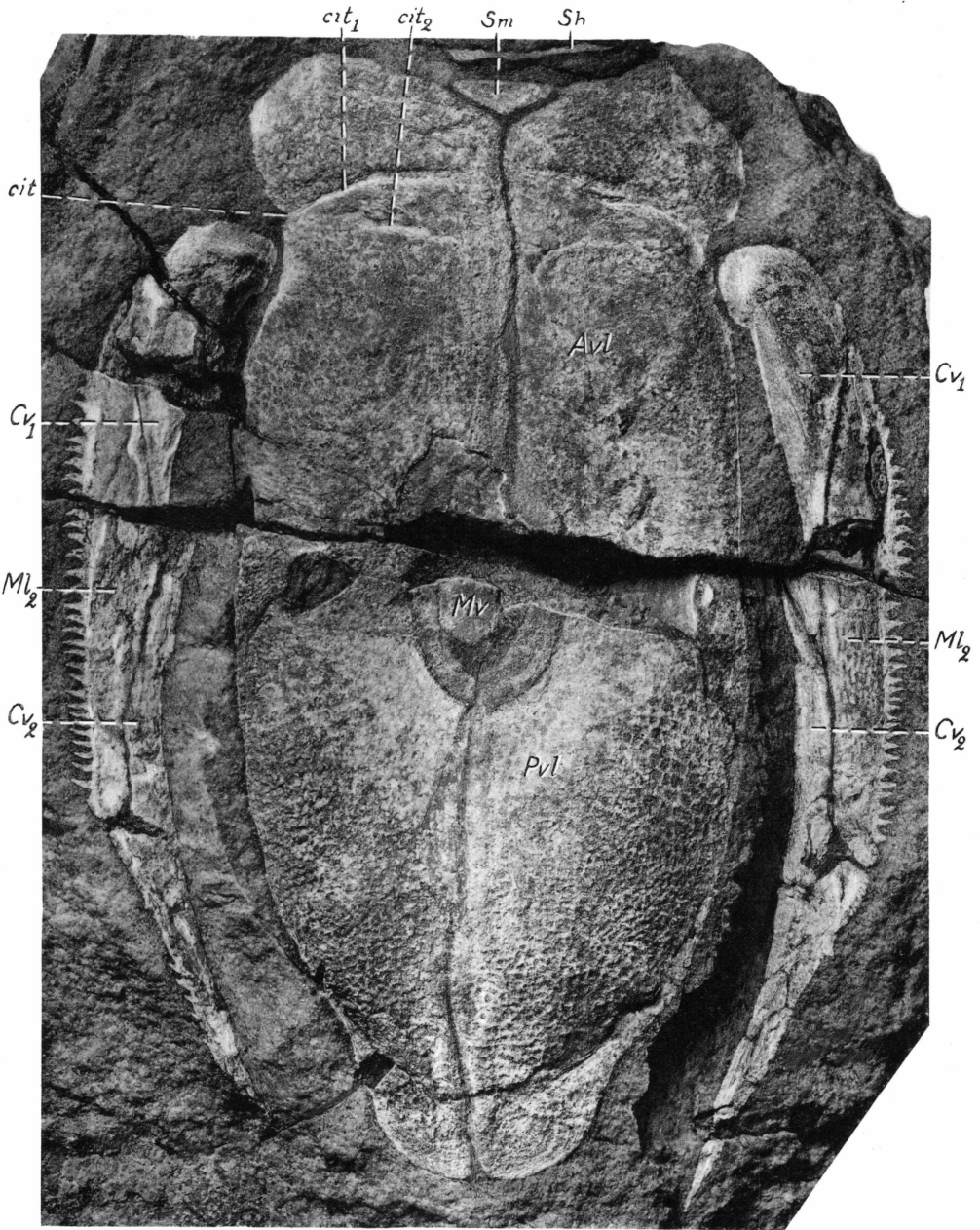
*Bothriolepis groenlandica* Heintz.

Specimen showing the ventral wall of the trunk-armour and the pectoral fins. Ventral aspect. Specimen No. 1116a.  $\times \frac{3}{2}$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Somewhat E. of Crossopterygian Ravine. Loose 543 m. *Phyllolepis*-series. Expedition 1934.

### Explanation of letters.

*Avl*, anterior ventro-lateral plate; *Cv<sub>1</sub>*, ventral central plate 1; *Cv<sub>2</sub>*, ventral central plate 2; *Ifg?*, inferognathal?; *Ml<sub>2</sub>*, lateral marginal plate 2; *Mv*, median ventral plate; *Pvl*, posterior ventro-lateral plate; *Sh*, subhyoideal plate?; *Sm*, semilunar plate; *al*, antero-lateral corner of ventral lamina of anterior ventro-lateral plate; *cit*, crista transversalis interna anterior (impression); *cit<sub>1</sub>*, postbranchial crest (impression); *cit<sub>2</sub>*, crista transversalis interna anterior, ventral division (impression); *crtp*, crista transversalis interna posterior; *prc*, prepectoral corner.



**Plate 16.**

*Bothriolepis groenlandica* Heintz.

Impression of the ventral wall of a trunk-armour with pectoral fins. Counterpart of the specimen reproduced in pl. 15.  $\times \frac{3}{2}$ .

Explanation of letters.

For explanation of letters see pl. 15.



**Plate 17.**

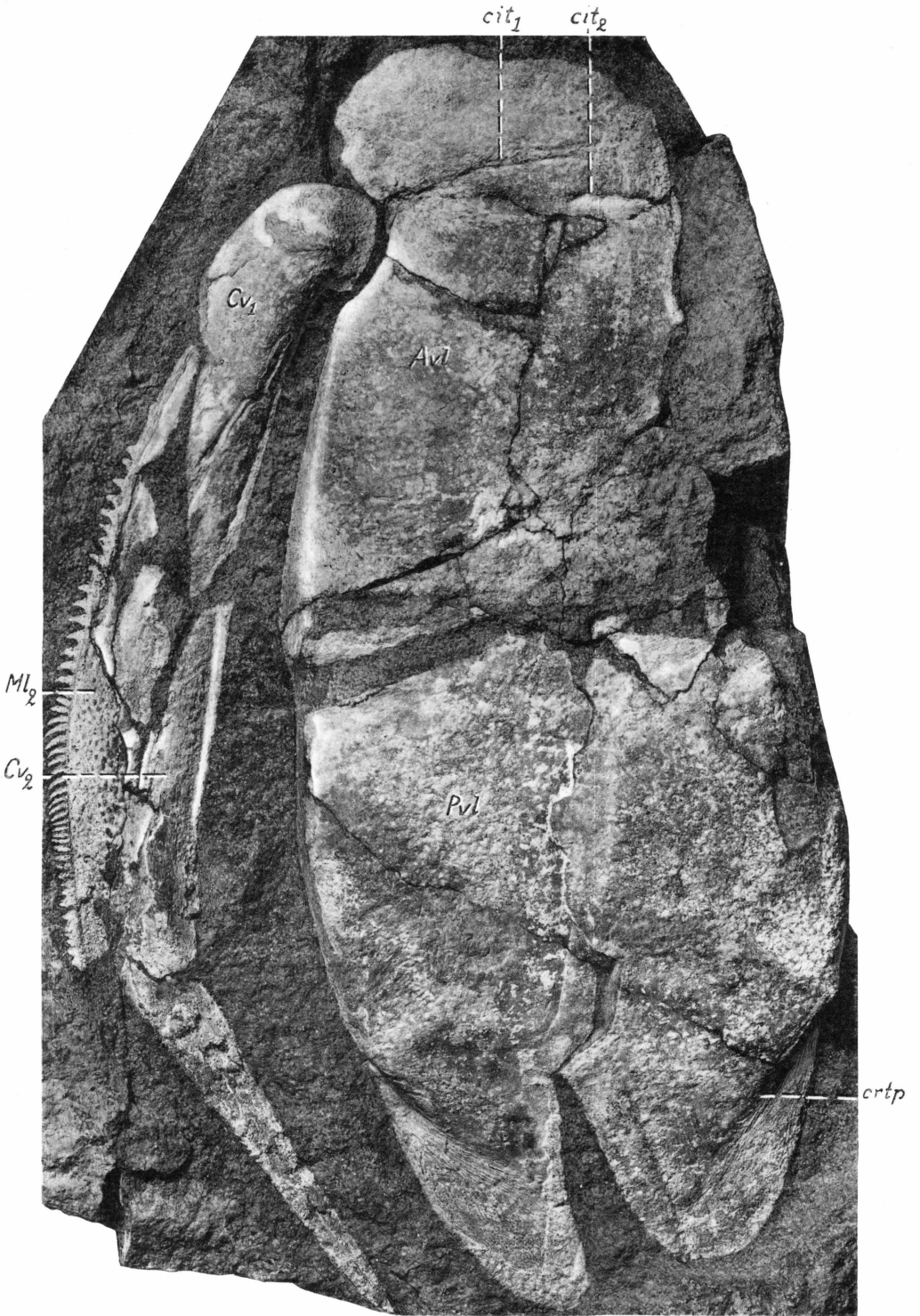
*Bothriolepis groenlandica* Heintz.

Imperfect ventral wall of a trunk-armour with the right pectoral fin attached. Ventral aspect. Specimen No. 1118. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Somewhat E. of Crossopterygian Ravine. Loose 543 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

For explanation of index letters see pl. 15.



**Plate 18.**

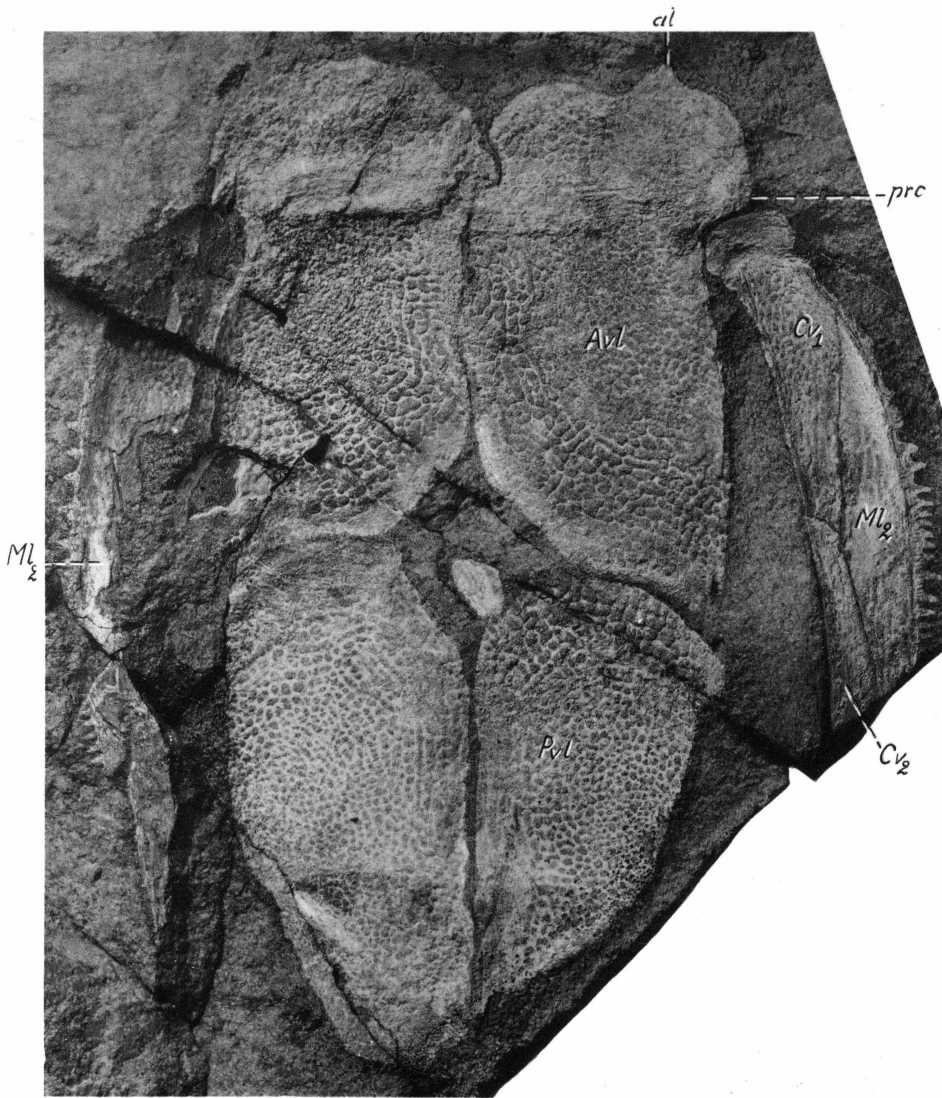
*Bothriolepis groenlandica* Heintz.

Impression of the ventral wall of a trunk-armour and of certain parts of the pectoral fins. Specimen No. 1122a.  $\times \frac{3}{2}$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Somewhat E. of Crossopterygian Ravine. Loose 543 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

For explanation of index letters see pl. 15.



### Plate 19.

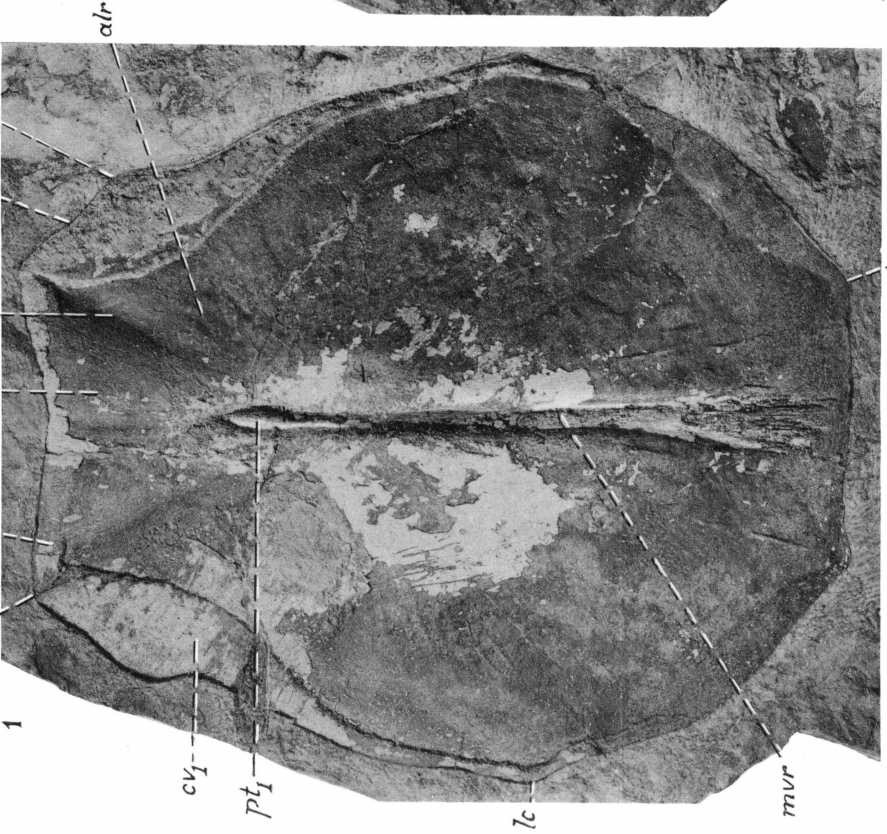
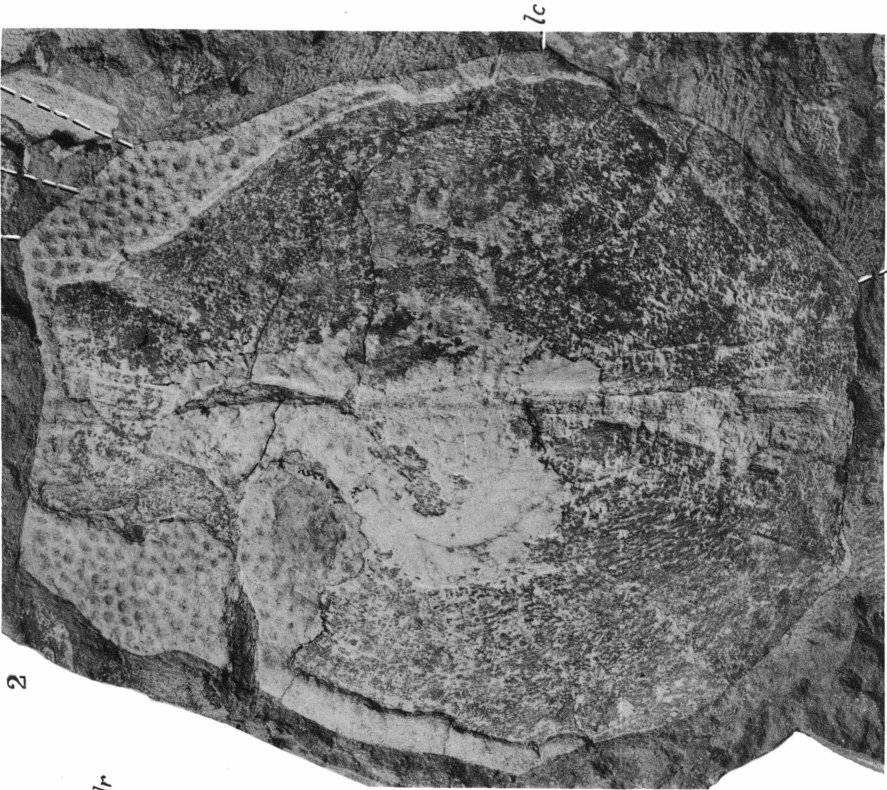
*Bothriolepis groenlandica* Heintz.

Figs. 1, 2. Anterior median dorsal plate in dorsal aspect. In fig. 1 etched with acid so as to show the impression of its lower side. Specimen No. 1082a. The counterpart is reproduced in pl. 20, fig. 1. Nat. size.

Gauss Peninsula. Glacier Valley, bend of brook, W. slope of ravine. Horizon 422 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*a*, antero-lateral corner; *alr*, postlevator thickening (impression); *cr. pl*, postlevator crista (impression); *cv<sub>1</sub>*, area overlapping anterior dorso-lateral plate; *f. retr*, levator fossa (impression); *lc*, lateral corner; *mvr*, ventral median ridge; *npn*, postnuchal notch; *pcl*, postero-lateral corner; *pr. pl*, external postlevator process; *pt<sub>1</sub>*, anterior ventral pit; *sna*, supranuchal area.



## Plate 20.

*Bothriolepis groenlandica* Heintz.

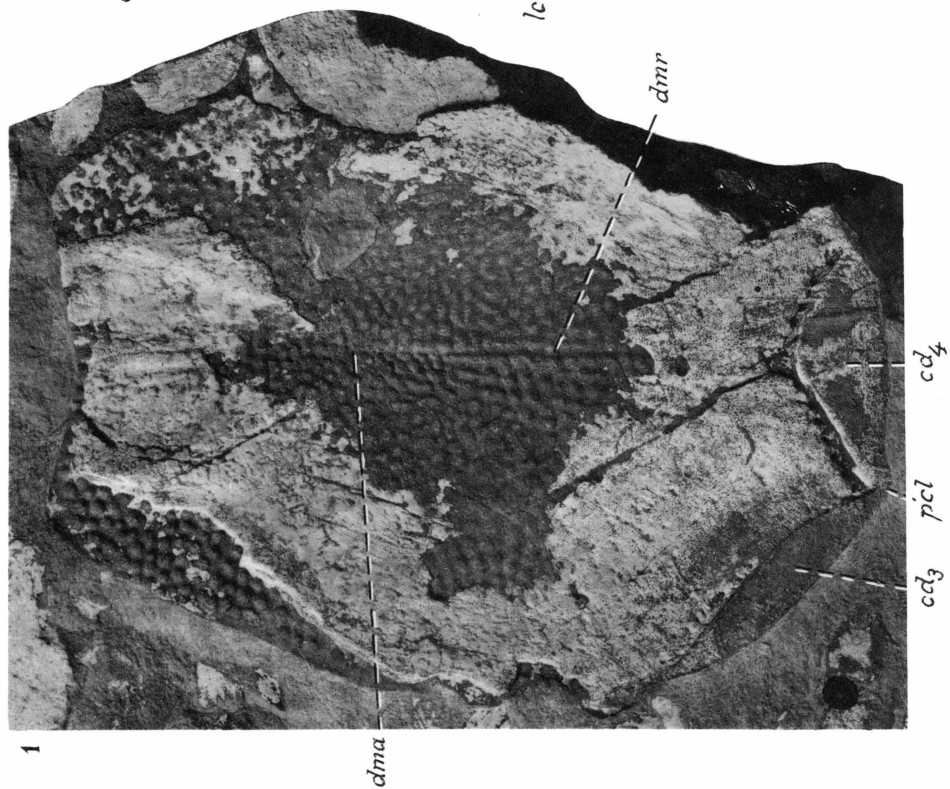
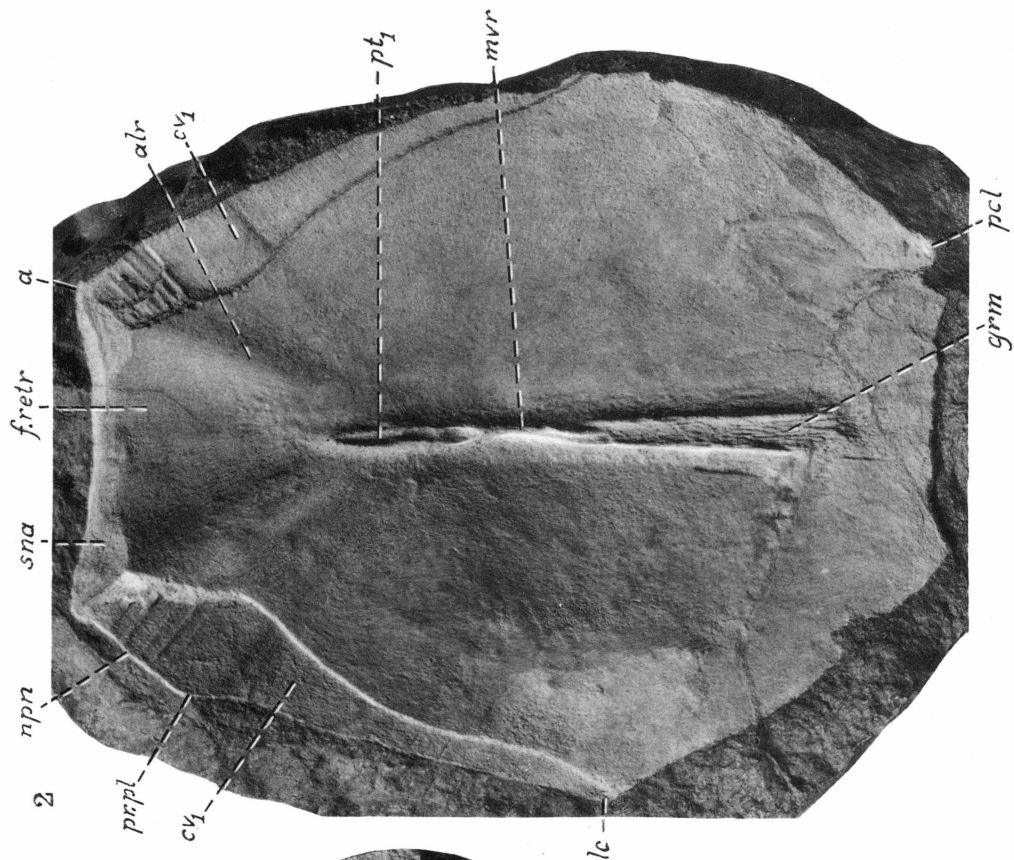
Fig. 1. Counterpart of the anterior median dorsal plate reproduced in pl. 19. The upper face of the plate shown partly as impression. Nat. size.

Fig. 2. Anterior median dorsal plate in ventral view. Plaster cast of specimen No. 410. Nat. size.

Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.

### Explanation of letters.

*a*, antero-lateral corner; *alr*, postlevator thickening; *cd<sub>3</sub>*, area overlapped by mixilateral plate; *cd<sub>4</sub>*, area overlapped by posterior median dorsal plate; *cv<sub>1</sub>*, area overlapping anterior dorso-lateral plate; *dma*, tergal angle; *dmr*, dorsal median ridge; *f. retr.*, levator fossa; *gm*, ventral median groove; *lc*, lateral corner; *mvr*, median ventral ridge; *npr*, postnuchal notch; *pcl*, postero-lateral corner; *pr. pl.*, external postlevator process; *pl<sub>1</sub>*, anterior ventral pit; *sna*, supranuchal area.



## Plates 21, 22.

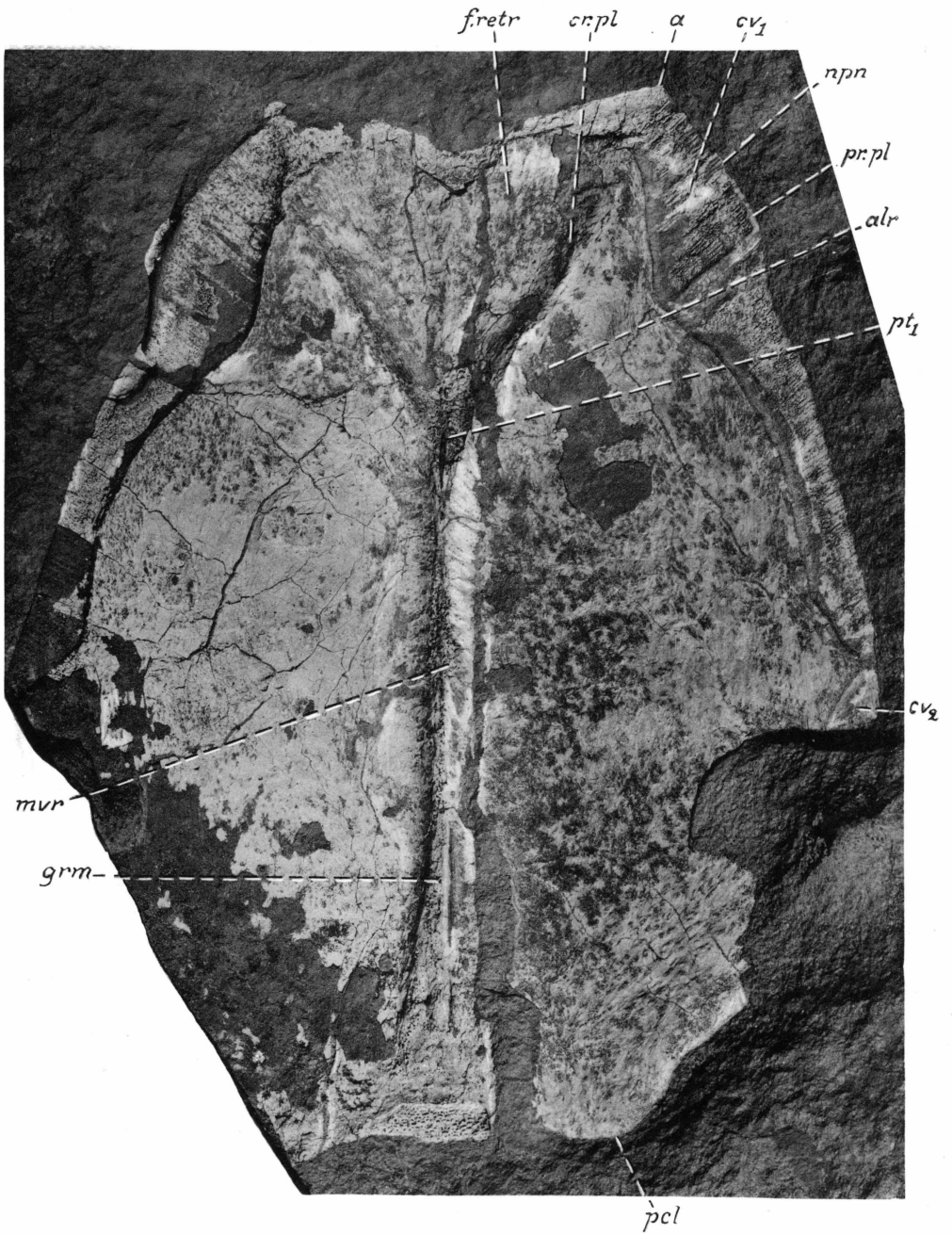
### *Bothriolepis groenlandica* Heintz.

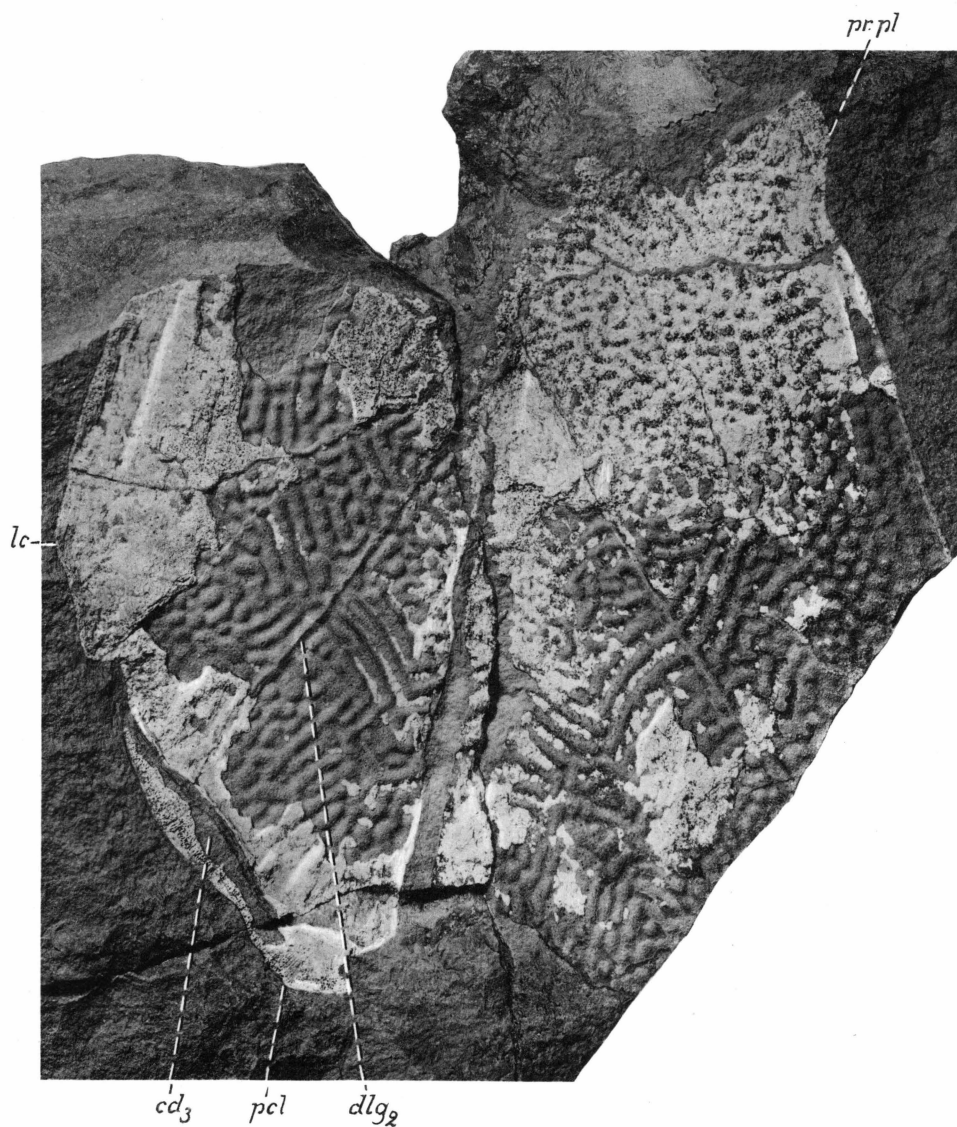
Large anterior median dorsal plate. Pl. 21, the plate in dorsal aspect (the lower side partly preserved as impression). Pl. 22, part of the dorsal side of the plate preserved mainly as impression. Specimen No. 1191. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*a*, antero-lateral corner; *alr*, postlevator thickening; *cd*<sub>3</sub>, area overlapped by mixilateral plate; *cr. pl*, postlevator crest (impression); *cv*<sub>1</sub>, area overlapping anterior dorso-lateral plate; *cv*<sub>2</sub>, area overlapping an anterior part of the mixilateral plate; *dlg*<sub>2</sub>, posterior oblique abdominal pit-line groove; *f. retr*, levator fossa (impression); *grm*, ventral median groove (impression); *lc*, lateral corner; *mvr*, median ventral ridge; *npr*, postnuchal notch; *pcl*, postero-lateral corner; *pr. pl*, external postlevator process; *pt*<sub>1</sub>, anterior ventral pit.





**Plate 23.**

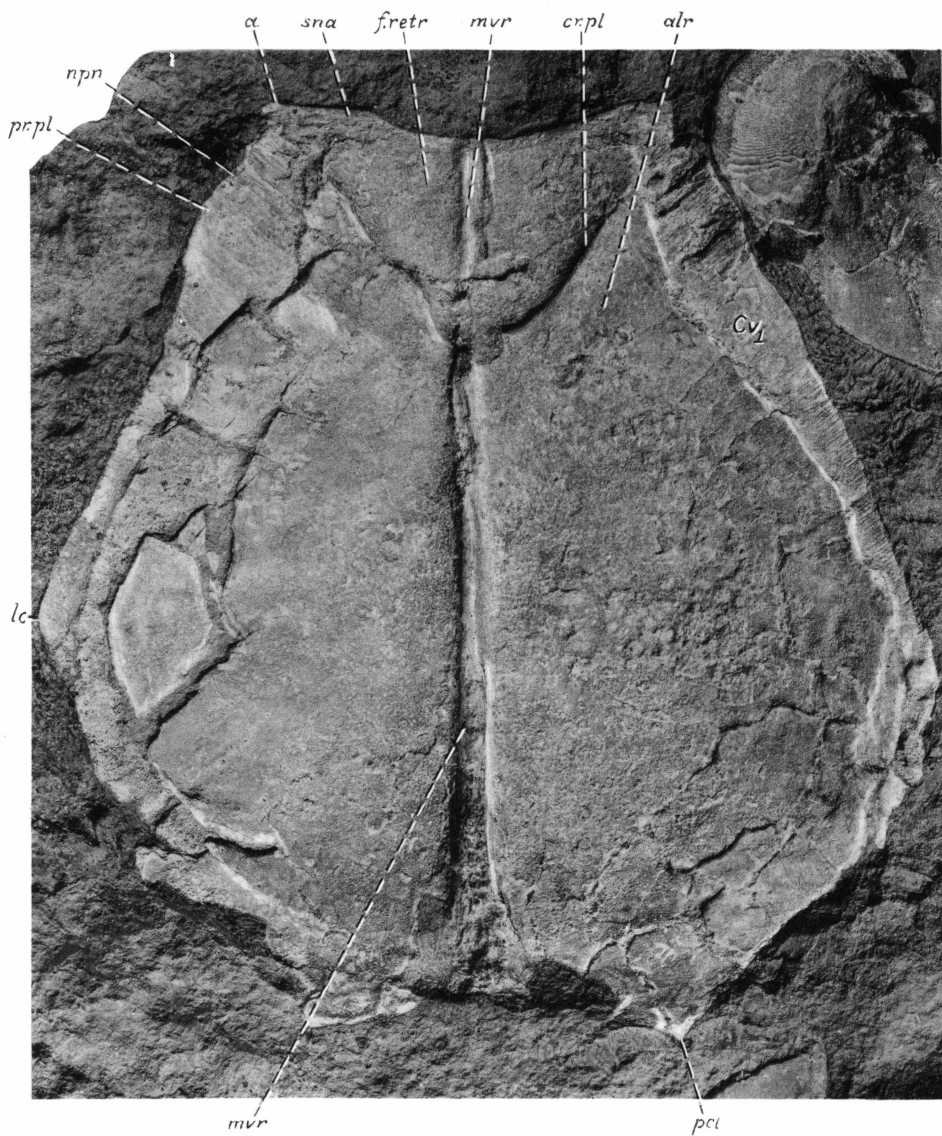
*Bothriolepis groenlandica* Heintz.

Very large anterior median dorsal plate preserved as an impression of its lower side. Specimen No. 1010. Somewhat diminished.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

*a*, antero-lateral corner; *alr*, postlevator thickening; *cr. pl*, postlevator crista (impression); *cv<sub>1</sub>*, area overlapping anterior dorso-lateral plate; *f. retr*, levator fossa; *lc*, lateral corner; *mvr*, median ventral ridge; *npr*, postnuchal notch; *pcl*, postero-lateral corner; *pr. pl*, external postlevator process; *sna*, supranuchal area.



## Plate 24.

### *Bothriolepis groenlandica* Heintz.

Fig. 1. Anterior median dorsal plate in dorsal aspect. To a large extent preserved as an impression of the lower side. Specimen No. 1162. Nat. size.

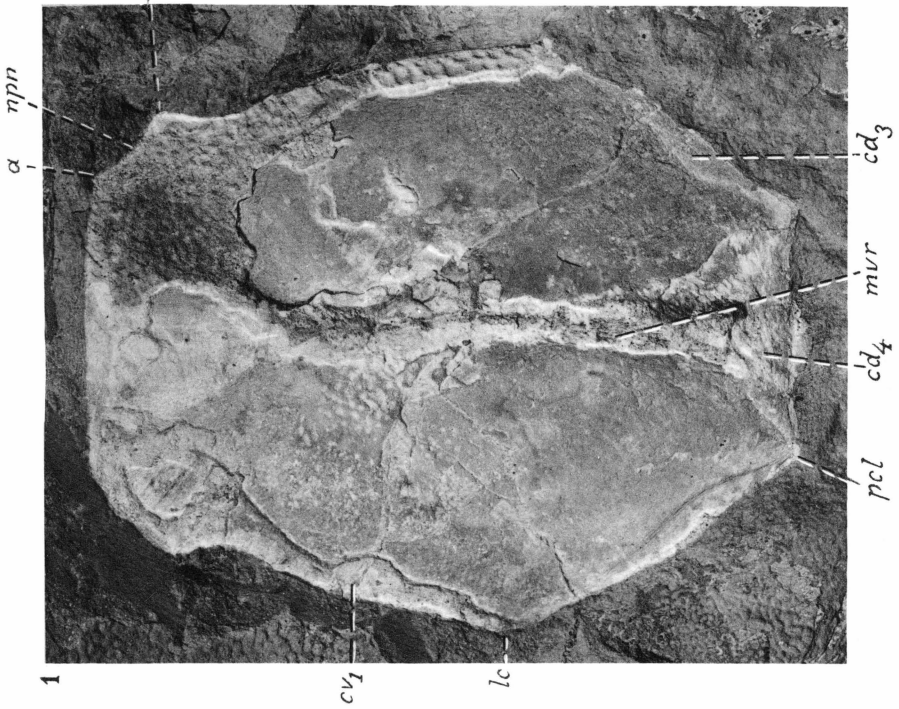
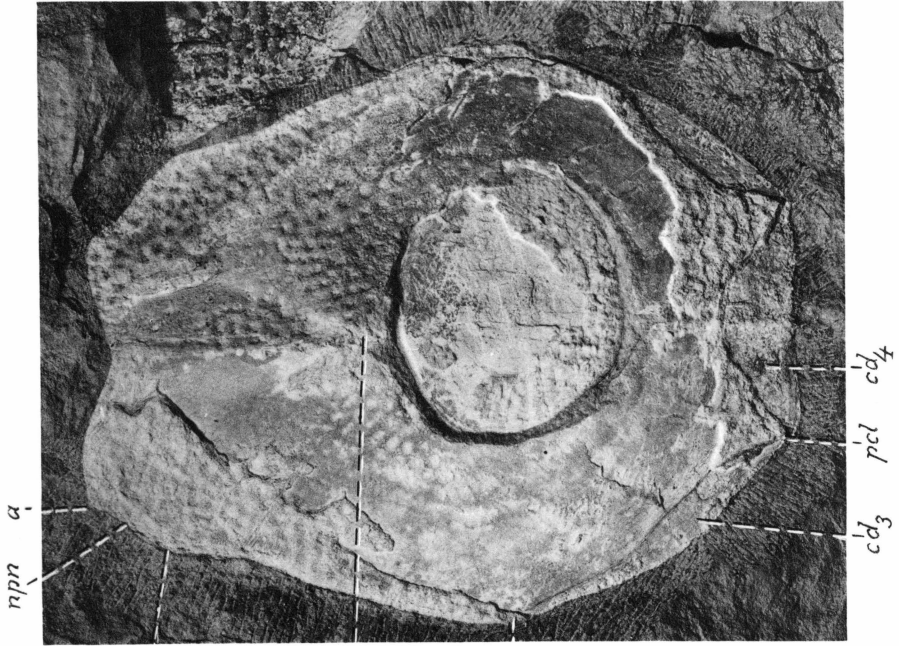
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Anterior median dorsal plate in dorsal aspect. The bone-tissue partly weathered away so that the lower face is shown as an impression in the rock. A middle part of the plate missing. Specimen No. 1192. Nat. size.

Same locality, horizon etc. as the specimen in the preceding fig.

#### Explanation of letters.

*a*, antero-lateral corner; *cd*<sub>3</sub>, area overlapped by mixilateral plate; *cd*<sub>4</sub>, area overlapped by posterior median dorsal plate; *cv*<sub>1</sub>, area overlapping anterior dorso-lateral plate; *dma*, tergal angle; *lc*, lateral corner; *mvr*, median ventral ridge; *npn*, postnuchal notch; *pcl*, postero-lateral corner; *pr. pl*, external postlevator process.



## Plate 25.

### *Bothriolepis groenlandica* Heintz.

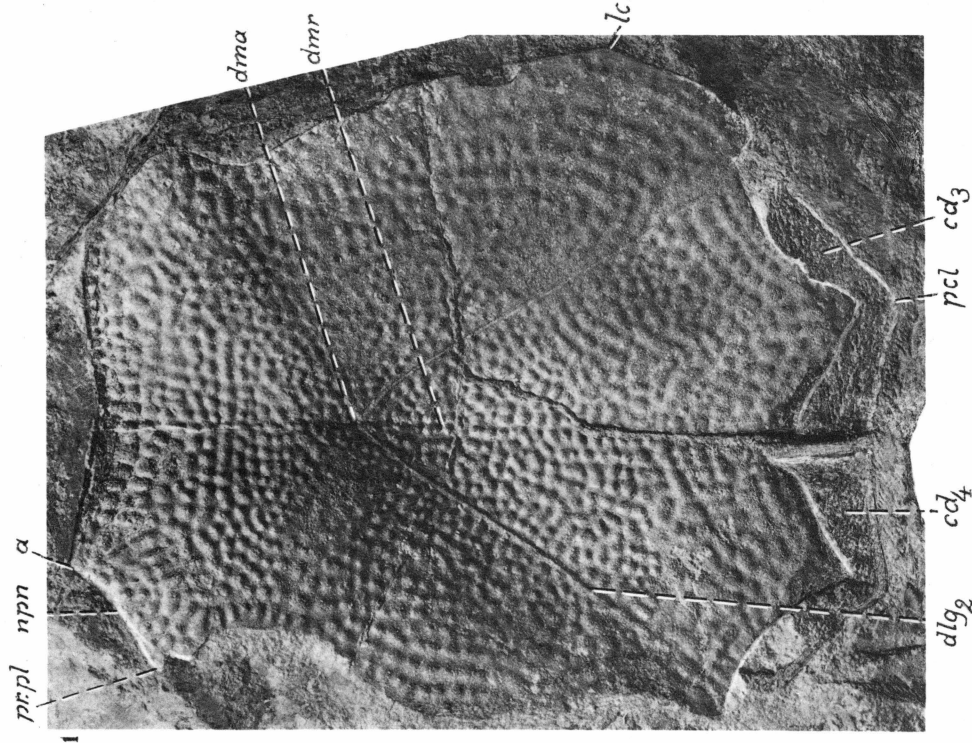
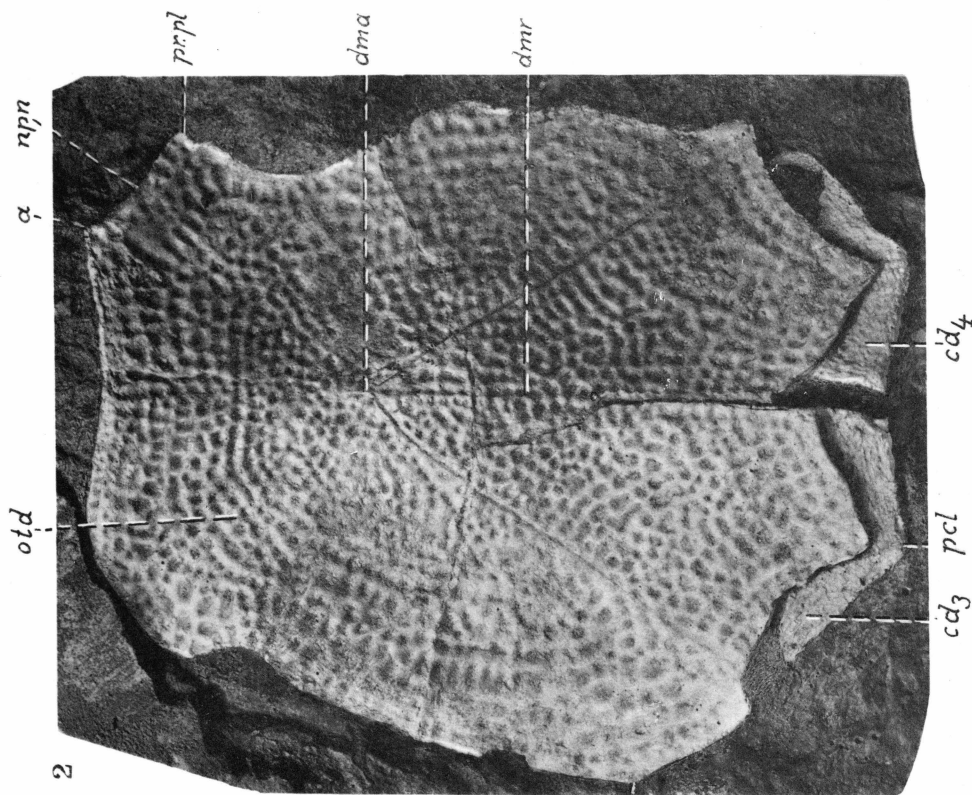
Fig. 1. Imperfect impression of the dorsal side of an anterior median dorsal plate. Specimen No. 1179. Nat. size.

Fig. 2. Plaster cast of the specimen in fig. 1. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. 526 m. *Phylolepis*-series. Expedition 1934.

#### Explanation of letters.

*a*, antero-lateral corner; *cd*<sub>3</sub>, area overlapped by mixilateral plate; *cd*<sub>4</sub>, area overlapped by posterior median dorsal plate; *dlg*<sub>2</sub>, posterior oblique abdominal pit-line groove; *dma*, tergal angle; *dmr*, dorsal median ridge; *lc*, lateral corner; *npr*, postnuchal notch; *old*, oblique transverse depression above postlevator thickening (*alr*); *pcl*, postero-lateral corner; *pr. pl*, external postlevator process.



## Plate 26.

### *Bothriolepis groenlandica* Heintz.

Fig. 1. Anterior median dorsal plate in dorsal aspect. Impression of the lower side of the plate. Specimen No. 1176. Nat. size.

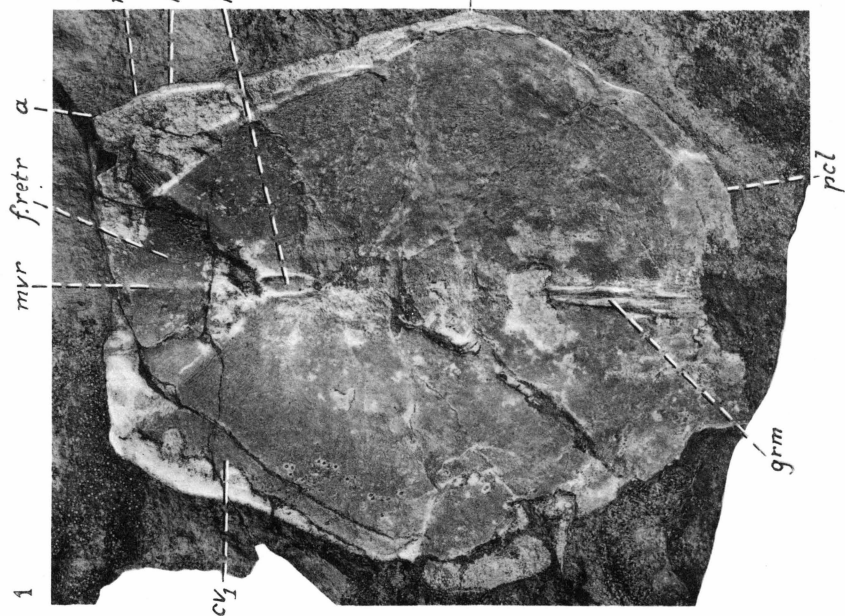
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Posterior parts of a large anterior median dorsal plate preserved to a certain extent as an impression of its dorsal side. Worthy of notice is that this plate seems to be entirely devoid of ornament. Specimen No. 1197. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480–550 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*a*, antero-lateral corner; *cd*<sub>4</sub>, area overlapped by posterior median dorsal plate; *cv*<sub>1</sub>, area overlapping anterior dorso-lateral plate; *f. retr*, levator fossa; *lc*, lateral corner; *grm*, median ventral groove; *mvr*, median ventral ridge; *npr*, postnuchal notch; *pcl*, postero-lateral corner; *pr. pl*, external postlevator process; *pt*<sub>1</sub>, anterior ventral pit.



## Plate 27.

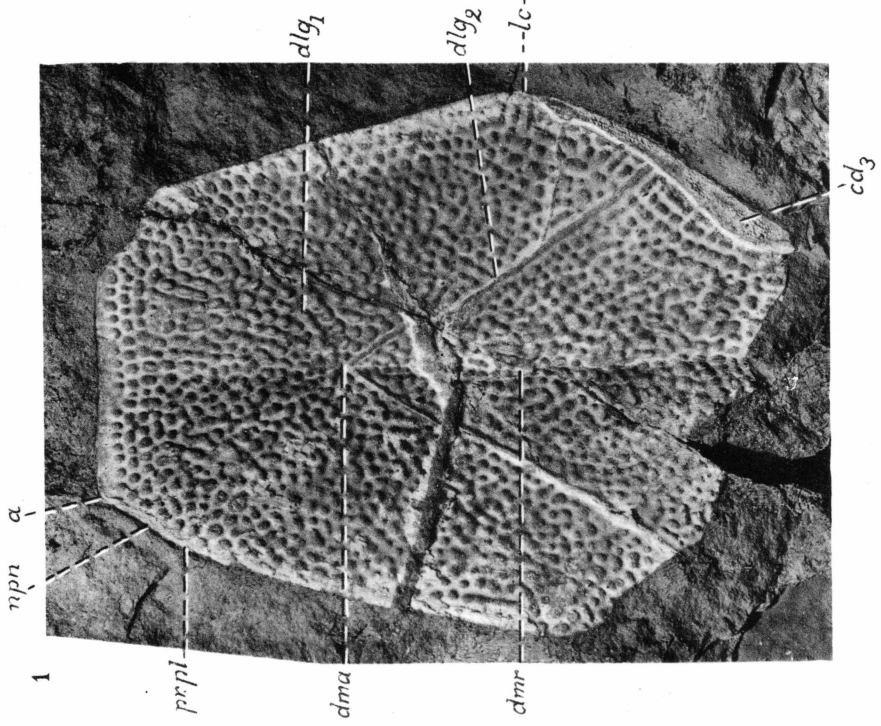
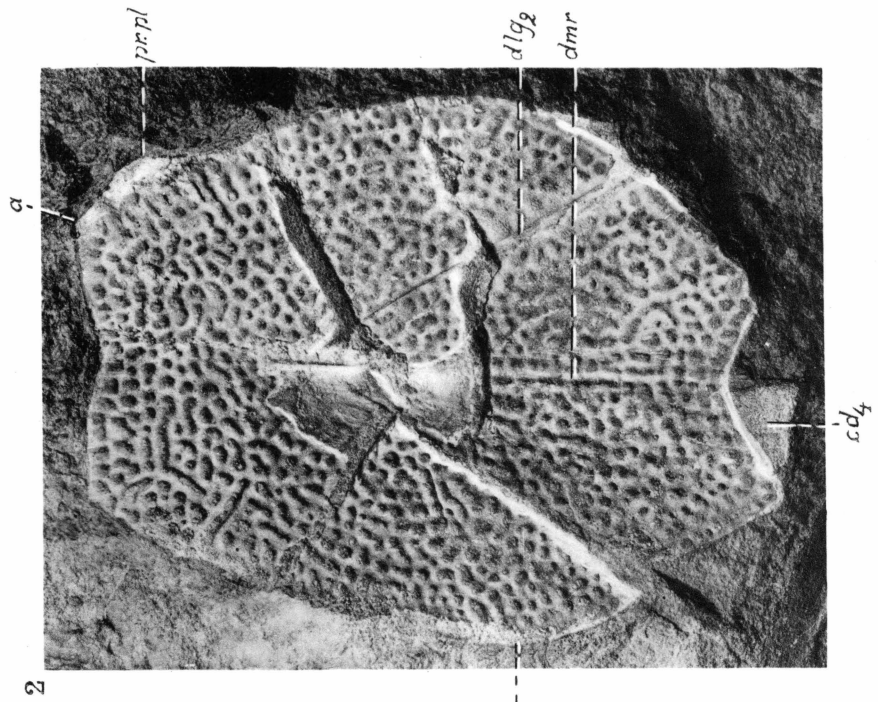
*Bothriolepis groenlandica* Heintz.

Figs. 1, 2. Deficient impressions of the dorsal sides of two anterior median dorsal plates. Specimens Nos. 1073 and 1011 respectively. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

*a*, antero-lateral corner; *cd*<sub>3</sub>, area overlapped by mixilateral plate; *cd*<sub>4</sub>, area overlapped by posterior median dorsal plate; *dlg*<sub>1</sub>, anterior oblique abdominal pit-line groove; *dlg*<sub>2</sub>, posterior oblique abdominal pit-line groove; *dma*, tergal angle; *dmr*, dorsal median ridge; *lc*, lateral corner; *npr*, postnuchal notch; *pr. pl*, external postlevator process.



**Plate 28.**

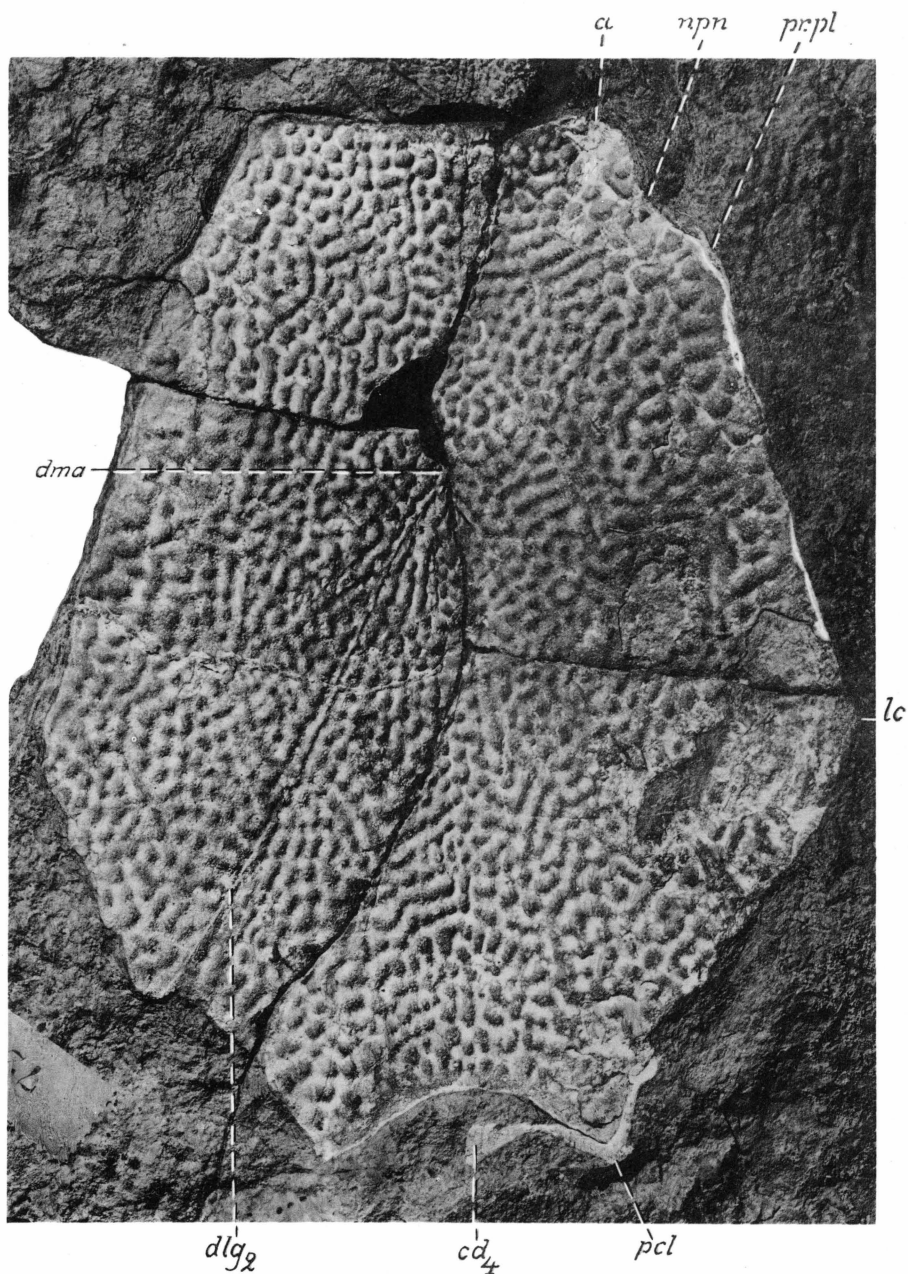
*Bothriolepis groenlandica* Heintz.

Impression of the dorsal side of a large anterior median dorsal plate. Specimen No. 1190. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

*a*, antero-lateral corner; *cd*<sub>4</sub>, area overlapped by posterior median dorsal plate; *dlg*<sub>2</sub>, posterior oblique abdominal pit-line groove; *lc*, lateral corner; *npr*, postnuchal notch; *pcl*, postero-lateral corner; *pr. pl*, external postlevator process.



**Plate 29.**

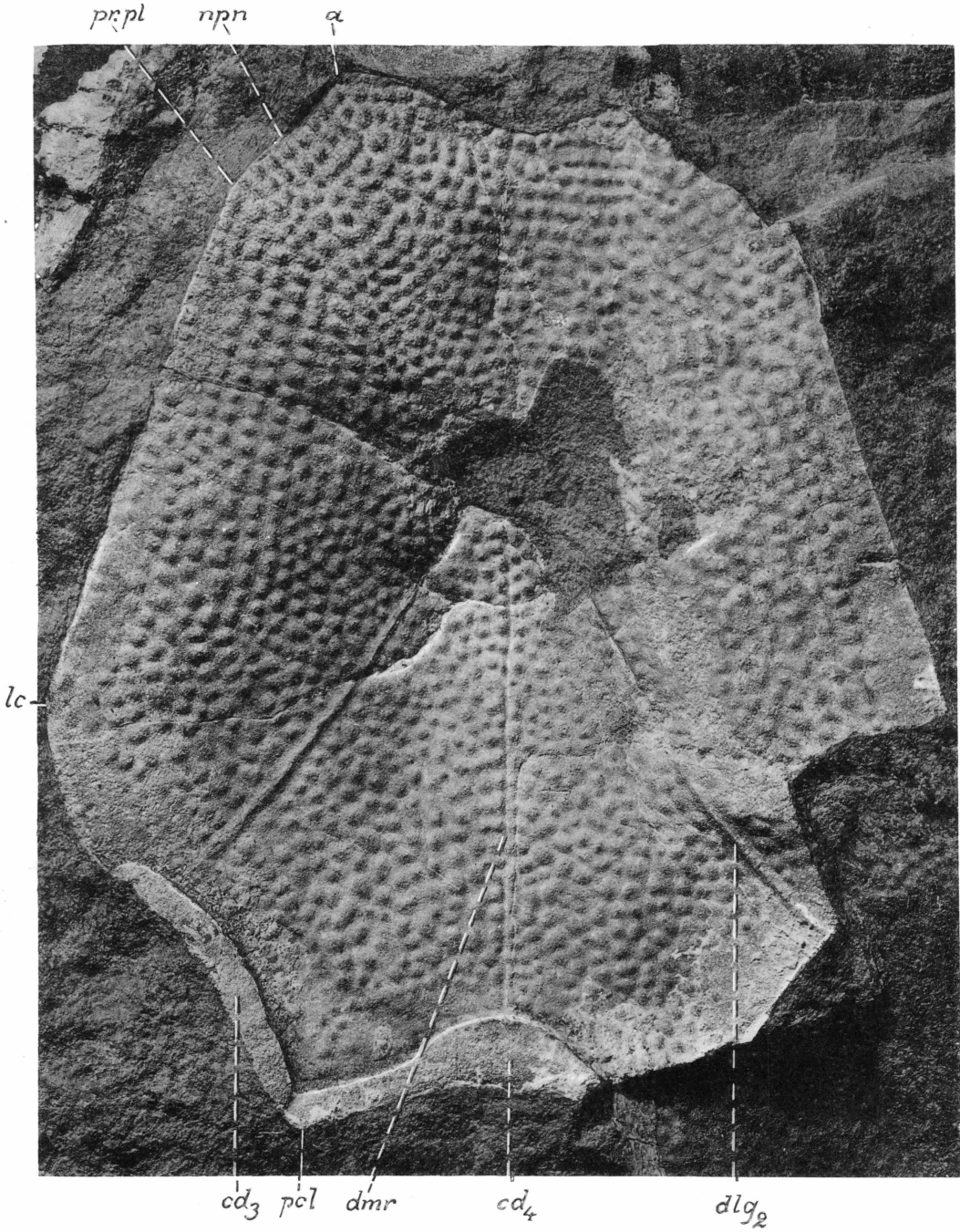
*Bothriolepis groenlandica* Heintz.

Somewhat deficient impression of the upper side of a large anterior median dorsal plate. Specimen No. 1157. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

*a*, antero-lateral corner; *cd*<sub>3</sub>, area overlapped by mixilateral plate; *cd*<sub>4</sub>, area overlapped by posterior median dorsal plate; *dlg*<sub>2</sub>, posterior oblique abdominal pit-line groove; *dmr*, dorsal median ridge; *lc*, lateral corner; *npn*, postnuchal notch; *pcl*, postero-lateral corner; *pr. pl*, external postlevator process.



### Plate 30.

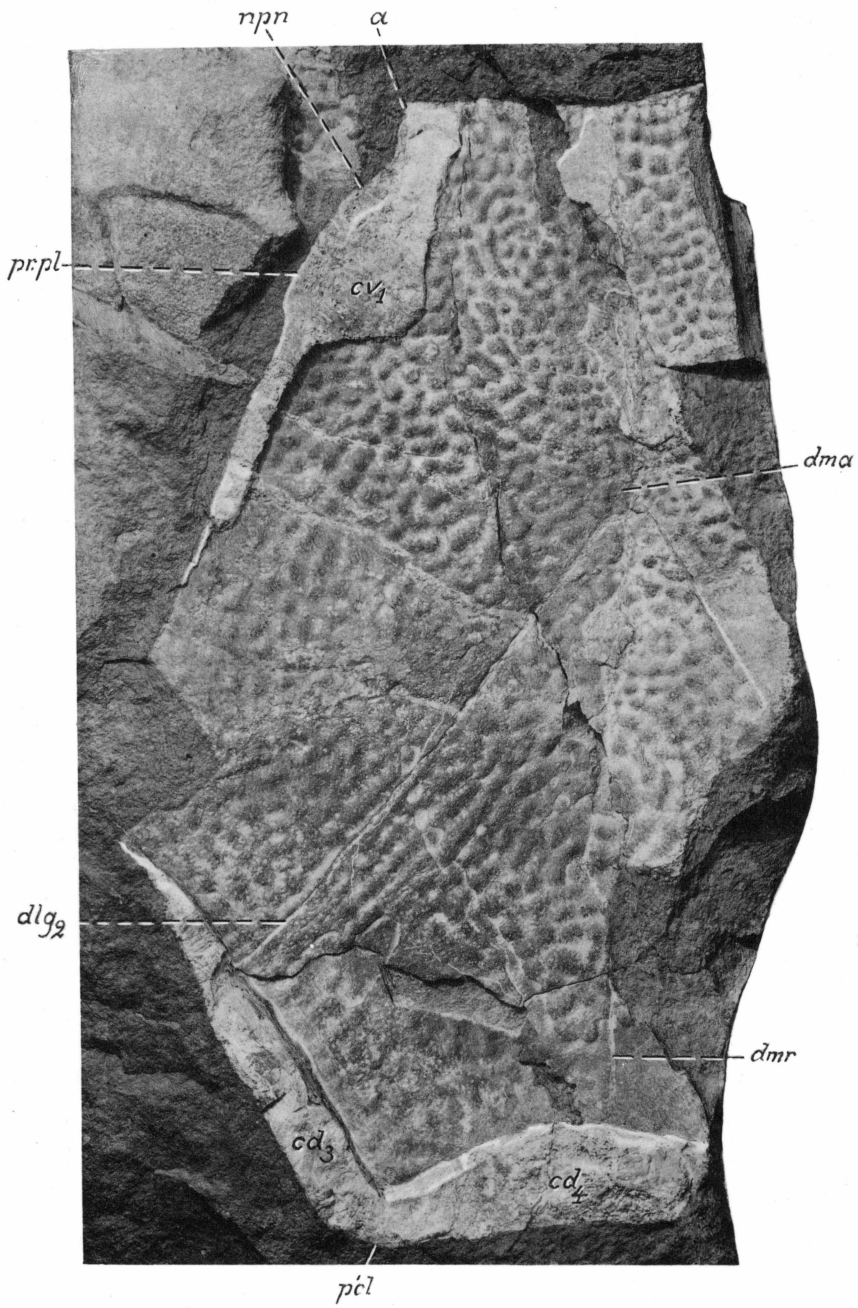
*Bothriolepis groenlandica* Heintz.

Large imperfect anterior median dorsal plate preserved as an impression of its dorsal side. Specimen No. 1127. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*a*, antero-lateral corner; *cd*<sub>3</sub>, area overlapped by mixilateral plate; *cd*<sub>4</sub>, area overlapped by posterior median dorsal plate; *cv*<sub>1</sub>, area overlapping anterior dorso-lateral plate; *dlg*<sub>2</sub>, posterior oblique abdominal pit-line groove; *dma*, tergal angle; *dmr*, dorsal median ridge; *npr*, postnuchal notch; *pcl*, postero-lateral corner; *pr. pl*, external postlevator process.



**Plate 31.**

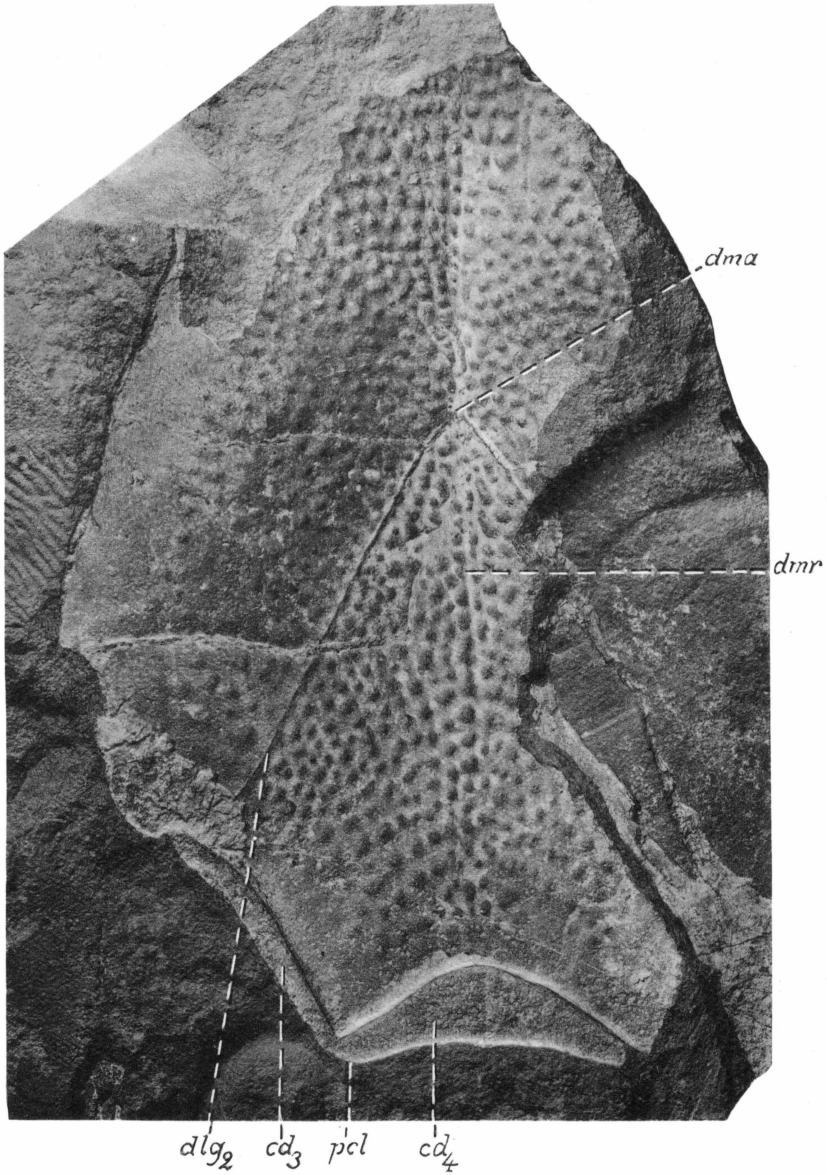
*Bothriolepis groenlandica* Heintz.

Deficient impression of the upper side of a fairly large anterior median dorsal plate. Specimen No. 1128. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

$cd_3$ , area overlapped by mixilateral plate;  $cd_4$ , area overlapped by posterior median dorsal plate;  $dly_2$ , posterior oblique abdominal pit-line groove;  $dma$ , tergal angle;  $dmr$ , dorsal median ridge;  $pcl$ , postero-lateral corner.



### Plate 32.

#### *Bothriolepis groenlandica* Heintz.

Fig. 1. Deficient impression of an anterior median dorsal plate. Specimen No. 1074. Nat. size.

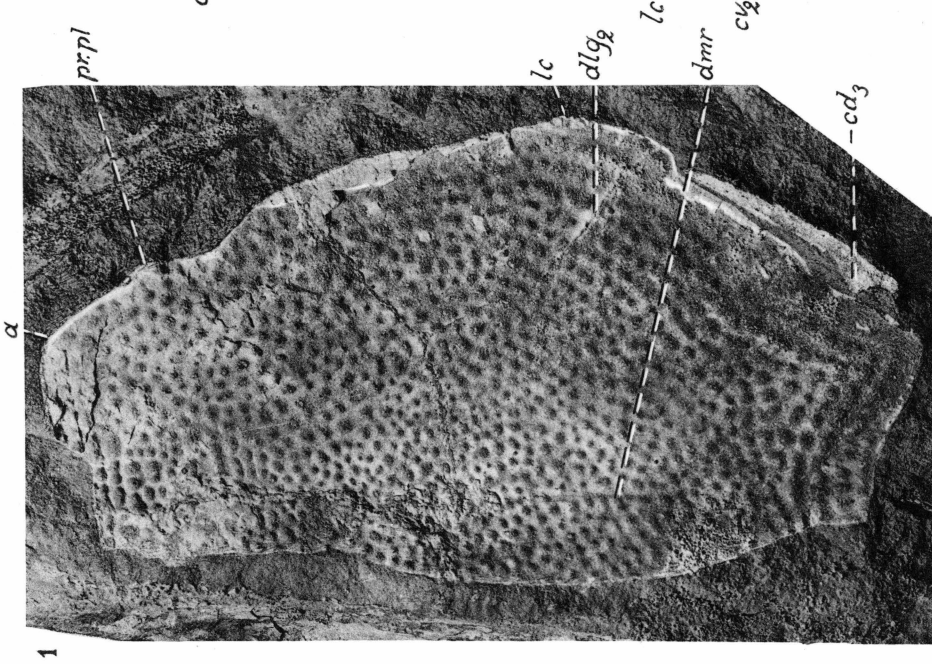
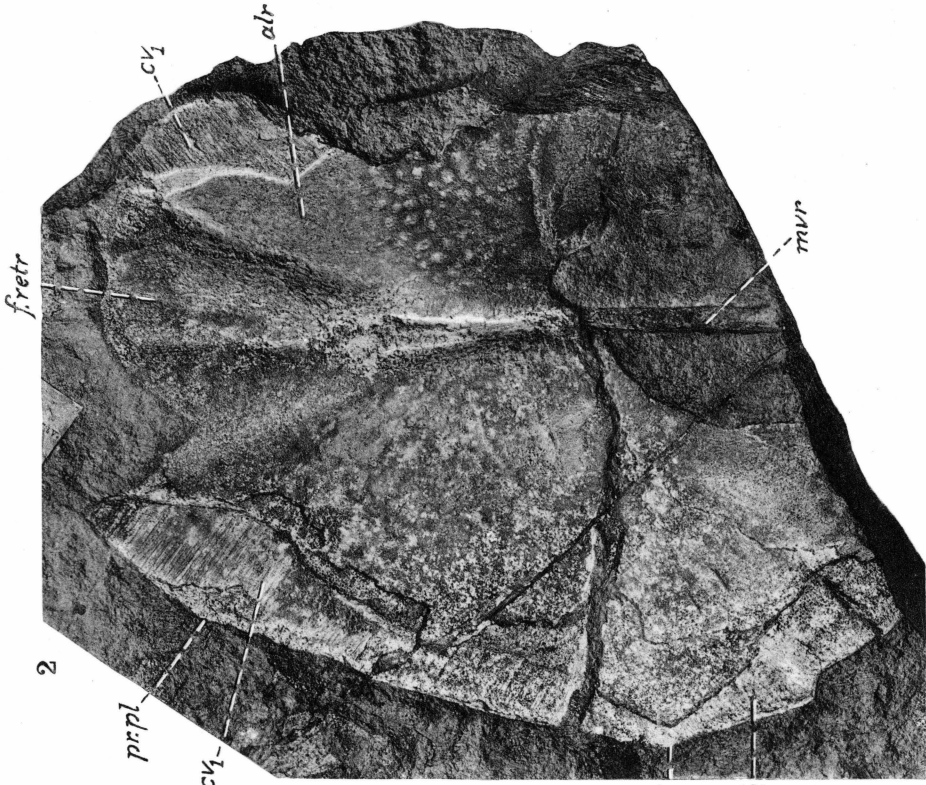
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Imperfect impression of the lower side of an anterior median dorsal plate resembling in shape the one of *B. jarviki* (cf. pl. 71 and pl. 72, fig. 1). Specimen No. 1198. Nat. size.

Gauss Peninsula. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

*a*, antero-lateral corner; *alr*, postlevator thickening (impression); *cd<sub>3</sub>*, area overlapped by mixilateral plate; *cv<sub>1</sub>*, area overlapping anterior dorso-lateral plate; *cv<sub>2</sub>*, area overlapping mixilateral plate; *dlg<sub>2</sub>*, posterior oblique abdominal pit-line groove; *dmr*, dorsal median ridge; *j. retr*, levator fossa; *lc*, lateral corner; *mvr*, median ventral ridge; *pr. pl*, external postlevator process.



**Plate 33.**

*Bothriolepis groenlandica* Heintz.

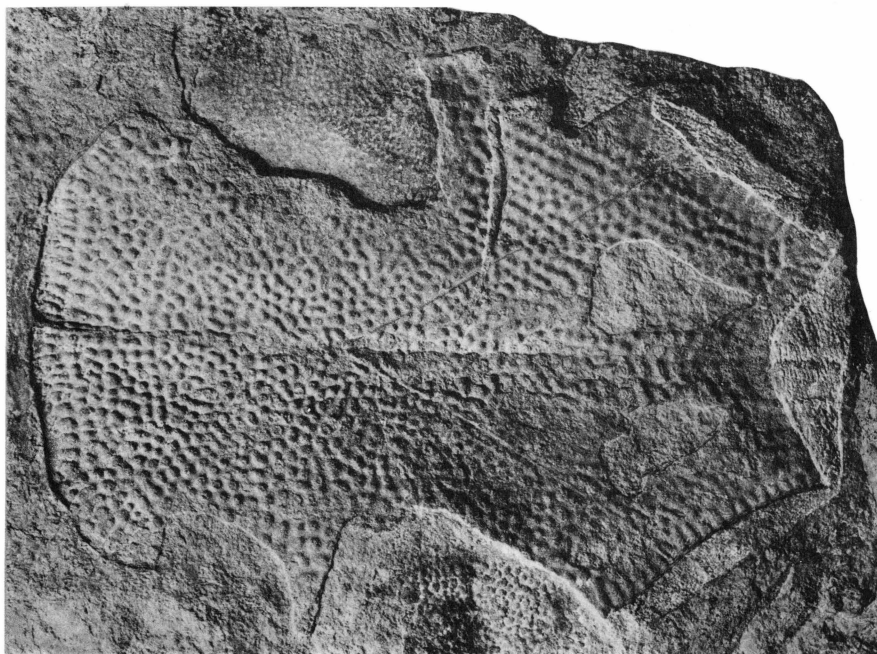
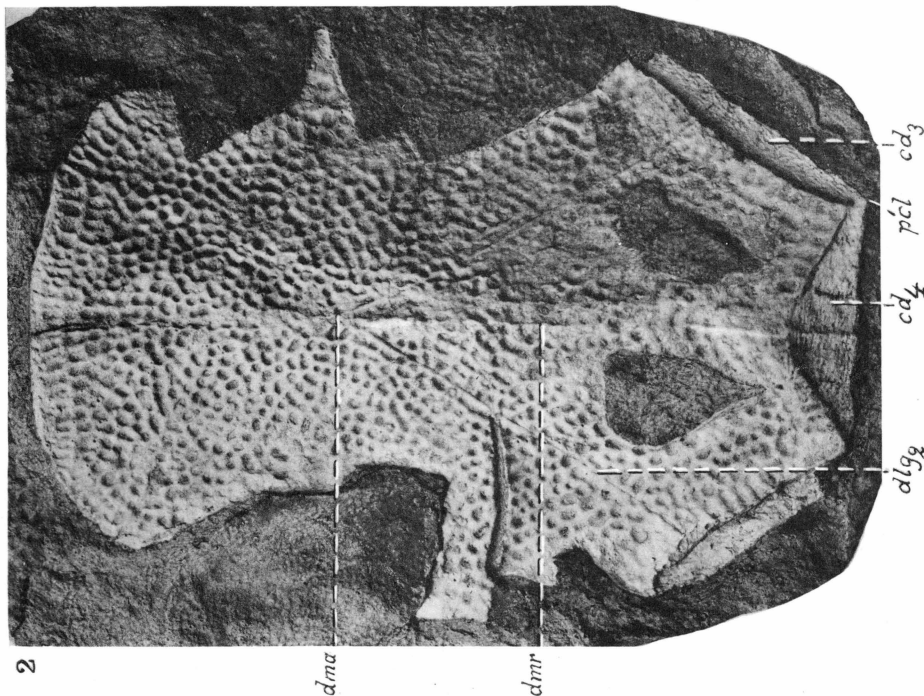
Fig. 1. Deficient impression of the upper side of a peculiarly shaped anterior median dorsal plate. Specimen No. 1177. Nat. size.

Fig. 2. Plaster cast of the impression reproduced in fig. 1.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

$cd_3$ , area overlapped by mixilateral plate;  $cd_4$ , area overlapped by posterior median dorsal plate;  $dlq_2$ , posterior oblique abdominal pit-line groove (impression);  $dma$ , tergal angle;  $dmr$ , dorsal median ridge.



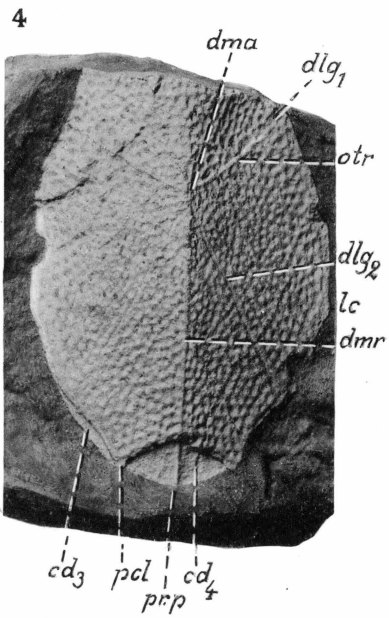
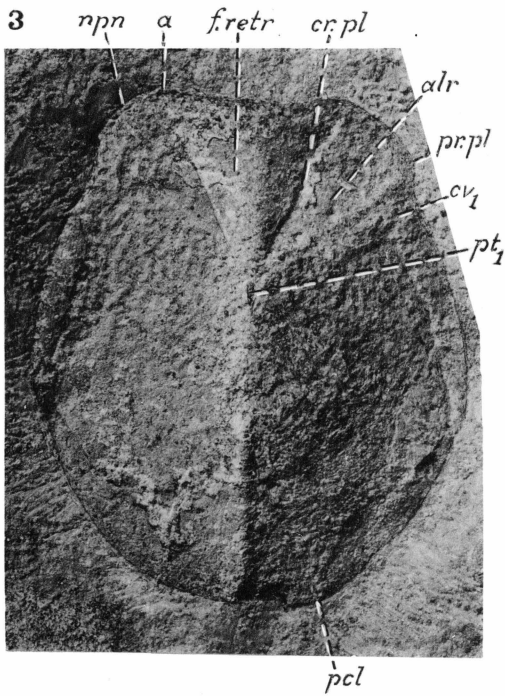
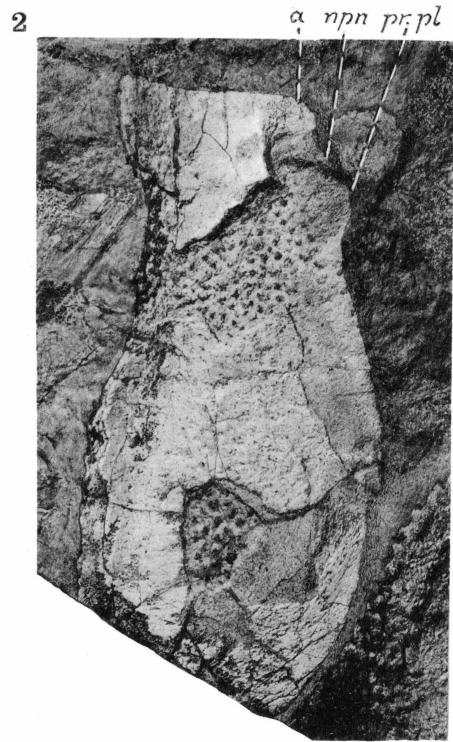
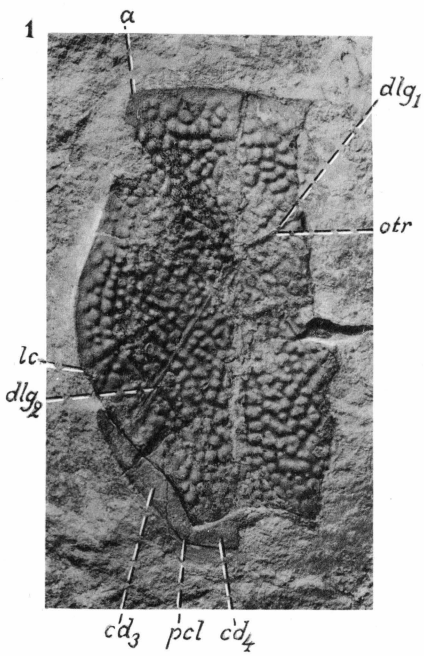
### Plate 34.

*Bothriolepis groenlandica* Heintz.

- Fig. 1. Imperfect impression of the dorsal side of a fairly small and narrow anterior median dorsal plate. Specimen No. 1052. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 2. Deficient anterior median dorsal plate in ventral aspect. The plate partly preserved as an impression of its upper side. Specimen No. 1084. Nat. size.  
Gauss Peninsula. Glacier Valley. Bend of brook. W. slope of ravine. Horizon 422 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 3. Small anterior median dorsal plate. Dorsal aspect. The plate preserved so as to show to a large extent the characters of its lower side. Specimen No. 1090b.  $\times 2$ .  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 4. Plaster cast of a small imperfect anterior median dorsal plate of a narrow type. Dorsal aspect. Specimen No. 488. Nat. size.  
Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.

Explanation of letters.

*a*, antero-lateral corner; *atr*, postlevator thickening (impression); *cd<sub>3</sub>*, area overlapped by mixilateral plate; *cd<sub>4</sub>*, area overlapped by posterior median dorsal plate; *cr. pl*, postlevator crista (impression); *cv<sub>1</sub>*, area overlapping anterior dorso-lateral plate; *dlg<sub>1</sub>*, anterior oblique abdominal pit-line groove; *dlg<sub>2</sub>*, posterior oblique abdominal pit-line groove; *dma*, tergal angle; *dmr*, dorsal median ridge; *f. retr*, levator fossa; *lc*, lateral corner; *npr*, postnuchal notch; *otr*, oblique transverse ridge behind pit-line groove *dlg<sub>1</sub>*; *pcl*, postero-lateral corner; *pr. p*, posterior median process; *pr. pl*, external postlevator process; *pt<sub>1</sub>*, anterior ventral pit.



### Plate 35.

#### *Bothriolepis groenlandica* Heintz.

Fig. 1. Somewhat imperfect impression of the dorsal side of a small anterior median dorsal plate. Specimen No. 1091.  $\times 2$ .

Fig. 2. Counterpart of the plate in fig. 1, showing to a large extent the relief of the lower side of the plate.  $\times 2$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480–550 m. *Phyllolepis*-series. Expedition 1934.

Fig. 3. Impression of the upper side of a small, narrow anterior median dorsal plate. Specimen No. 1092.  $\times 2$ .

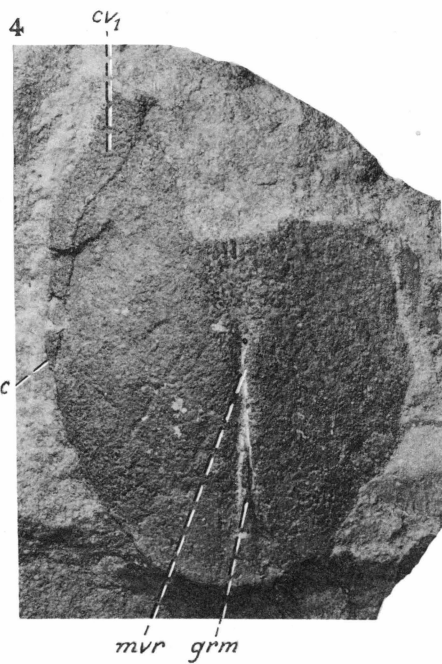
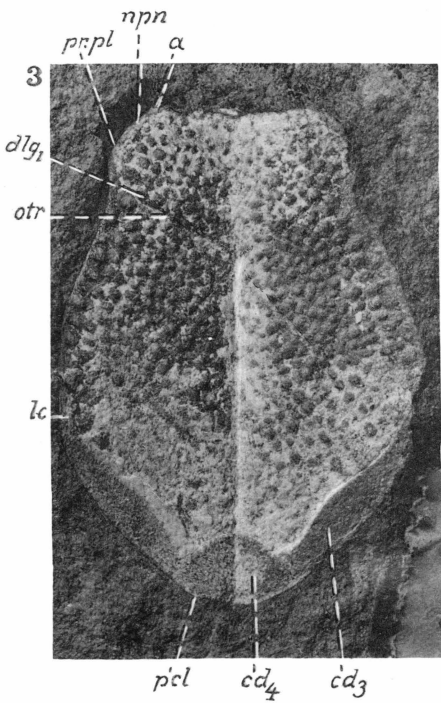
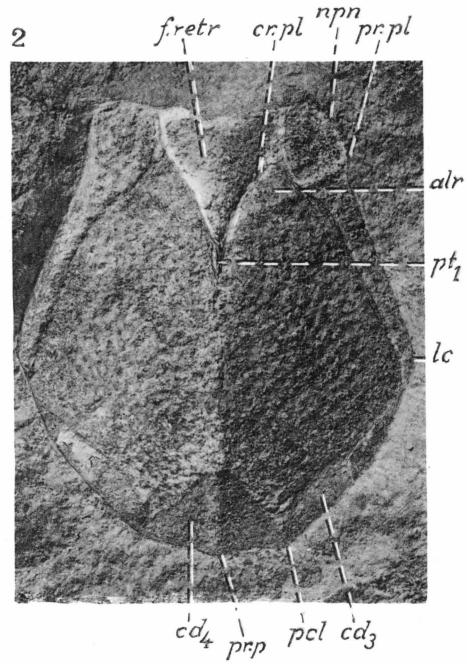
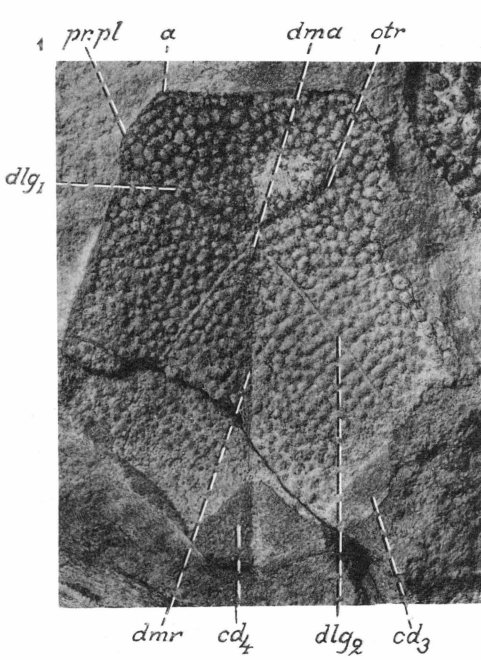
Same locality, horizon etc. as the specimen reproduced in figs. 1 and 2.

Fig. 4. Deficient impression of the lower side of a fairly small anterior median dorsal plate. Specimen No. 402. Nat. size.

Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.

#### Explanation of letters.

*a*, antero-lateral corner; *alr*, postlevator thickening; *cd<sub>3</sub>*, area overlapped by mixilateral plate; *cd<sub>4</sub>*, area overlapped by posterior median dorsal plate; *cr. pl*, postlevator crista; *cv<sub>1</sub>*, area overlapping anterior dorso-lateral plate; *dlg<sub>2</sub>*, posterior oblique abdominal pit-line groove; *dma*, tergal angle; *dmr*, dorsal median ridge; *f. retr*, levator fossa; *grm*, ventral median groove; *lc*, lateral corner; *mvr*, median ventral ridge; *npn*, postnuchal notch; *otr*, oblique transverse ridge behind the pit-line groove *dlg<sub>1</sub>*; *pcl*, postero-lateral corner; *pr. p*, posterior median process; *pr. pl*, external postlevator process; *pt<sub>1</sub>*, anterior ventral pit.



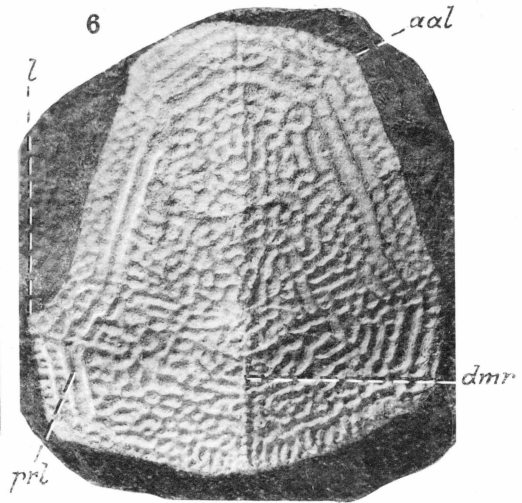
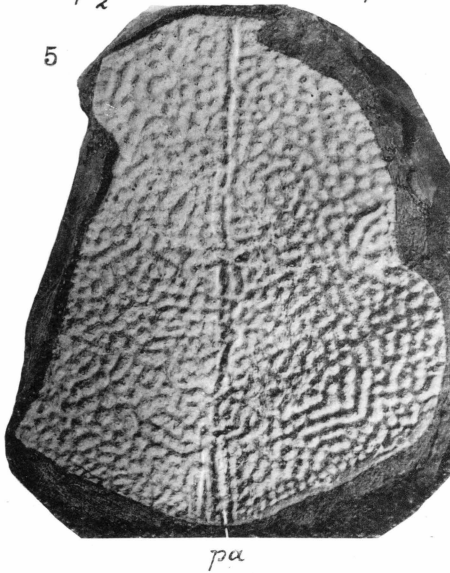
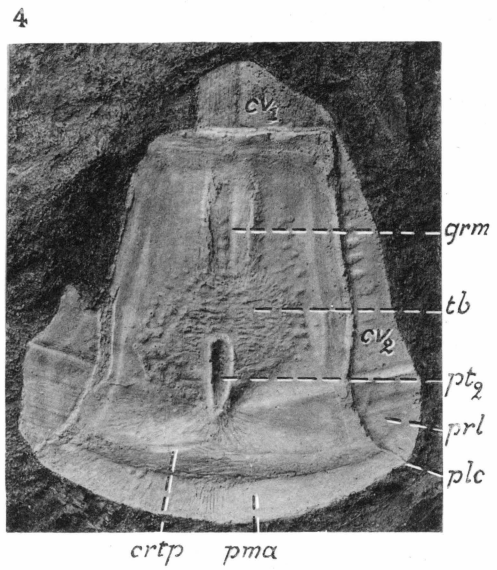
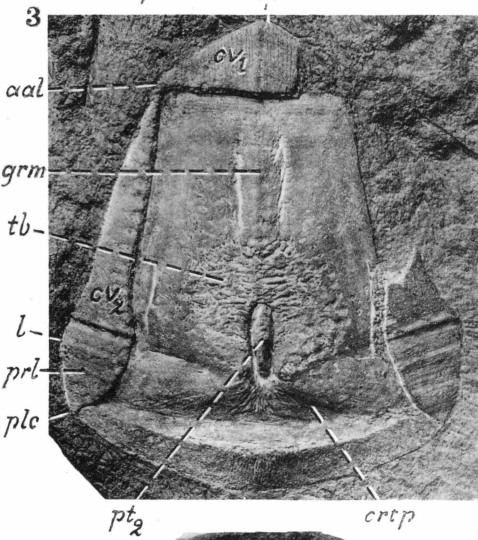
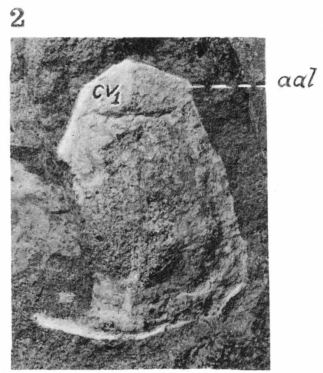
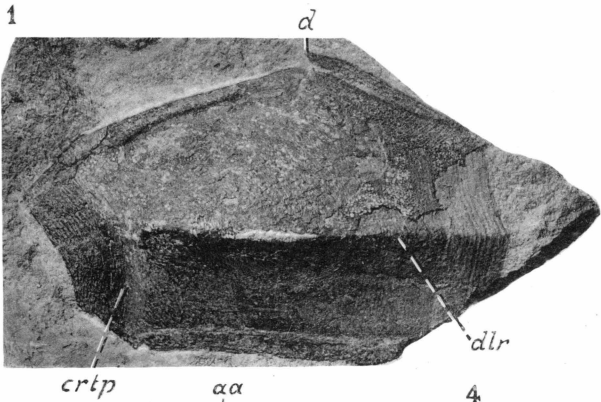
### Plate 36.

#### *Bothriolepis groenlandica* Heintz.

- Fig. 1. Fairly small mixilateral plate in lateral aspect. The plate preserved to a large extent as an impression of its internal (medial) side. Specimen No. 1194. Nat. size. Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 2. A fairly small posterior median dorsal plate in dorsal aspect. The plate preserved mainly as an imperfect impression of its lower side. Specimen No. 1129. Nat. size. Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 3. Posterior median dorsal plate in dorsal aspect. The plate represented by an impression of its lower side. Specimen No. 1012. Nat. size.
- Fig. 4. Plaster cast of the plate reproduced in fig. 3. Ventral aspect. Nat. size. Same locality and horizon etc. as the specimen reproduced in fig. 2.
- Figs. 5, 6. Plaster casts of two deficient posterior median dorsal plates. Dorsal aspect. Specimens Nos. 1098 and 1107 respectively. Nat. size. Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.

#### Explanation of letters.

*aa*, anterior corner of posterior median dorsal plate; *aal*, antero-lateral corner of posterior median dorsal plate; *crt<sub>p</sub>*, crista transversalis interna posterior; *cv<sub>1</sub>*, area overlapping anterior median dorsal plate; *cv<sub>2</sub>*, area overlapping mixilateral plate; *d*, dorsal corner of mixilateral plate; *dlr*, dorso-lateral ridge; *dmr*, dorsal median ridge; *grm*, ventral median groove; *l*, lateral corner of posterior median dorsal plate; *pa*, posterior corner of posterior median dorsal plate; *plc*, postero-lateral corner of posterior median dorsal plate; *pma*, posterior marginal area; *prl*, lateral process of posterior median dorsal plate; *pt<sub>2</sub>*, posterior ventral pit; *tb*, ventral tuberosity.



### Plate 37.

#### *Bothriolepis groenlandica* Heintz.

Fig. 1. Plaster cast of a deficient posterior median dorsal plate. Dorsal aspect. Specimen No. 491. Nat. size.

Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.

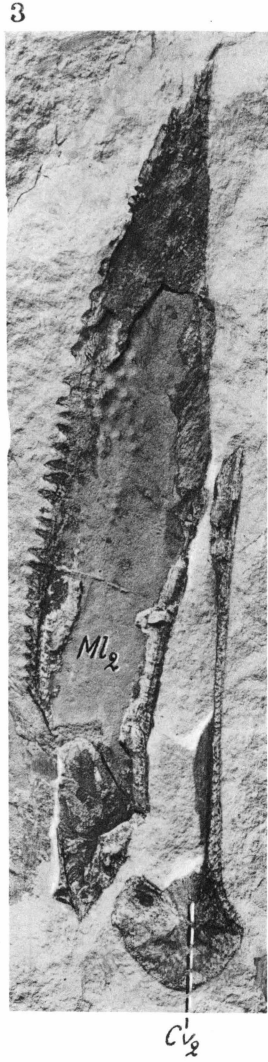
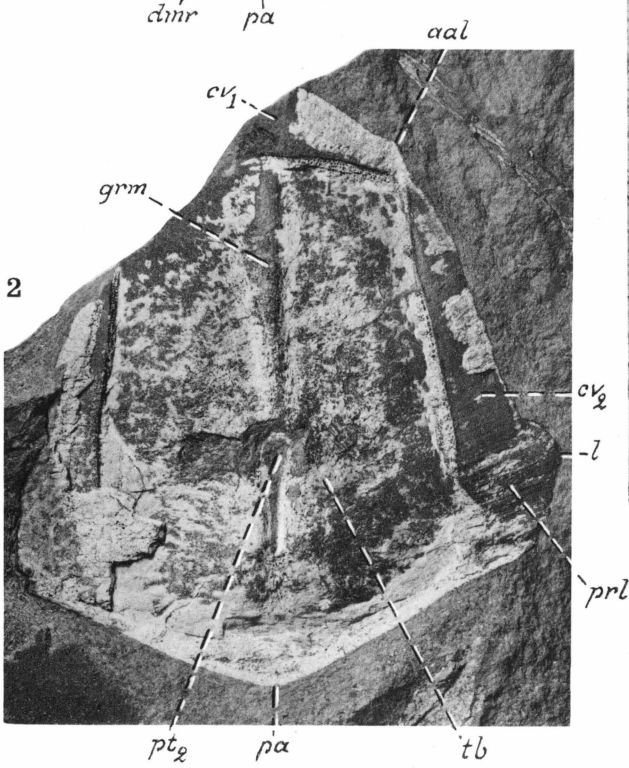
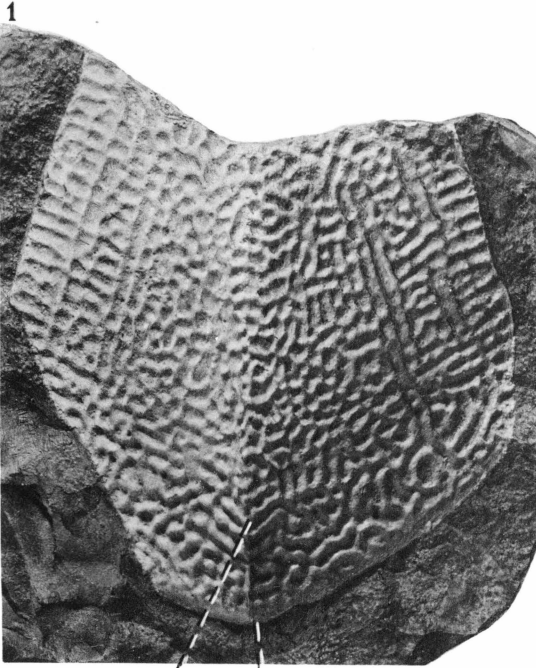
Fig. 2. Somewhat imperfect posterior median dorsal plate. The plate preserved mainly as an impression of its lower side. Specimen No. 1173. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 3. Parts of the proximal segment of a right pectoral fin. Specimen No. 1061. Nat. size. Same locality and horizon etc. as the specimen in fig. 2.

#### Explanation of letters.

*Cv*<sub>2</sub>, ventral central plate 2; *Ml*<sub>2</sub>, lateral marginal plate 2; *aal*, antero-lateral corner of posterior median dorsal plate; *cv*<sub>1</sub>, area overlapping anterior median dorsal plate; *cv*<sub>2</sub>, area overlapping mixilateral plate; *dmr*, dorsal median ridge; *grm*, ventral median groove; *l*, lateral corner of posterior median dorsal plate; *pa*, posterior corner of posterior median dorsal plate; *prl*, lateral process of posterior median dorsal plate; *pl*<sub>2</sub>, posterior ventral pit; *tb*, ventral tuberosity (impression).



**Plate 33.**

*Bothriolepis groenlandica* Heintz.

Fig. 1. Somewhat deficient impression of the dorsal side of a large posterior median dorsal plate. Specimen No. 1013. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllotepis*-series. Expedition 1934.

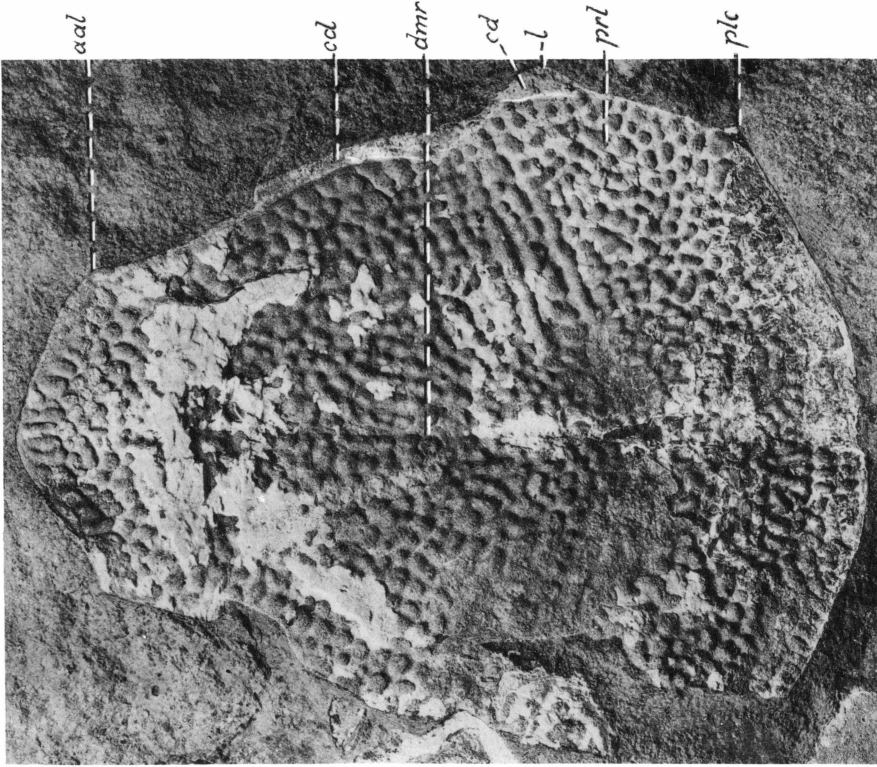
Fig. 2. Somewhat deficient impression of the dorsal side of a posterior median dorsal plate. The plate shows a narrow overlapped area (*cd*) along the longer anterior part of its lateral margin. Specimen No. 1151 a.  $\times \frac{3}{2}$ .

Same locality and horizons etc. as the specimen in fig. 1.

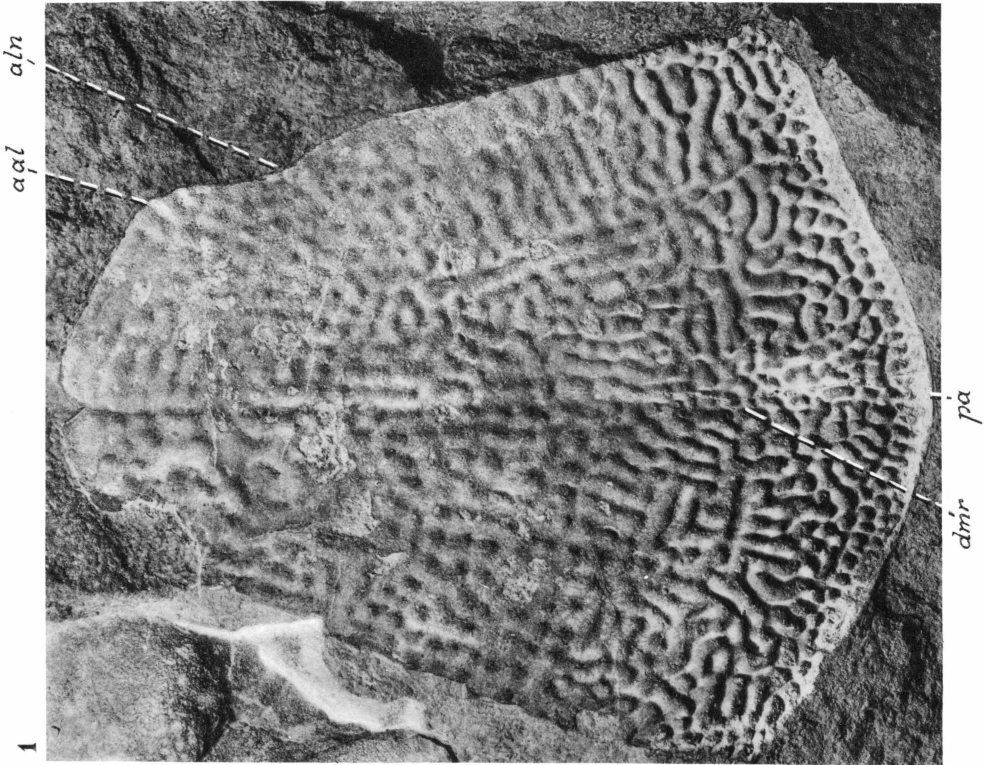
Explanation of letters.

*aal*, antero-lateral corner; *aln*, mixilateral notch; *cd*, narrow area overlapped by mixilateral plate; *dmr*, dorsal median ridge; *l*, lateral corner; *pa*, posterior corner; *plc*, postero-lateral corner; *prl*, lateral process.

2



1



**Plate 39.**

*Bothriolepis groenlandica* Heintz.

Fig. 1. Plaster cast, showing the dorsal side of the deficient posterior median dorsal plate reproduced in fig. 2. Nat. size.

Fig. 2. Deficient impression of the dorsal side of a large posterior median dorsal plate. Specimen No. 1178. Nat. size.

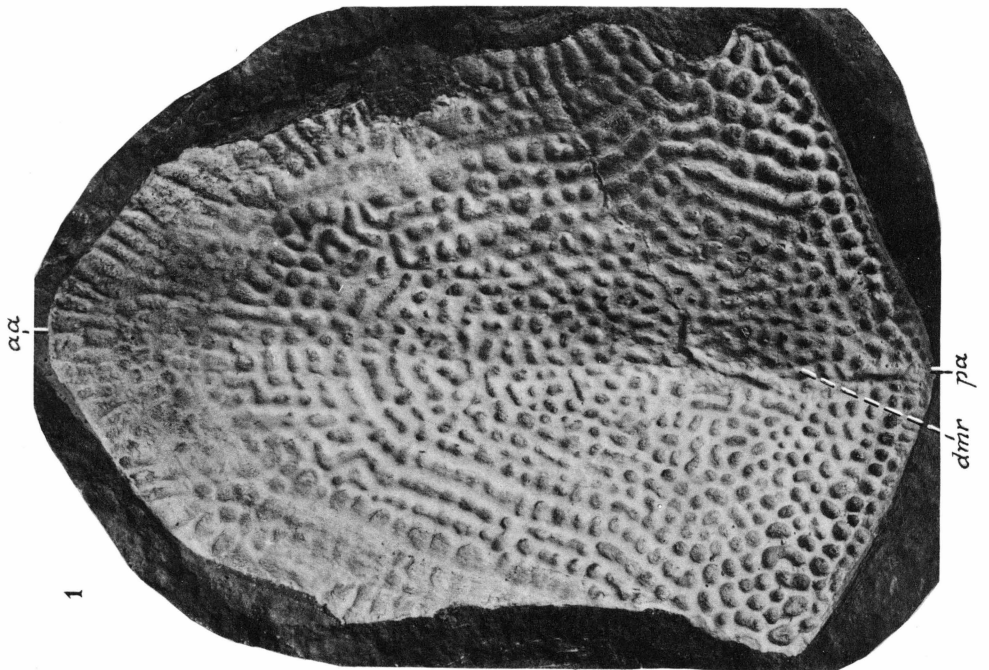
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

*aa*, anterior corner; *dmr*, dorsal median ridge; *pa*, posterior corner.



2



1

**Plate 40.**

*Bothriolepis groenlandica* Heinz.

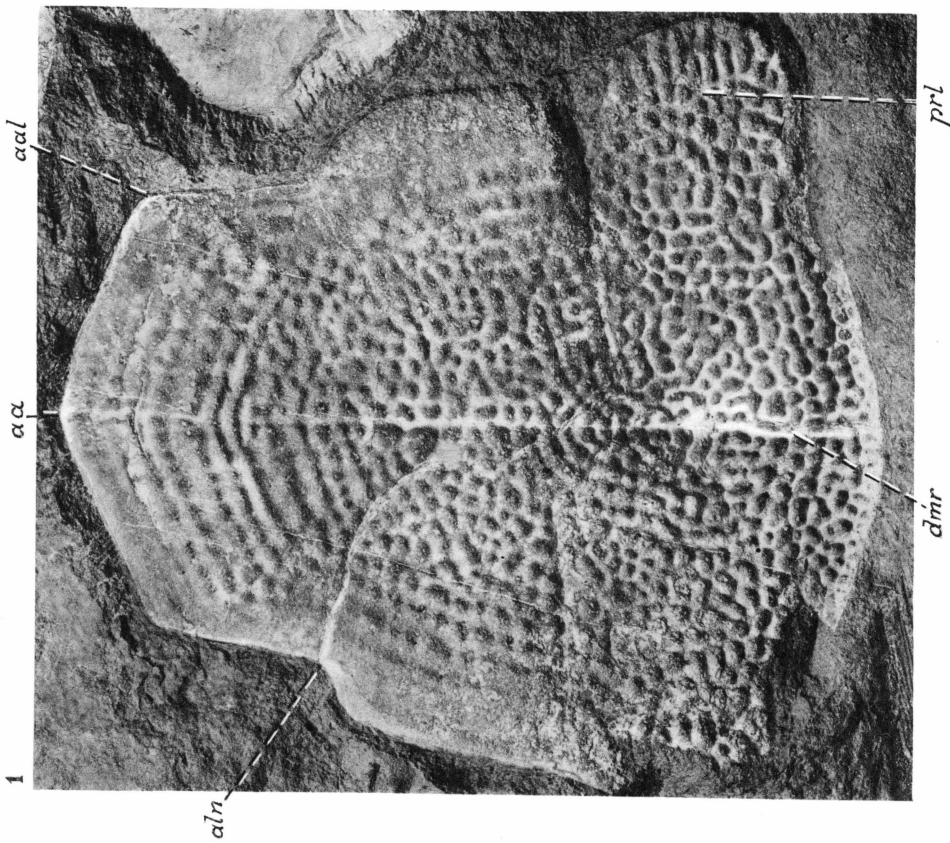
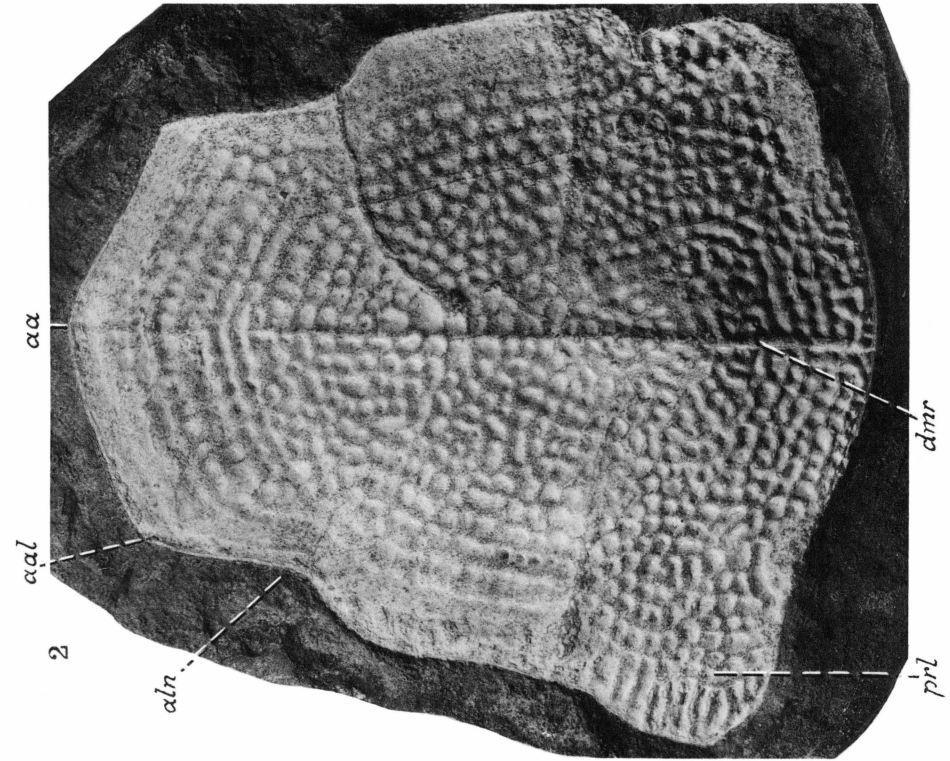
Fig. 1. Large posterior median dorsal plate preserved as an impression of its dorsal side. Specimen No. 1014. Nat. size.

Fig. 2. Plaster cast of the plate reproduced in fig. 1. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

*aa*, anterior corner; *aal*, antero-lateral corner; *aln*, mixilateral notch; *dmr*, dorsal median ridge; *prl*, lateral process.



### Plate 41.

*Bothriolepis groenlandica* Heintz.

Fig. 1. Impression of the dorsal side of a posterior median dorsal plate. Of special interest is that this plate shows an impression of a long narrow area (*cd*) along its lateral margin, an area which was overlapped by the mixilateral plate. Specimen No. 1000. Nat. size.

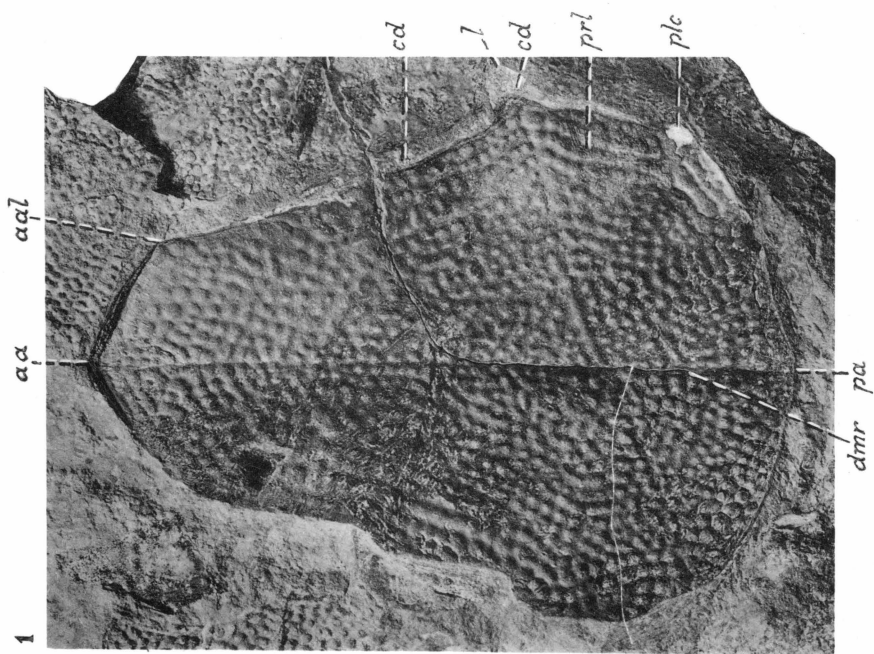
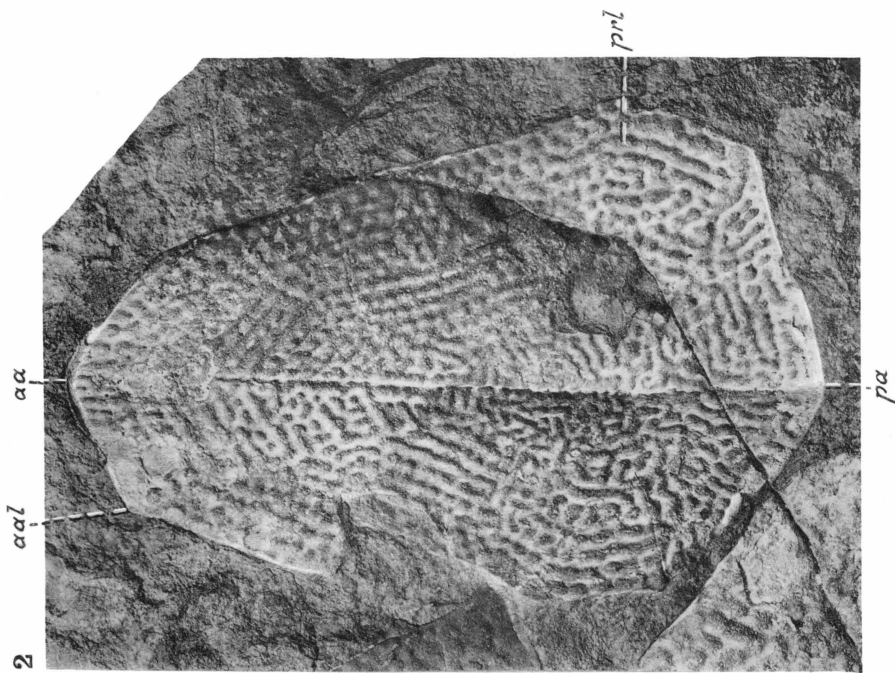
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Deficient impression of the dorsal side of a posterior median dorsal plate. Specimen No. 1189. Nat. size.

Same locality and horizon etc. as the specimen in fig. 1.

Explanation of letters.

*aa*, anterior corner; *aal*, antero-lateral corner; *cd*, area overlapped by mixilateral plate; *dmr*, dorsal median ridge; *l*, lateral corner; *pa*, posterior corner; *plc*, postero-lateral corner; *prl*, lateral process.



## Plate 42.

### *Bothriolepis groenlandica* Heintz.

Fig. 1. Small posterior median dorsal plate preserved mainly as an impression of its ventral side. Specimen No. 1095a.  $\times 2$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. A small somewhat deficient posterior median dorsal plate preserved mainly as an impression of its ventral side. Specimen No. 1171b.  $\times 2$ .

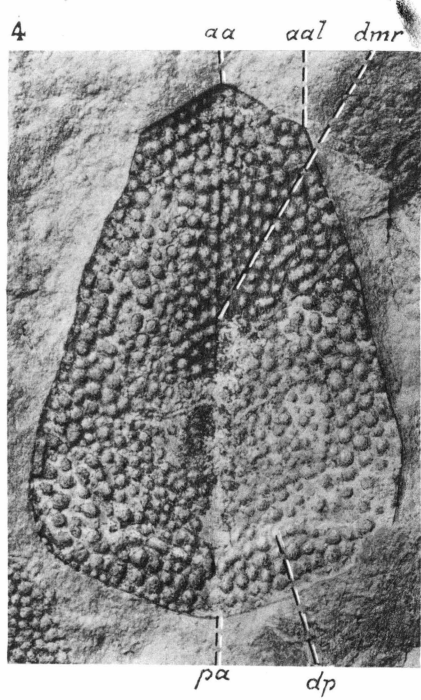
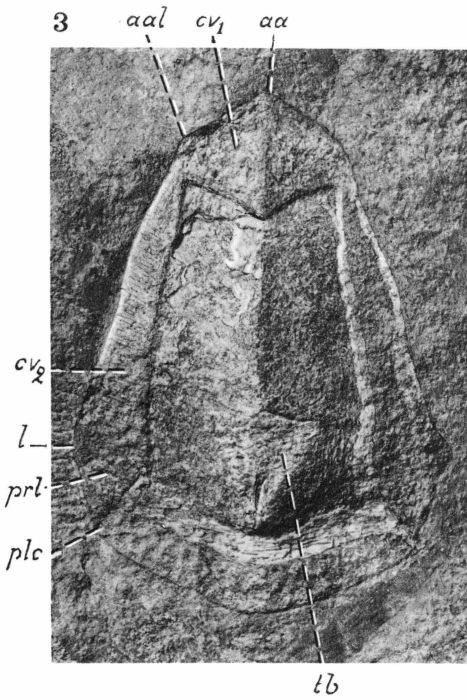
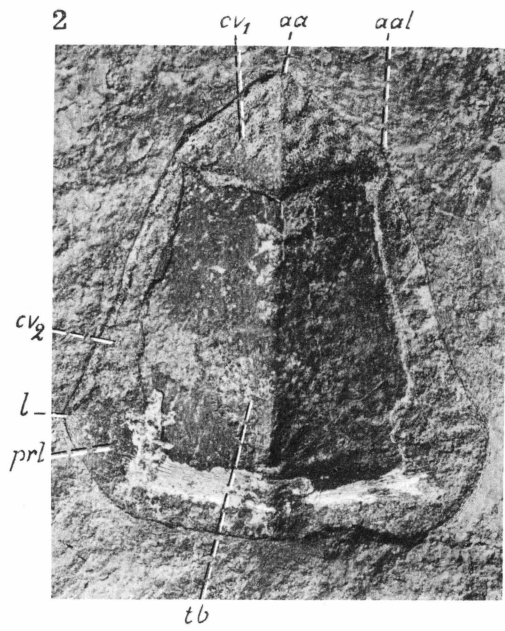
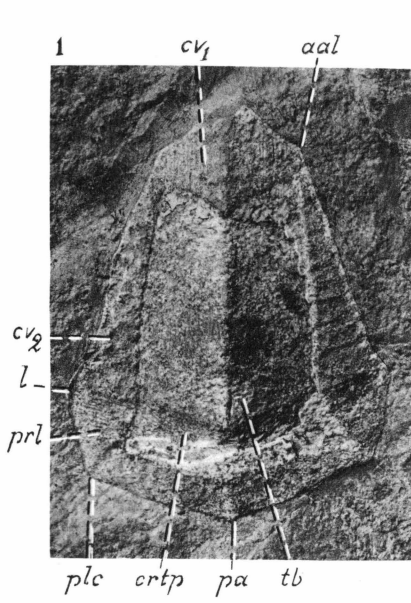
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Figs. 3, 4. A small posterior median dorsal plate in counterpart showing impressions of its ventral and dorsal sides. Specimen No. 1094.  $\times 2$ .

Same locality and horizon etc. as the specimen reproduced in fig. 1.

#### Explanation of letters.

*aa*, anterior corner; *aal*, antero-lateral corner; *crlp*, crista transversalis interna posterior, median dorsal part (impression); *cv*<sub>1</sub>, area overlapping anterior median dorsal plate (impression); *cv*<sub>2</sub>, area overlapping mixilateral plate (impression); *dmr*, dorsal median ridge (impression); *dp*, transverse groove or depression above median part of crista transversalis interna posterior (fairly obscure impression); *l*, lateral corner; *pa*, posterior corner; *plc*, postero-lateral corner; *prl*, lateral process; *tb*, ventral tuberosity (impression).



### Plate 43.

Fig. 1. *Bothriolepis groenlandica* Heintz. Deficient impression of the dorsal side of a posterior median dorsal plate. Specimen No. 1156.  $\times \frac{3}{2}$ .

Fig. 2. Impression of the ventral side of the plate shown in fig. 1. The impression somewhat deficient.  $\times 2$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine between that and Profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 3. *B. groenlandica* Heintz. Deficient impression of the dorsal side of a small posterior median dorsal plate. Specimen No. 1171.  $\times \frac{3}{2}$ .

Same locality and horizon etc. as the specimen reproduced in figs. 1 and 2.

Fig. 4. *B. jarviki* n.sp. Deficient small anterior median dorsal plate in ventral aspect. Specimen No. 1215. Nat. size.

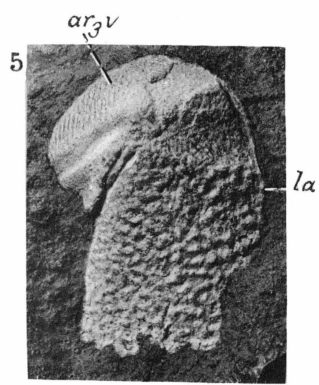
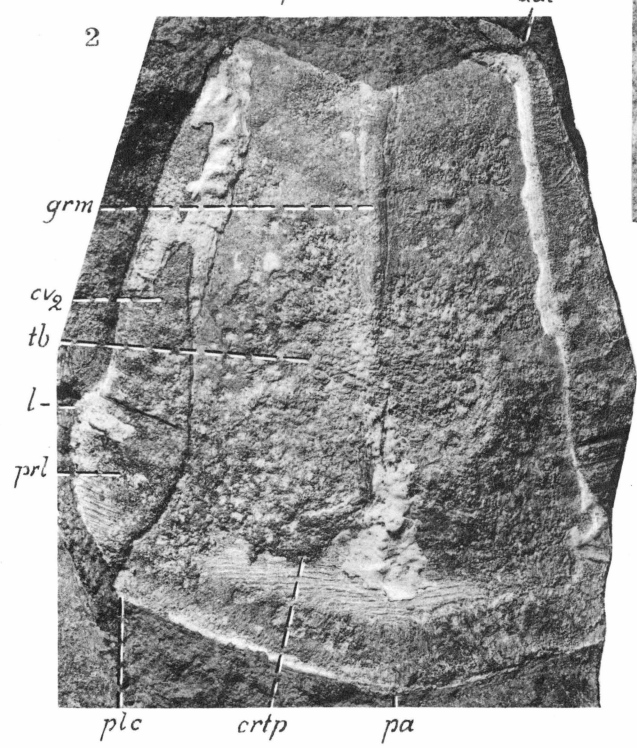
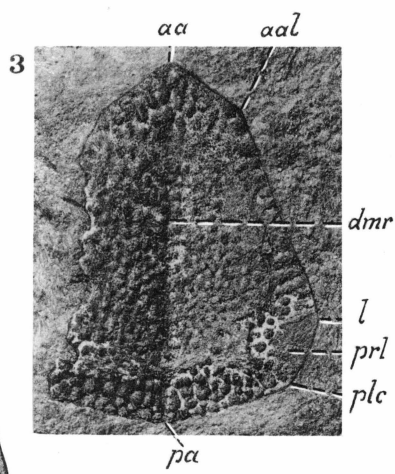
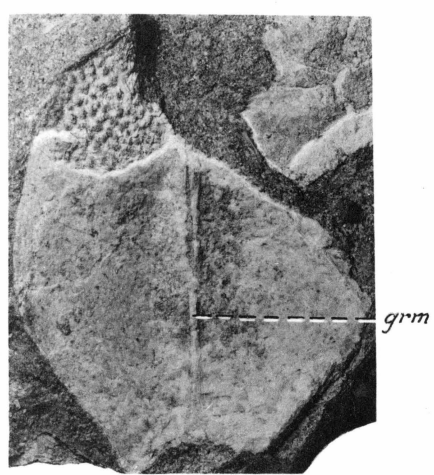
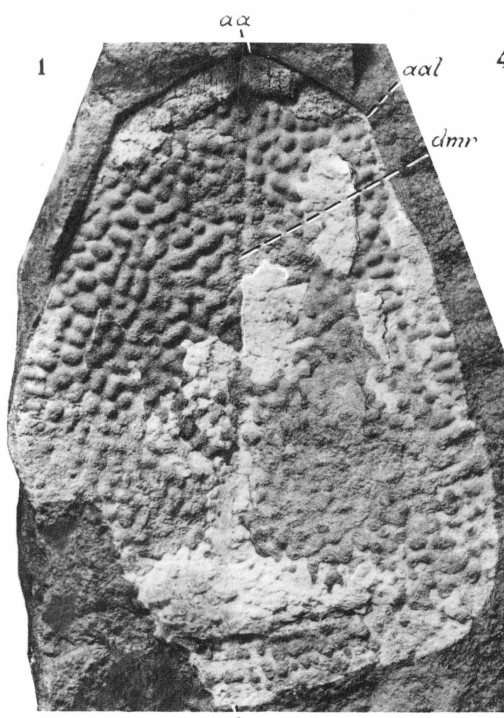
Ymer Island. Dusén Fjord, N. side. Profile B. 977 m. E. Nielsen 1936.

Fig. 5. *B. jarviki* n.sp. Plaster cast of an imperfect ventral central plate 1. External aspect. Specimen No. 497.  $\times \frac{3}{2}$ . Expedition 1931.

Trail Island. Mt. Kungaborgen.

#### Explanation of letters.

*aa*, anterior corner; *aal*, antero-lateral corner; *ar<sub>3</sub>v*, external articular area of ventral central plate 1; *crtp*, crista transversalis interna posterior, median dorsal part (impression); *cv<sub>2</sub>*, area overlapping mixilateral plate; *dmr*, dorsal median ridge; *grm*, ventral median groove; *l*, lateral corner; *la*, lateral angle of ventral central plate 1; *pa*, posterior corner; *plc*, postero-lateral corner; *prl*, lateral process; *tb*, ventral tuberosity.



**Plate 44.**

*Bothriolepis groenlandica* Heintz.

Fig. 1. Deficient impression of the medial (internal) side of a left anterior dorso-lateral plate. Specimen No. 1018. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Deficient right anterior dorso-lateral plate in dorso-lateral aspect. Specimen No. 1154. Nat. size.

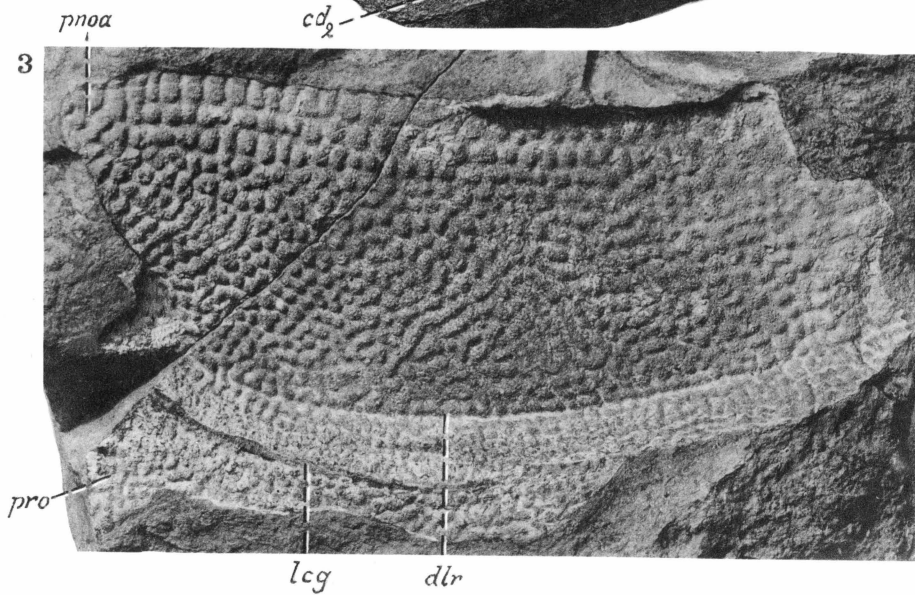
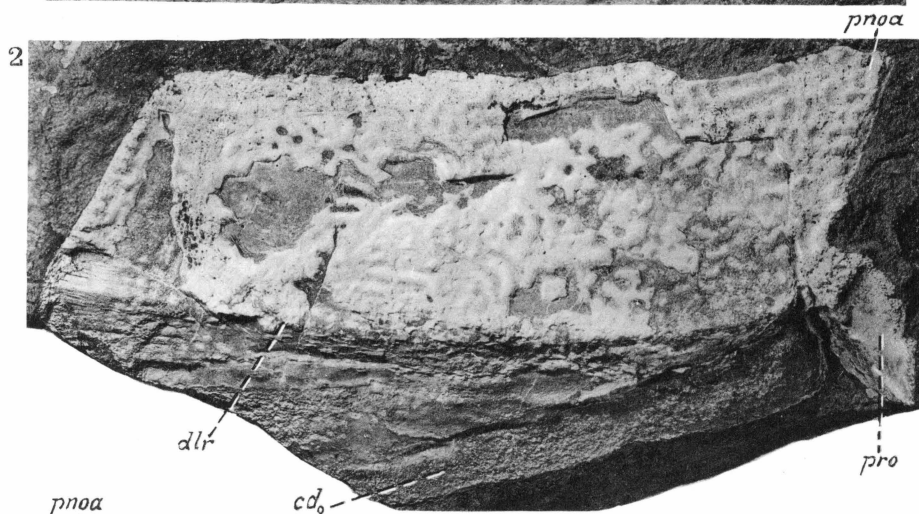
Same locality and horizon etc. as the specimen in fig. 1.

Fig. 3. Deficient impression of the outside of a right anterior dorso-lateral plate. Specimen No. 1153b. Nat. size. Counterpart reproduced in pl. 45, fig. 1.

Same locality and horizon etc. as the specimen reproduced in fig. 1.

Explanation of letters.

*cd*<sub>2</sub>, area overlapped by anterior ventro-lateral plate; *cit*, crista transversalis interna anterior, upper part of vertical division (impression); *cv*, area overlapping mixilateral plate; *dtr*, dorso-lateral ridge; *leg*, main lateral line groove; *pnoa*, postnuchal ornamented corner; *pro*, processus obstans.



### Plate 45.

#### *Bothriolepis groenlandica* Heintz.

Fig. 1. Same anterior dorso-lateral plate as in pl. 44, fig. 3. Internal side and in part also an impression of the external side are shown. The picture taken so as to appear in positive, and owing to this the plate looks, as if were from the left side of the trunkarmour. Specimen No. 1153a. Nat. size.

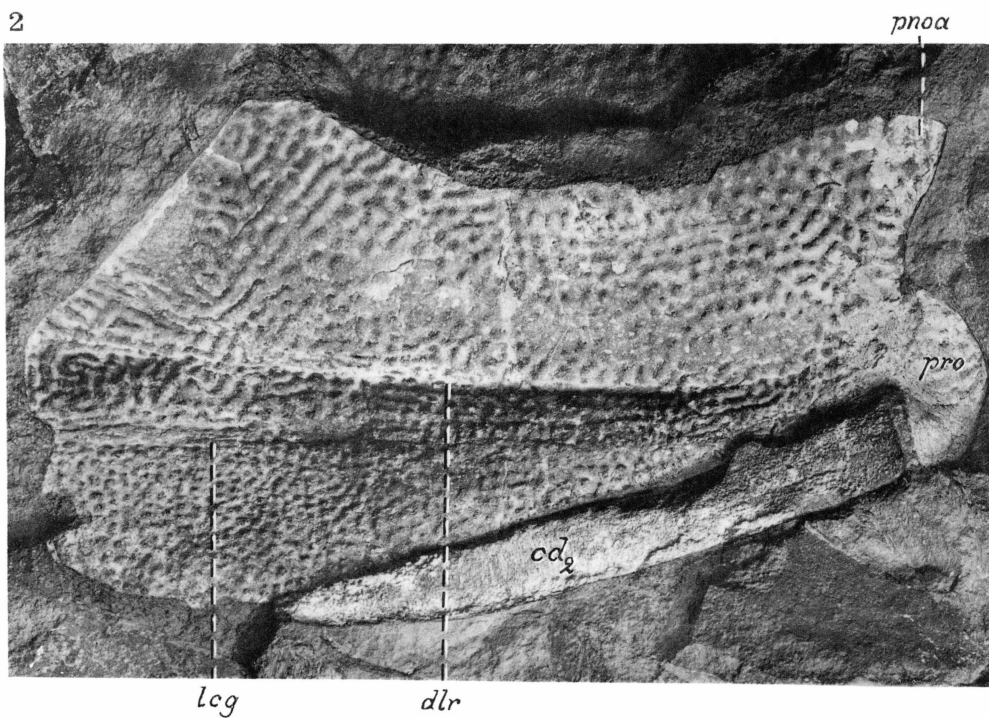
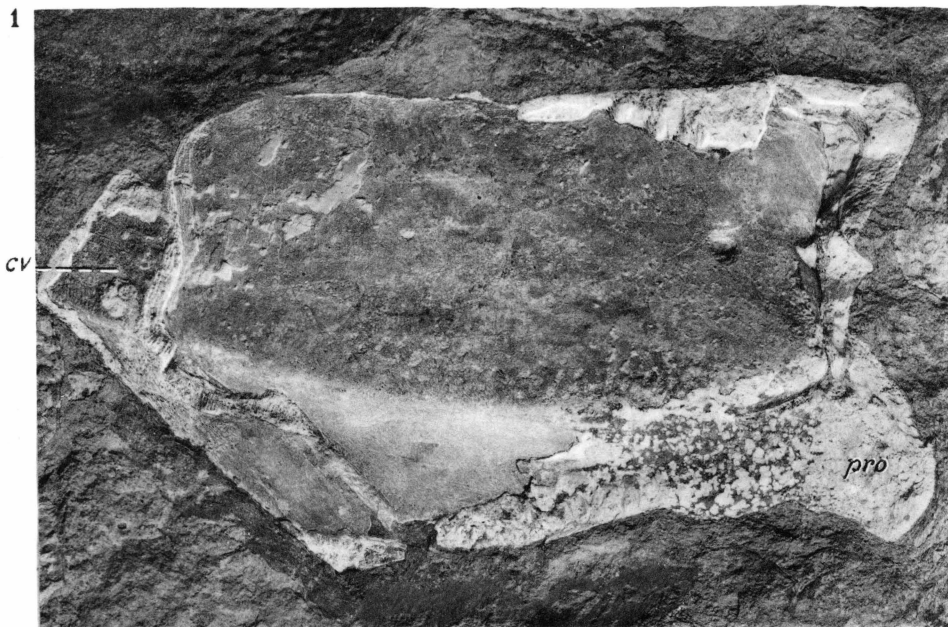
Locality, horizon etc. see pl. 44, fig. 3.

Fig. 2. Deficient left anterior dorso-lateral plate preserved as an impression of its outside, but taken so as to appear in positive. Owing to this it looks as if it were from the right side of the trunk-armour. Specimen No. 1130. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-horizon. Expedition 1934.

#### Explanation of letters.

*cd*<sub>2</sub>, area overlapped by anterior ventro-lateral plate; *cv*, area overlapping mixilateral plate; *dtr*, dorso-lateral ridge; *leg*, main lateral line groove; *proa*, postnuchal ornamented corner; *pro*, processus obstans.



**Plate 46.**

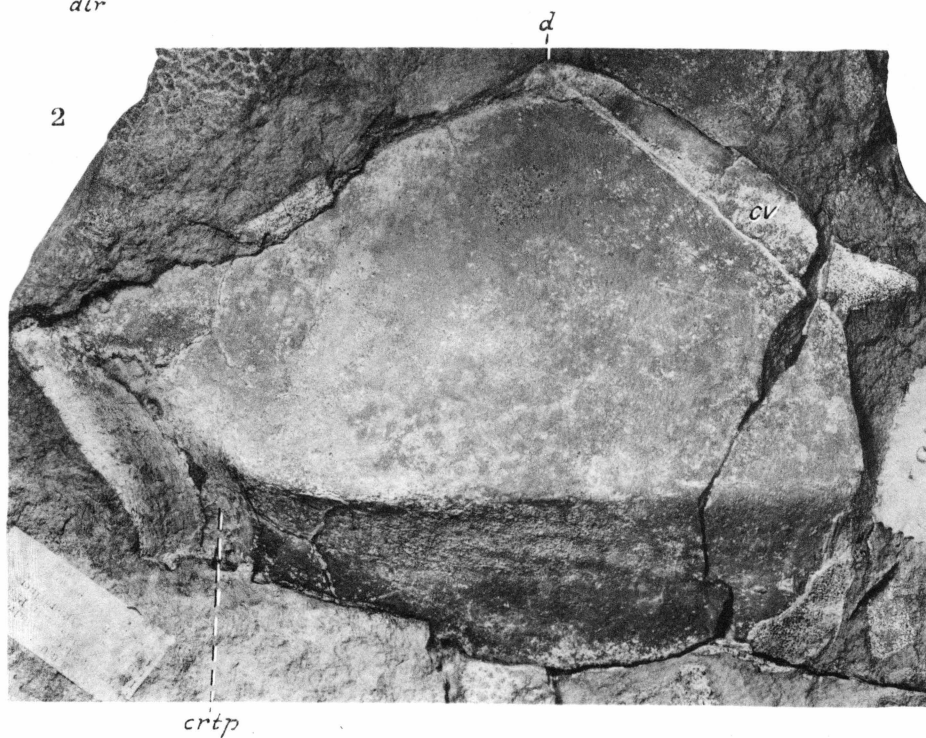
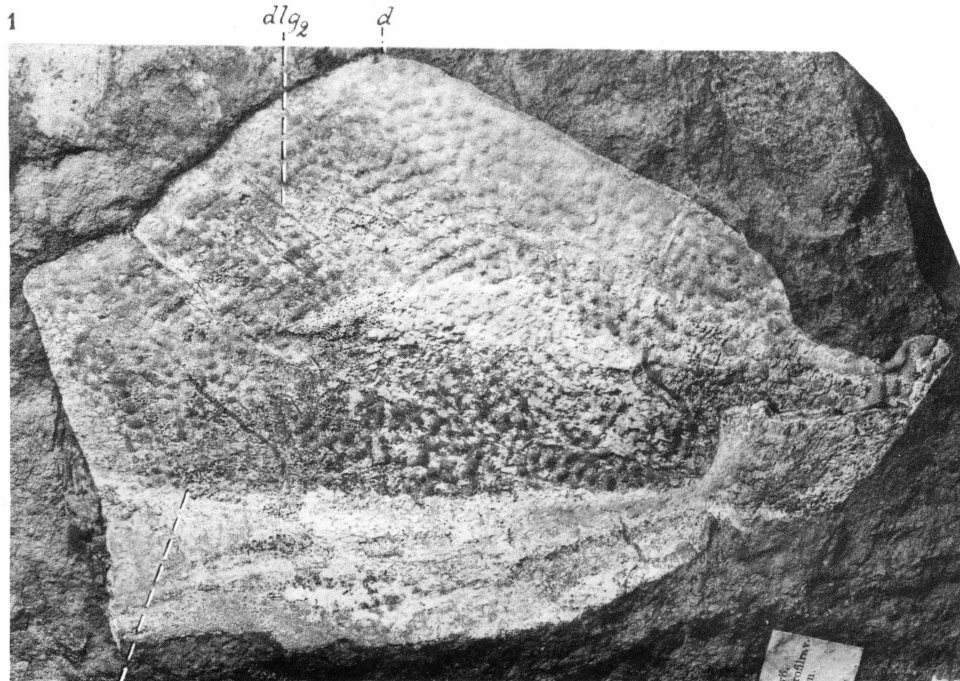
*Bothriolepis groenlandica* Heintz.

Figs. 1, 2. Deficient right mixilateral plate. Fig. 1, impression of the lateral side; fig. 2, impression of the medial side. Specimen No. 1199a, b. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

*crtp*, crista transversalis interna posterior (impression); *cv*, area overlapping anterior median dorsal plate (impression); *d*, dorsal corner; *dlg<sub>2</sub>*, posterior oblique abdominal pit-line groove; *dlr*, dorso-lateral ridge.



## Plate 47.

### *Bothriolepis groenlandica* Heintz.

Fig. 1. Deficient right mixilateral plate in medial aspect. A large part of the dorsal lamina of the plate preserved as an impression of its outside. Specimen No. 1085. Nat. size.

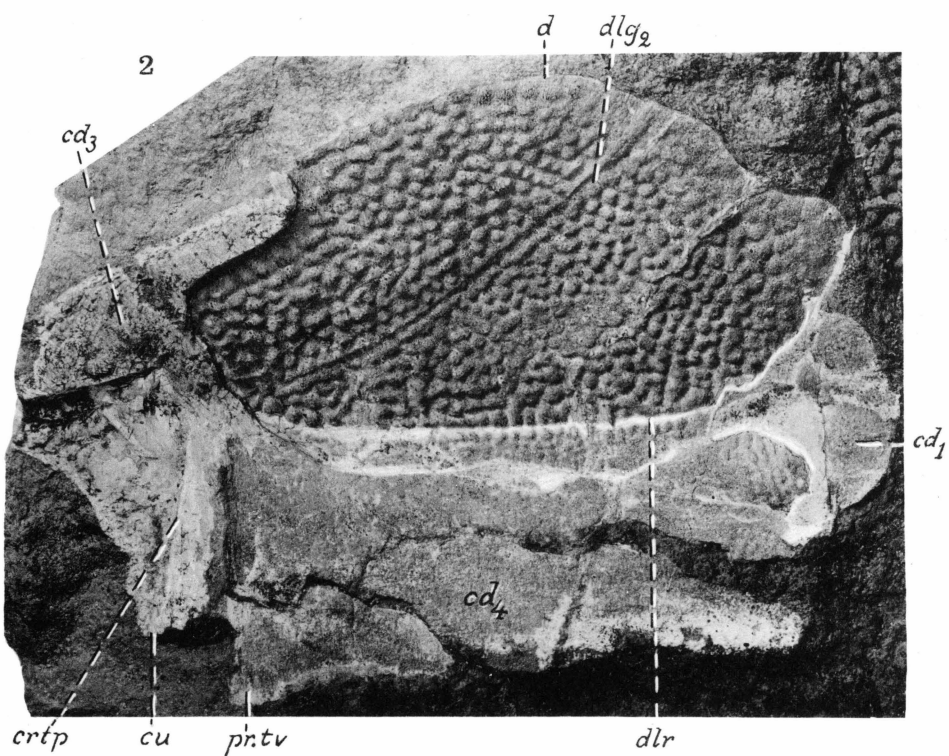
Gauss Peninsula. Glacier Valley. Bend of brook, W. slope of ravine. Horizon 422 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Somewhat complete left mixilateral plate represented mainly by an impression of its outside. Specimen No. 1002. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

$cd_1$ , area overlapped by anterior dorso-lateral plate;  $cd_3$ , area overlapped by the posterior median dorsal plate;  $cd_4$ , area overlapped by posterior ventro-lateral plate; *crt**p*, crista transversalis interna posterior; *cu*, postero-ventral ornamented corner; *d*, dorsal corner; *dlg*<sub>2</sub>, posterior oblique abdominal pit-line groove; *dlr*, dorso-lateral ridge; *pr. tv*, postero-ventral process.



**Plate 48.**

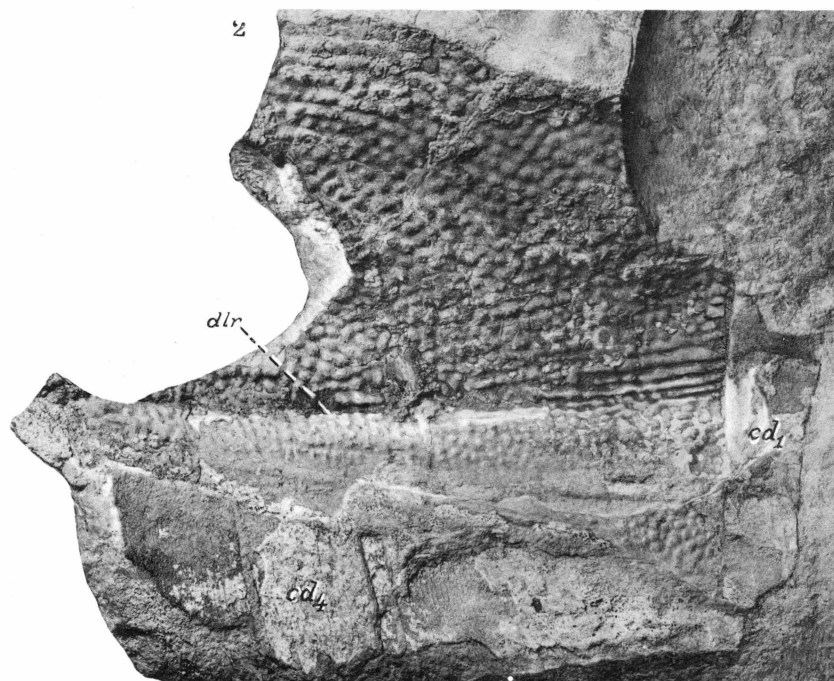
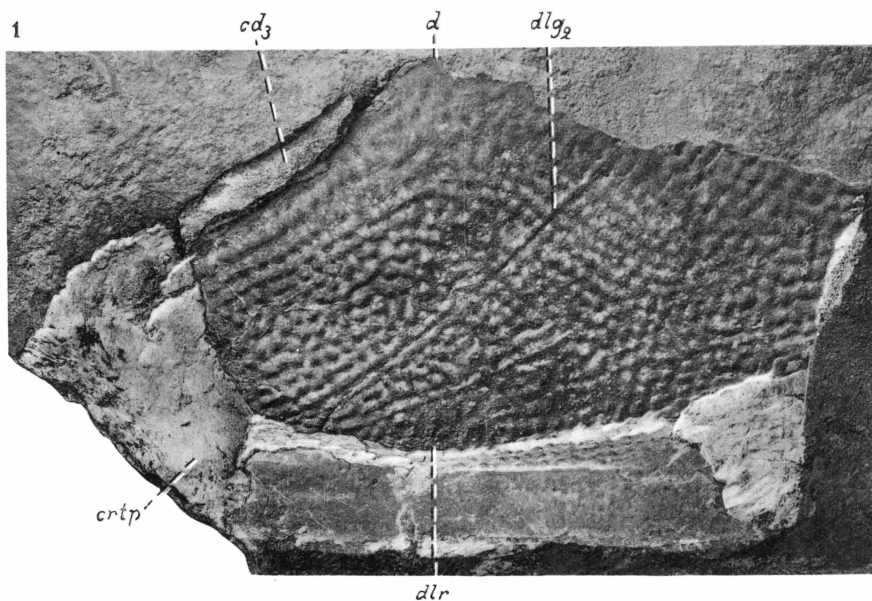
*Bothriolepis groenlandica* Heintz.

Figs. 1, 2. Two deficient left mixilateral plates represented mainly by impressions of their outsides. Specimens Nos. 1125 and 1053 respectively. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

$cd_1$ , area overlapped by anterior dorso-lateral plate;  $cd_3$ , area overlapped by posterior median dorsal plate;  $cd_4$ , area overlapped by posterior ventro-lateral plate;  $crt_p$ , crista transversalis interna posterior;  $d$ , dorsal corner;  $dlg_2$ , posterior oblique abdominal pit-line groove;  $dlr$ , dorso-lateral ridge.



**Plate 49.**

*Bothriolepis groenlandica* Heintz.

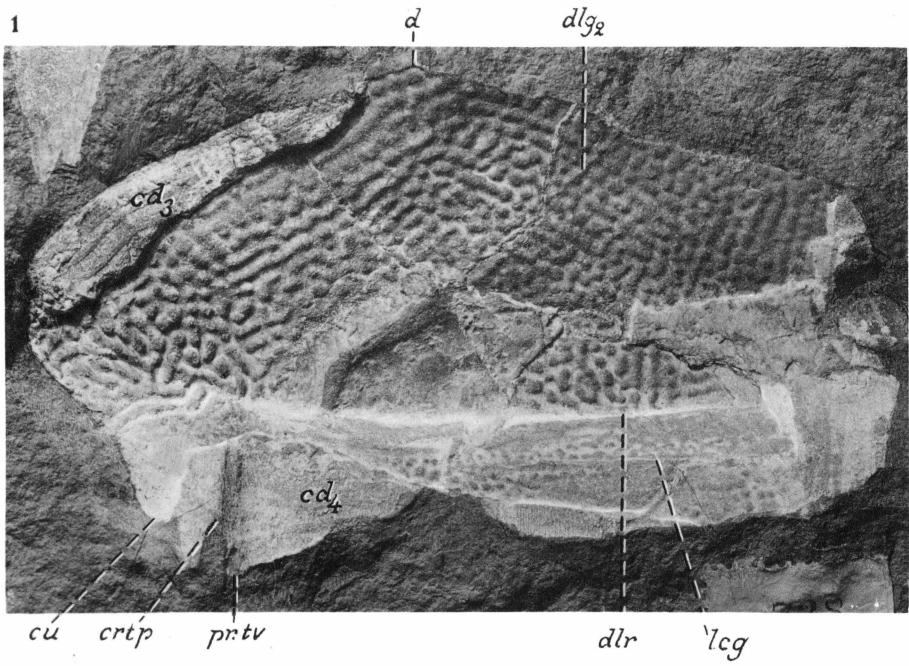
Figs. 1, 2. Two deficient mixilateral plates, a left and a right one respectively. Both plates represented mainly by impressions of their outsides. Specimens Nos. 1019 and 1139 respectively. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

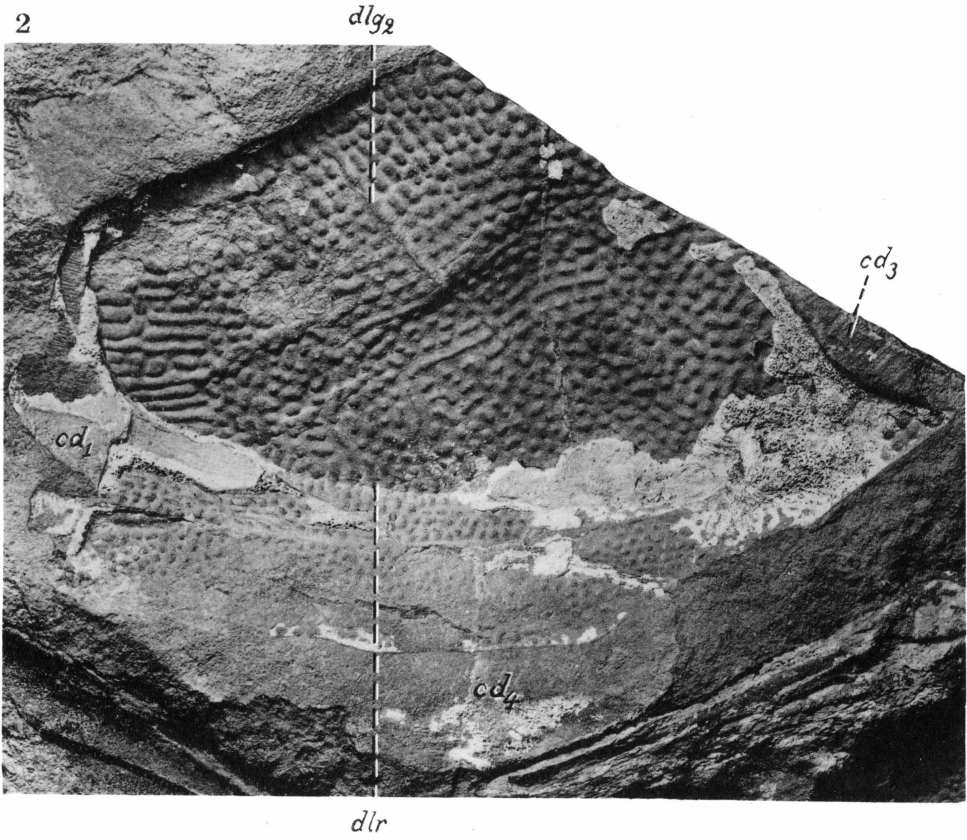
Explanation of letters.

*cd*<sub>1</sub>, area overlapped by anterior dorso-lateral plate; *cd*<sub>3</sub>, area overlapped by posterior median dorsal plate; *cd*<sub>4</sub>, area overlapped by posterior ventro-lateral plate; *crtp*, crista transversalis interna posterior; *cu*, postero-ventral ornamented corner; *d*, dorsal corner; *dlg*<sub>2</sub>, posterior oblique abdominal pit-line groove; *dtr*, dorso-lateral ridge; *leg*, main lateral line groove; *pr. tv*, postero-ventral process.

1



2



## Plate 50.

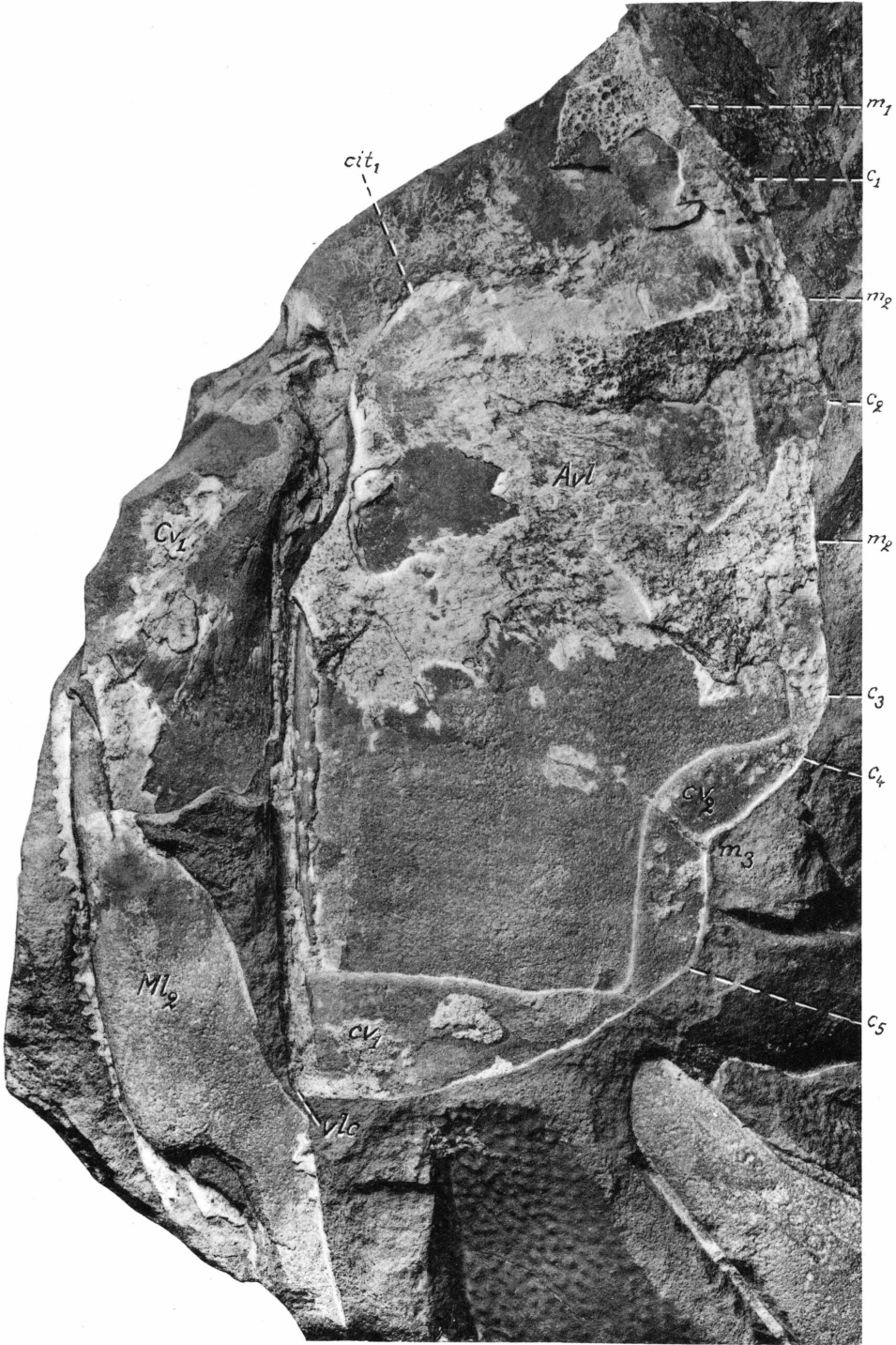
### *Bothriolepis groenlandica* Heintz.

Deficient right anterior ventro-lateral plate in ventral aspect and certain plates of the proximal segment of the right pectoral fin. All the plates preserved mainly as impressions of their inner sides. Specimen No. 1131. Slightly diminished. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine between that and profile I. About 526 m. Expedition 1934.

#### Explanation of letters.

*Avl*, anterior ventro-lateral plate (ventral lamina); *cv*<sub>1</sub>, ventral central plate 1; *ML*<sub>2</sub>, lateral marginal plate 2; *c*<sub>1</sub>, corner between anterior (*m*<sub>1</sub>) and middle (*m*<sub>2</sub>) divisions of medial margin of ventral lamina of *Avl*-plate; *c*<sub>2</sub>, *c*<sub>3</sub>, corners on middle division (*m*<sub>3</sub>) of medial margin of ventral lamina of *Avl*-plate; *c*<sub>4</sub>, corner between middle (*m*<sub>2</sub>) and posterior (*m*<sub>3</sub>) divisions of medial lamina; *c*<sub>5</sub>, posterior medial corner of ventral lamina of *Avl*-plate; *cit*<sub>1</sub>, postbranchial crest (part of the crista transversalis interna anterior); *cv*<sub>1</sub>, area overlapping posterior ventro-lateral plate (impression); *cv*<sub>2</sub>, area overlapping median ventral plate (impression); *m*<sub>2</sub>, anterior division of medial margin of ventral lamina of *Avl*-plate connected with corresponding margin of *Avl*-plate of opposite side; *m*<sub>3</sub>, posterior division of medial margin of ventral lamina of *Avl*-plate connected with median ventral plate; *vlc*, posterior ventro-lateral corner of *Avl*-plate.



## Plate 51.

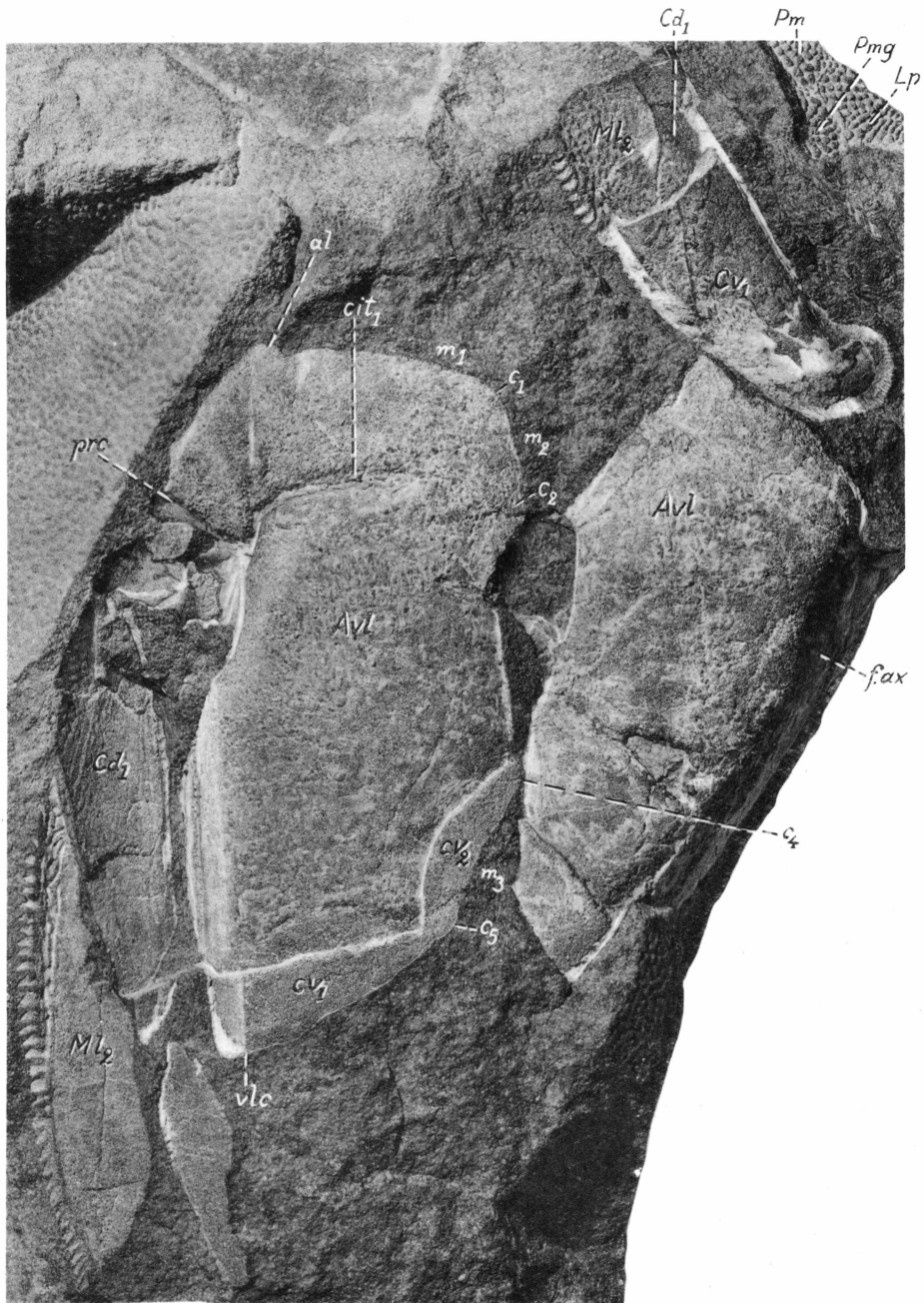
### *Bothriolepis groenlandica* Heintz.

Anterior parts of the ventral wall of a trunk-armour with a proximal part of the pectoral fin-armour in a somewhat detached condition. Besides the remains just referred to, also certain other skeletal remains are shown. The anterior ventro-lateral plates represented by impressions of their inner sides. Specimen No. 1099.  $\frac{8}{10}$  of the nat. size.

Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.

#### Explanation of letters.

*Avl*, anterior ventro-lateral plate (ventral lamina); *Cd<sub>1</sub>*, dorsal central plate 1 (impression of outside of plate); *Cv<sub>1</sub>*, ventral central plate 1; *Lp*, lateral plate; *Ml<sub>2</sub>*, lateral marginal plate 2; *Pm*, paranuchal-marginal plate; *Pmg*, postmarginal plate; *al*, antero-lateral corner of ventral lamina of anterior ventro-lateral plate; *c<sub>1</sub>*, corner between anterior (*m<sub>1</sub>*) and middle (*m<sub>2</sub>*) divisions of medial margin of ventral lamina of *Avl*-plate; *c<sub>2</sub>*, corner on middle division (*m<sub>2</sub>*) of ventral lamina of *Avl*-plate; *c<sub>4</sub>*, corner between middle (*m<sub>2</sub>*) and posterior (*m<sub>3</sub>*) divisions of ventral lamina of *Avl*-plate; *c<sub>5</sub>*, posterior medial corner of ventral lamina; *cit<sub>1</sub>*, postbranchial crest (impression); *cv<sub>1</sub>*, area overlapping posterior ventro-lateral plate (impression); *cv<sub>2</sub>*, area overlapping median ventral plate (impression); *f. ax*, foramen axillare; *m<sub>1</sub>*, anterior division of medial margin of ventral lamina of *Avl*-plate connected with semilunar plate; *m<sub>2</sub>*, middle division of medial margin of ventral lamina of *Avl*-plate connected with anterior ventro-lateral plate of opposite side; *m<sub>3</sub>*, posterior division of medial margin of ventral lamina of *Avl*-plate connected with median ventral plate; *pre*, prepectoral corner of *Avl*-plate; *vlc*, posterior ventro-lateral corner of *Avl*-plate.



## Plate 52.

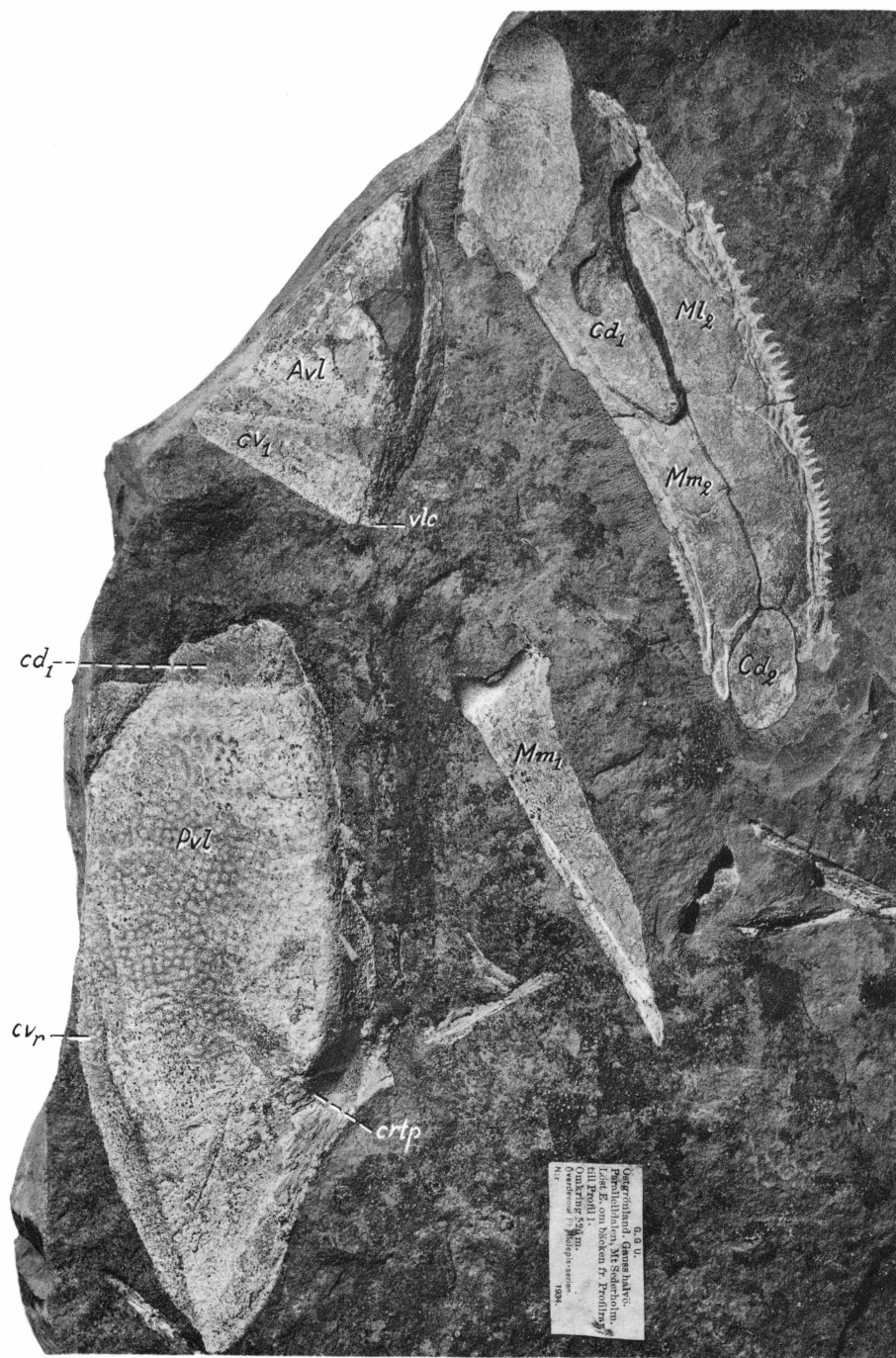
### *Bothriolepis groenlandica* Heintz.

Parts of the left half of a ventral wall of a trunk-armour with the pectoral fin attached. In addition a medial marginal plate 1 is shown. The anterior and posterior ventro-lateral plates are displayed from the ventral (external) side. The proximal fin-segment is represented by an impression of its dorsal face. The medial marginal plate 1 is preserved as an impression of its outer (medial) face. Specimen No. 1161b. The counterpart of this specimen is reproduced in pl. 53. Approximately  $\frac{4}{5}$  of the nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-horizon. Expedition 1934.

#### Explanation of letters.

*Avl*, anterior ventro-lateral plate; *Cd<sub>1</sub>*, *Cd<sub>2</sub>*, dorsal central plates 1 and 2; *Cv<sub>1</sub>*, *Cv<sub>2</sub>*, ventral central plates 1 and 2; *Ml<sub>2</sub>*, lateral marginal plate 2; *Mm<sub>1</sub>*, *Mm<sub>2</sub>*, medial marginal plates 1 and 2; *Pvl*, posterior ventro-lateral plate; *c<sub>4</sub>*, corner between middle (*m<sub>2</sub>*) and posterior (*m<sub>3</sub>*) divisions of medial margin of ventral lamina of *Avl*-plate; *c<sub>5</sub>*, postero-medial corner of medial lamina of *Avl*-plate; *cd<sub>1</sub>*, area overlapped by anterior ventro-lateral plate; *crlp*, crista transversalis interna posterior (partly impression); *cvr*, area overlapping posterior ventro-lateral plate (impression); *cvr*, area overlapping right posterior ventro-lateral plate; *m<sub>2</sub>*, *m<sub>3</sub>*, middle and posterior divisions of medial margin of *Avl*-plate (connected with the *Avl*-plate of the opposite side, and with the median ventral plate respectively); *vlc*, ventro-lateral corner of *Avl*-plate; *vlr*, ventro-lateral ridge.



**Plate 53.**

*Botheriolepis groenlandica* Heintz.

Counterpart of the specimen reproduced in pl. 52. The anterior and posterior ventrolateral plates preserved as impressions of their outer sides. The proximal segment of the pectoral fin represented by its ventral wall exposed so as to show the inner side. Specimen No. 1161b. Slightly less than  $\frac{3}{4}$  of the natural size.

Locality, horizon etc. see pl. 52. . .

Explanation of letters.

See pl. 52.



## Plate 54.

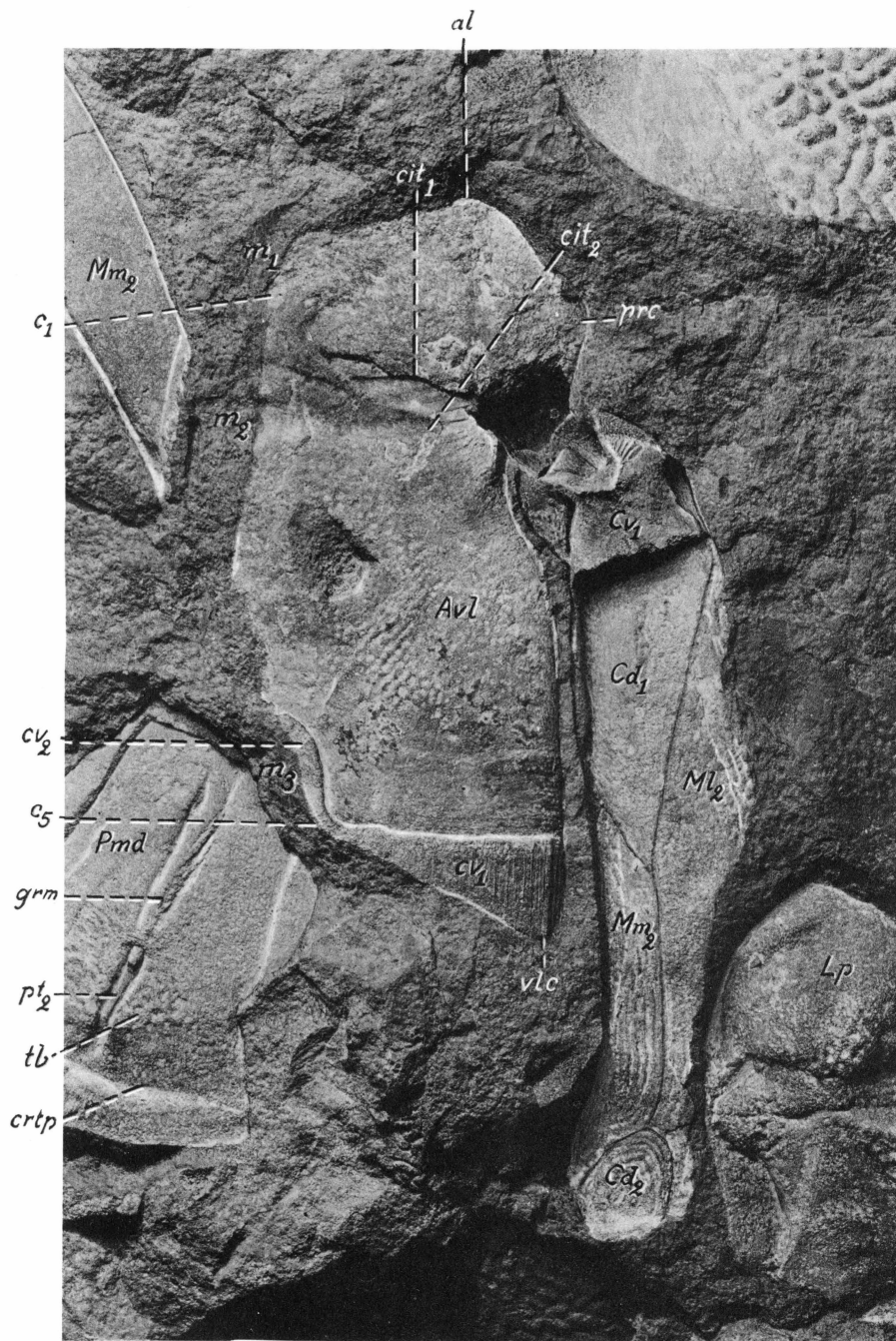
### *Bothriolepis groenlandica* Heintz.

Left anterior ventro-lateral plate in ventral aspect with a deficient proximal segment of the pectoral fin attached. The anterior ventro-lateral plate preserved as an impression of the inner side of its ventral lamina. The proximal segment of the pectoral fin represented mainly by an impression of the upper (outer) side of its dorsal wall. In addition to the skeletal parts just referred to impressions of several other skeletal elements are seen. Specimen No. 1020. Nat. size.

Gauss Peninsula, Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-horizon. Expedition 1934.

#### Explanation of letters.

*Avl*, anterior ventro-lateral plate; *Cd*<sub>1</sub>, dorsal central plate 1 (impression of the outside of the plate); *Cd*<sub>2</sub>, dorsal central plate 2; *Cv*<sub>1</sub>, ventral central plate 1; *Lp*, lateral plate; *Ml*<sub>2</sub>, lateral marginal plate 2; *Mm*<sub>2</sub>, medial marginal plate 2; *Pmd*, posterior median dorsal plate; *al*, antero-lateral corner of ventral lamina of *Avl*-plate; *c*<sub>1</sub>, corner between anterior (*m*<sub>1</sub>) and middle (*m*<sub>2</sub>) divisions of medial margin of ventral lamina of *Avl*-plate; *c*<sub>3</sub>, posterior medial corner of ventral lamina of *Avl*-plate; *cit*<sub>1</sub>, postbranchial crest (anterior one of the two crests forming the ventral horizontal divisions of the crista transversalis interna anterior); *cit*<sub>2</sub>, posterior one of the two crests forming the ventral, horizontal division of the crista transversalis interna anterior; *cv*<sub>1</sub>, area overlapping posterior ventro-lateral plate; *cv*<sub>2</sub>, area overlapping median ventral plate; *grm*, ventral median groove (of the lower side of the *Pmd*-plate); *m*<sub>1</sub>, anterior division of medial margin of ventral lamina of *Avl*-plate (connected with semilunar plate); *m*<sub>2</sub>, middle division of the medial margin of ventral lamina of *Avl*-plate (connected with anterior ventro-lateral plate of opposite side); *m*<sub>3</sub>, posterior division of medial margin of ventral lamina of *Avl*-plate (connected with the median ventral plate); *prc*, prepectoral corner; *pt*<sub>2</sub>, posterior ventral pit (of plate *Pmd*); *tb*, ventral tuberosity (impression); *vlc*, posterior ventro-lateral corner of anterior ventro-lateral plate.



## Plate 55.

### *Bothriolepis groenlandica* Heintz.

Fig. 1. Deficient left anterior ventro-lateral plate in lateral aspect. The proportions of the lateral lamina well shown. Specimen No. 1099, the same one as in pl. 51. Nat. size.

Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Plaster cast of a deficient right posterior ventro-lateral plate. Lateral aspect. Specimen No. 1101. Nat. size.

Same locality, horizon etc. as the specimen in fig. 1.

Fig. 3. Plaster cast of a deficient right posterior ventro-lateral plate. Lateral aspect. Specimen No. 1102. Nat. size.

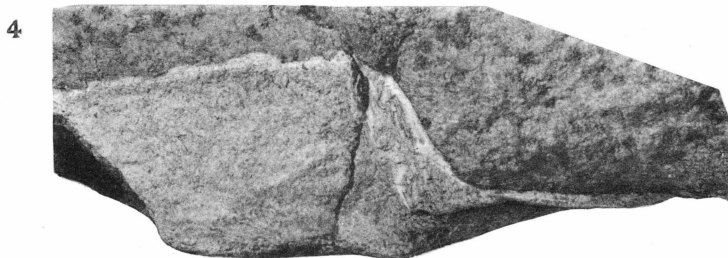
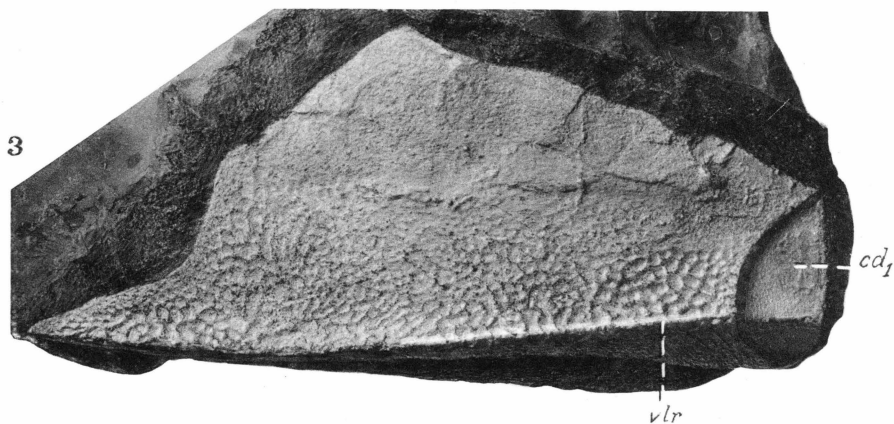
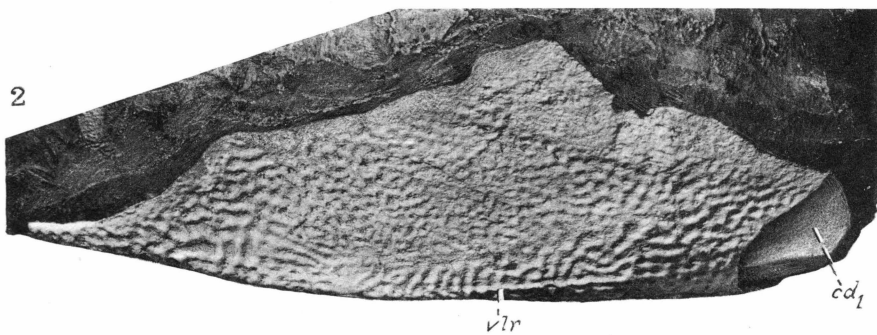
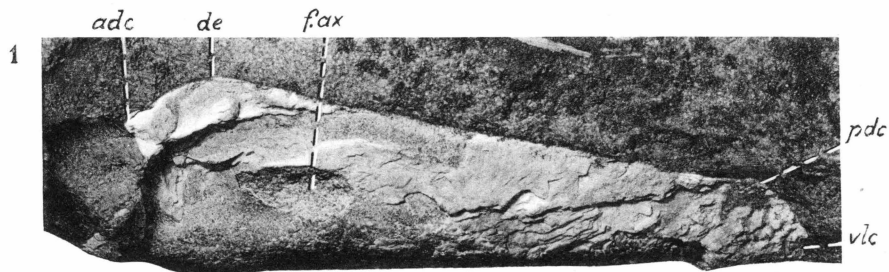
Same locality, horizon etc. as the specimen in fig. 1.

Fig. 4. Deficient left posterior ventro-lateral plate. Lateral aspect. Specimen No. 484. (Same specimen as in pl. 56, fig. 1). Nat. size.

Same locality, horizon, etc. as the specimen in fig. 1.

#### Explanation of letters.

*adc*, antero-dorsal corner (of lateral lamina of anterior ventro-lateral plate); *cd*<sub>1</sub>, area of posterior ventro-lateral plate overlapped by anterior ventro-lateral plate; *de*, dorsal corner of exposed, ornamented area of lateral lamina of anterior ventro-lateral plate; *f. ax*, foramen axillare; *pd*<sub>c</sub>, posterior dorsal corner of lateral lamina of anterior ventro-lateral plate; *vlc*, posterior ventro-lateral corner of anterior ventro-lateral plate; *vlr*, ventro-lateral ridge.



### Plate 56.

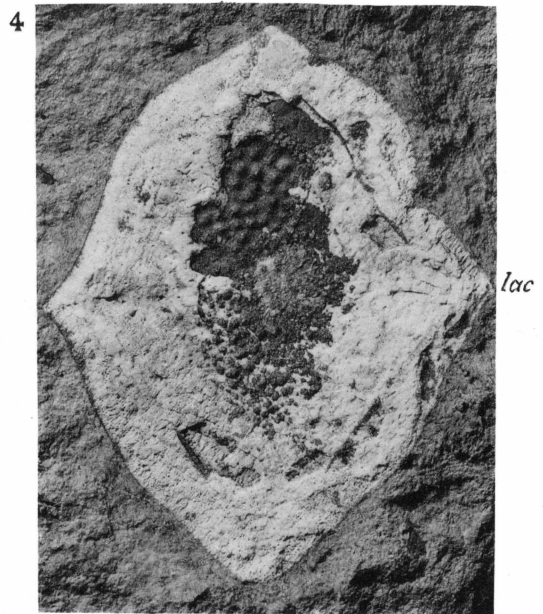
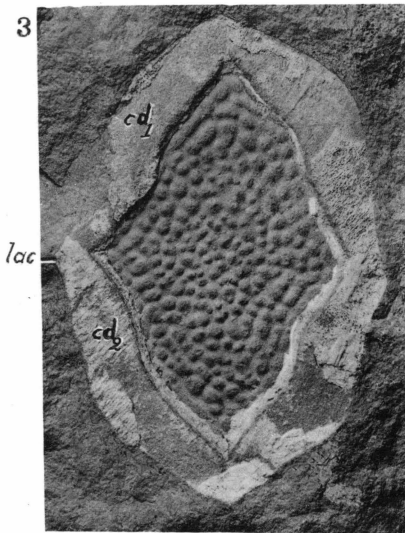
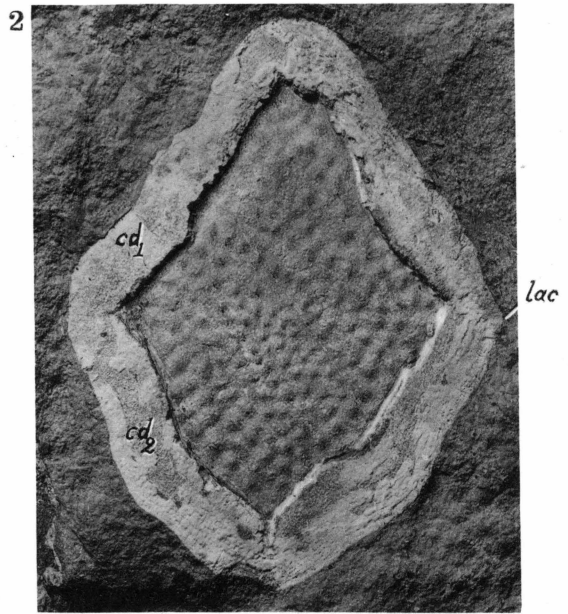
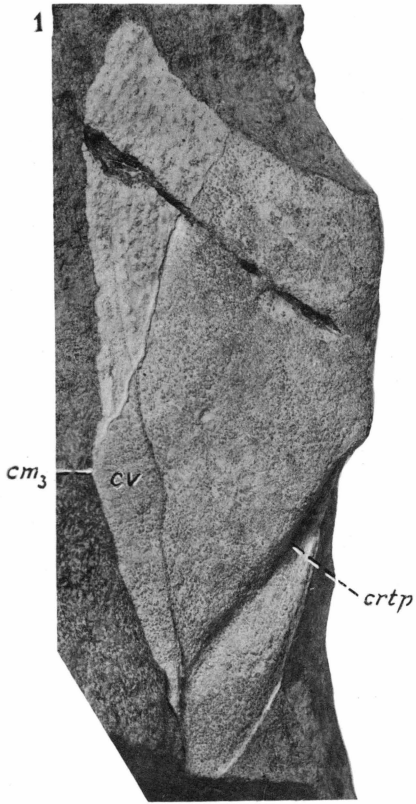
*Bothriolepis groenlandica* Heintz.

Fig. 1. Deficient left posterior ventro-lateral plate preserved as an impression of its internal side. Ventral aspect. The same plate as the one in pl. 55, fig. 4. Nat. size. Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.

Figs. 2-4. Three median ventral plates preserved entirely or partly as impressions of their outer (ventral) side. Specimens Nos. 1158, 1146 and 1159 respectively. Nat. size. Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

$cd_1$ ,  $cd_2$ , overlapped areas of posterior median ventral plate;  $cm_3$ , posterior medial corner of medial margin of ventral lamina of posterior ventro-lateral plate;  $cv$ , area of left posterior ventro-lateral plate overlapping right posterior ventro-lateral plate;  $lac$ , lateral corner of median ventral plate.



**Plate 57.**

*Bothriolepis groenlandica* Heintz.

Fig. 1. Deficient median ventral plate. Impression of outer (ventral) side. Specimen No. 1063. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Right lateral marginal plate 2, represented mainly by an impression of its dorsal side. Specimen No. 1056. Nat. size.

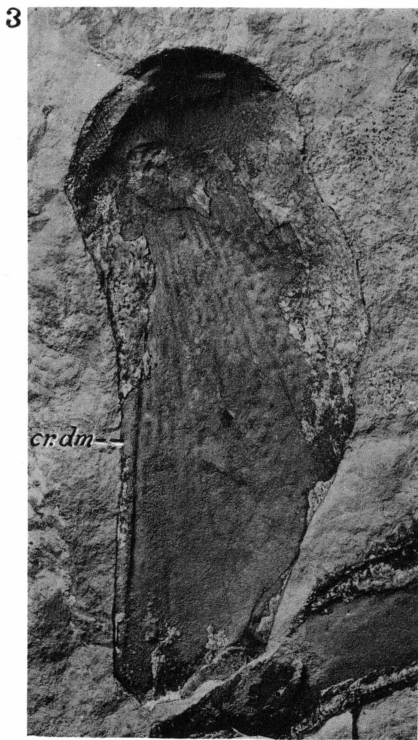
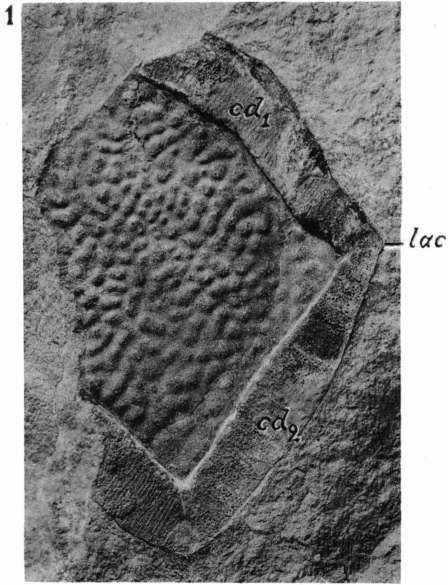
Same locality and horizon etc. as the specimen in fig. 1.

Fig. 3. Deficient left dorsal central plate 1, preserved mainly as an impression of its dorsal side. Specimen No. 1065. Nat. size.

Same locality, horizon etc. as the specimen in fig. 1.

Explanation of letters.

*cd*<sub>1</sub>, *cd*<sub>2</sub>, overlapped areas of the median ventral plate; *cr. dm*, dorso-medial crest of dorsal central plate 1 (this crest formed by fusions of medial spines); *lac*, lateral corner of median ventral plate.



### Plate 58.

Fig. 1. *Bothriolepis groenlandica* Heintz. Deficient right pectoral fin preserved mainly as an impression of its dorsal side. Specimen No. 1121. Nat. size.

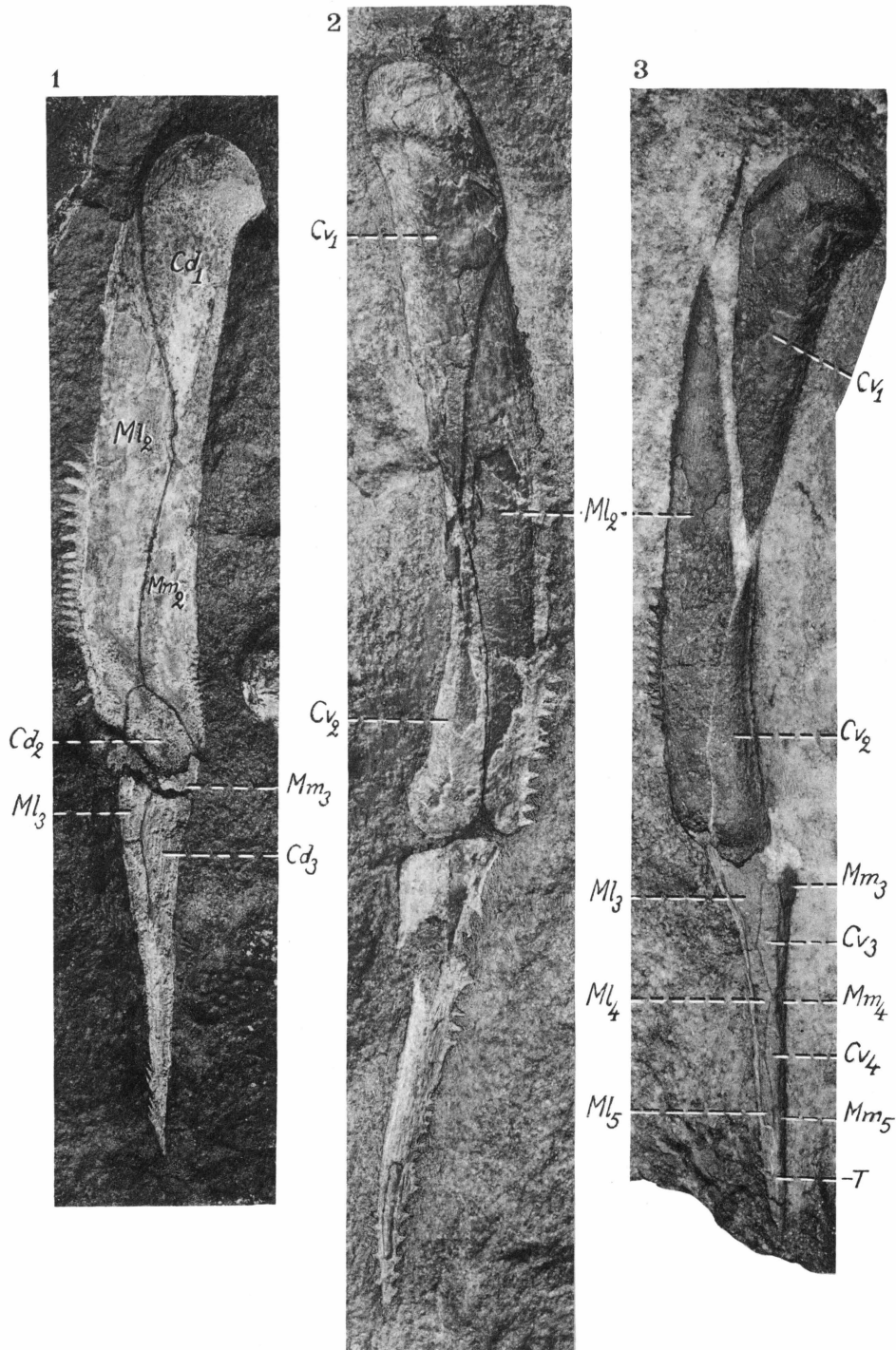
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Somewhat E. of Crossopterygian Ravine. Loose 543 m. *Phyllolepis*-series.

Figs. 2, 3. *Bothriolepis jarviki* n.sp. Left and right pectoral fins respectively. Ventral aspect. Specimen No. 150. Partly reproduced by Stensiö in 1931, pl. 1, fig. 1.  $\times 2$ .

South coast of W. part of Gauss Peninsula; "the *Bothriolepis*-Cleft" (Säve-Söderbergh 1934). Expedition 1930.

#### Explanation of letters.

$Cd_1-Cd_3$ , dorsal central plates 1-3;  $Cv_1-Cv_4$ , ventral central plates 1-4;  $Ml_2-Ml_5$ , lateral marginal plates 1-5;  $Mm_2-Mm_5$ , medial marginal plates 2-5;  $T$ , terminal plate.



**Plate 59.**

*Bothriolepis groenlandica* Heintz.

Fig. 1. Plaster cast of a somewhat crushed proximal segment of a left pectoral fin. Dorsal aspect. Specimen No. 1103. Nat. size.

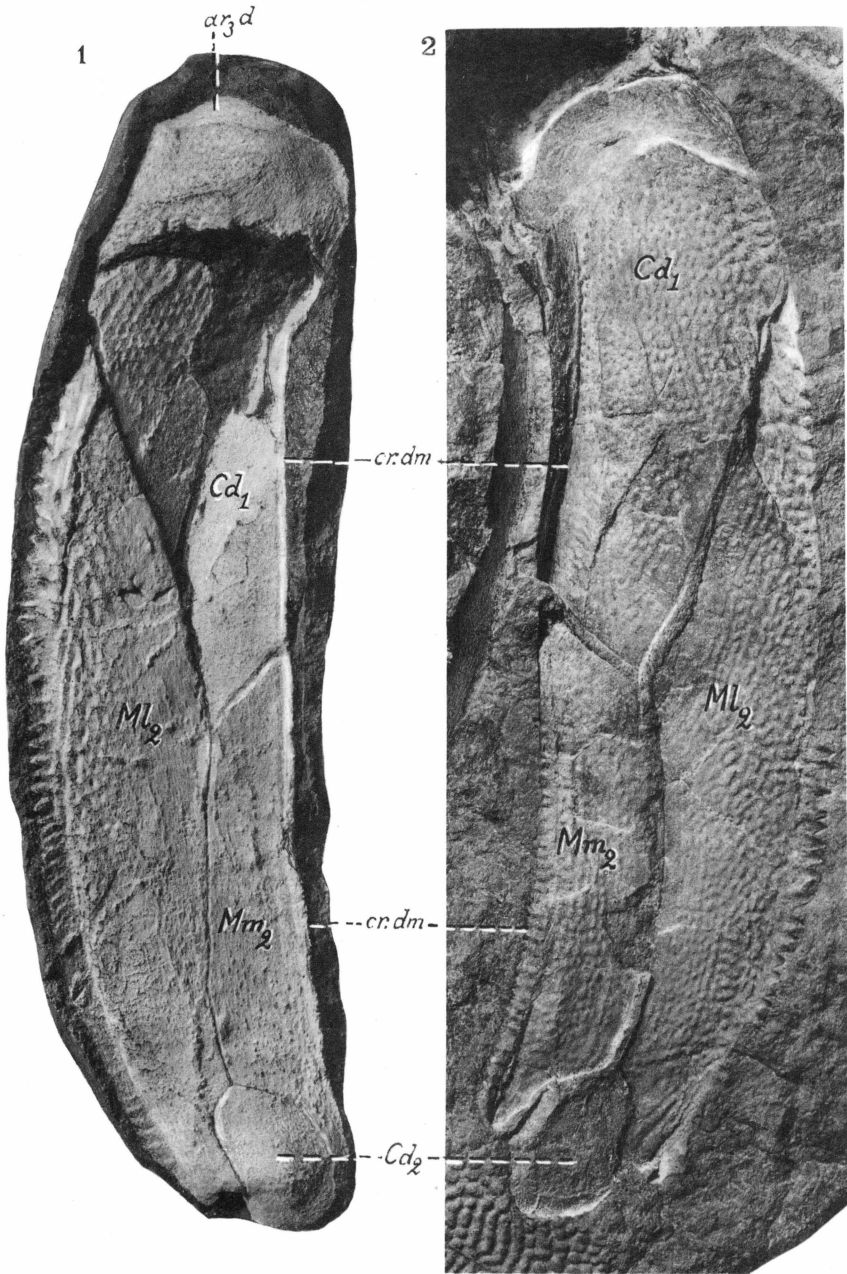
Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.

Fig. 2. Impression of the dorsal side of a proximal segment of a left pectoral fin. Specimen No. 1169. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Explanation of letters.

$Cd_1$ ,  $Cd_2$ , dorsal central plates 1 and 2;  $MI_2$ , lateral marginal plate 2;  $Mm_2$ , medial marginal plate 2;  $ar_3d$ , external articular area of dorsal central plate 1;  $cr. dm$ , dorso-medial crest formed by the fusion of medial spines and passing over posteriorly into independent medial spines.



## Plate 60.

### *Bothriolepis groenlandica* Heintz.

Fig. 1. Small deficient ventral central plate 1, represented to a large extent by an impression of its internal side. Specimen No. 1172.  $\times 2$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Proximal part of a proximal segment. Ventral aspect. The various plates represented mainly by impressions. Specimen No. 1104. Nat. size.

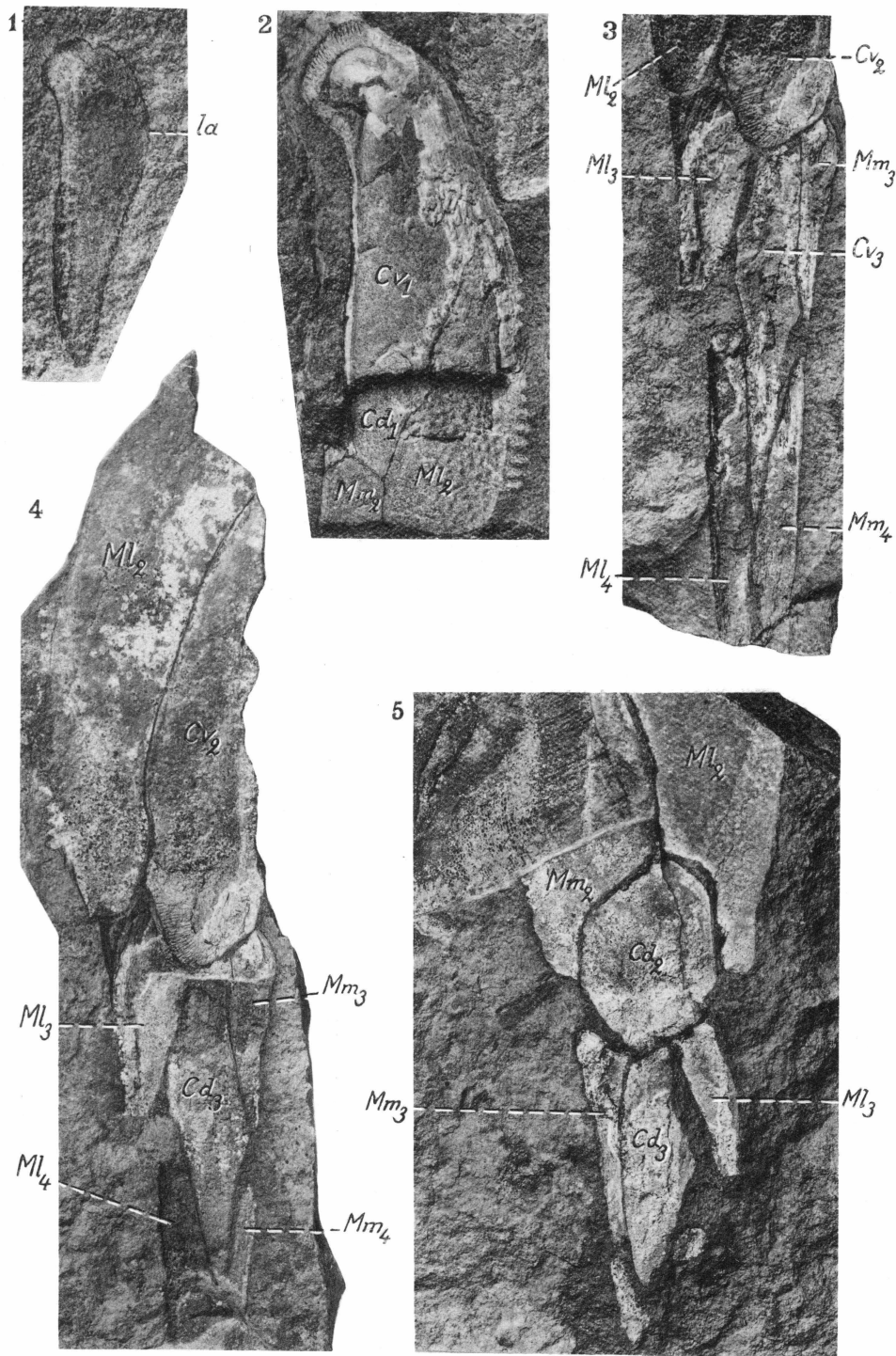
Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.

Figs. 3-5. Parts of a left pectoral fin. The bones preserved mainly as impressions. Fig. 3, a distal part of the proximal segment with an adjacent part of the distal segment. Impression of the ventral side. Fig. 4. Impression of a distal part of the ventral side of the proximal segment with an adjacent part of the dorsal wall of the distal segment. Specimen No. 1200. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.

### Explanation of letters.

$Cd_1-Cd_3$ , dorsal central plates 1-3;  $Cv_1-Cv_3$ , ventral central plates 1-3;  $Ml_2-Ml_4$ , lateral marginal plates 2-4;  $Mm_2-Mm_4$ , medial marginal plates 2-4;  $la$ , lateral angle of ventral central plate 1.



### Plate 61.

#### *Bothriolepis groenlandica* Heintz.

Fig. 1. Somewhat deficient proximal segment of a left pectoral fin. The segment shows the inside of its ventral wall and most distally a part of its dorsal wall. Specimen No. 1163. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Deficient impression of the dorsal side of a proximal segment of a left pectoral fin. Specimen No. 1161 (same as in pl. 52). Nat. size.

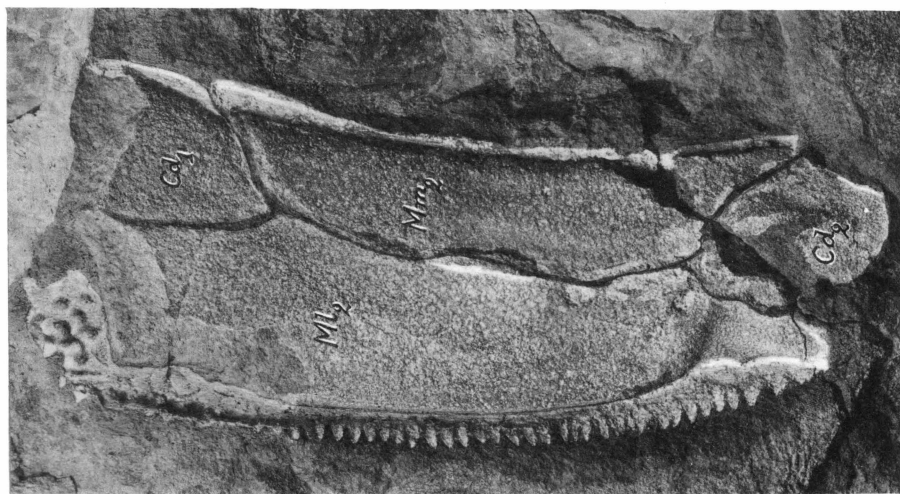
Same locality, horizon etc. as the specimen reproduced in fig. 1.

Fig. 3. Distal part of a proximal segment of a very large left pectoral fin. Dorsal aspect. The plates preserved as impressions of their lower (internal) sides. Specimen No. 1132. Nat. size.

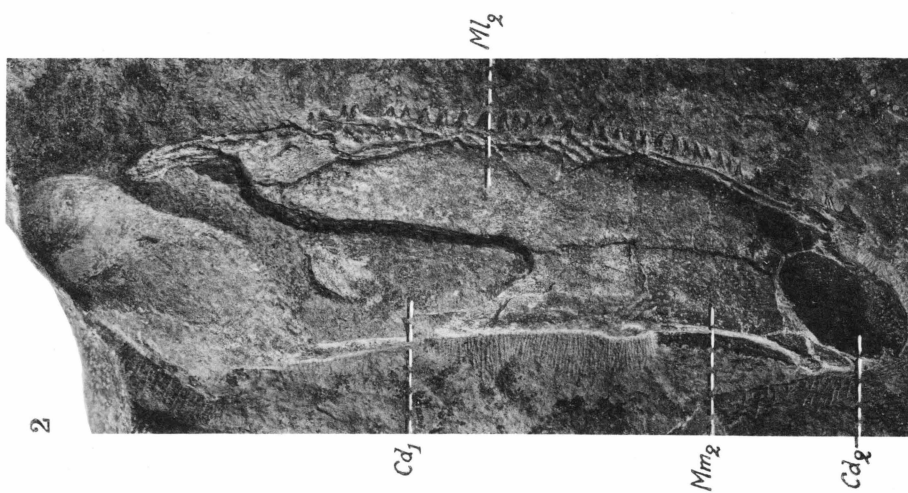
Same locality and horizon etc. as the specimen reproduced in fig. 1.

#### Explanation of letters.

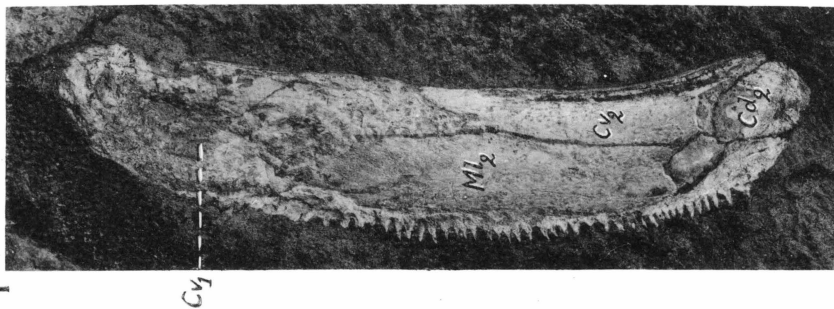
$Cd_1, Cd_2$ , dorsal central plates 1, 2;  $Cv_1, Cv_2$ , ventral central plate 1, 2;  $Ml_2$ , lateral marginal plate 2;  $Mm_2$ , medial marginal plate 2.



3



2



1

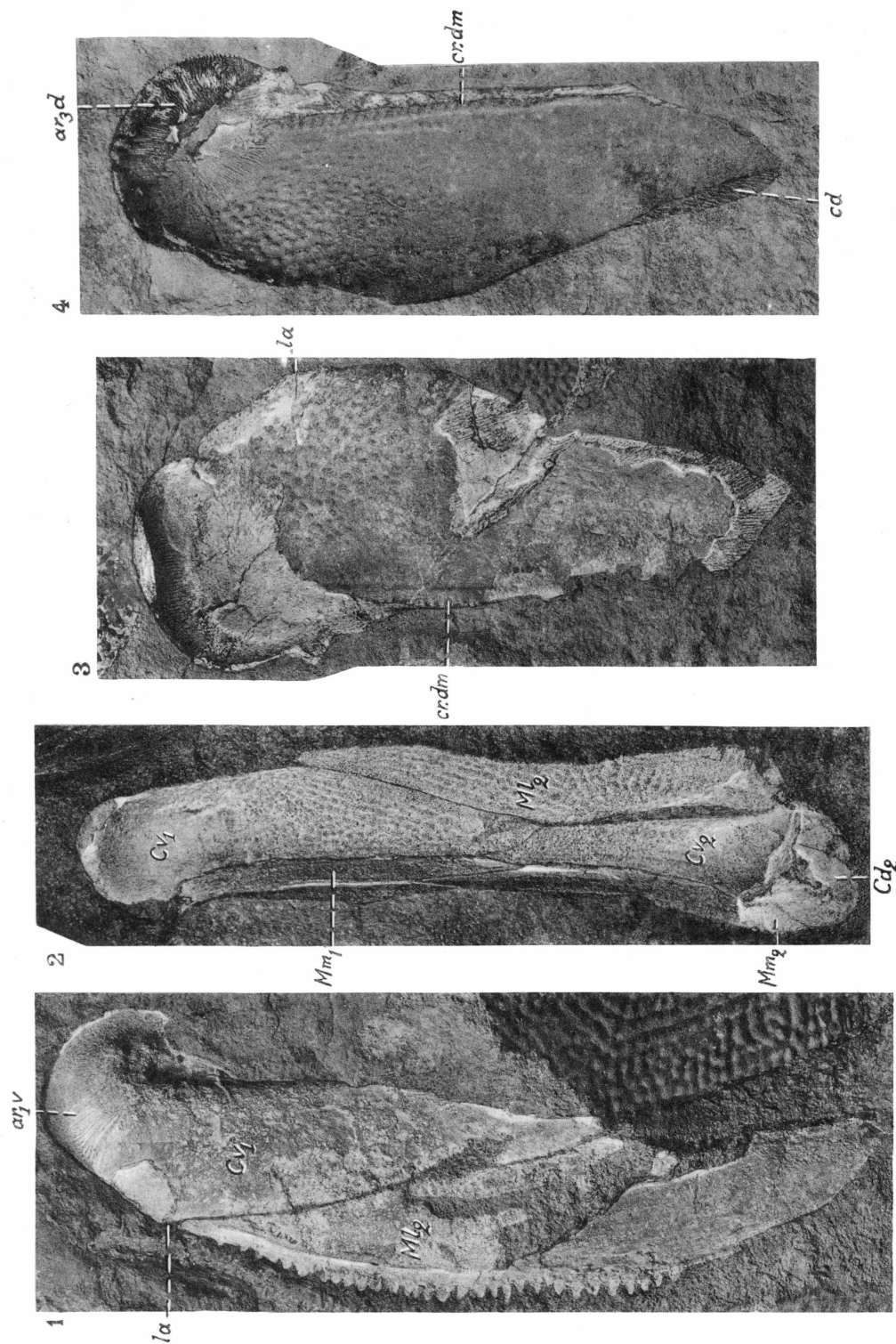
## Plate 62.

### *Bothriolepis groenlandica* Heintz.

- Fig. 1. Proximal parts of a proximal segment of a right pectoral fin. Ventral aspect. The bones preserved chiefly as impressions. Specimen No. 1126. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.
- Fig. 2. Deficient proximal segment of a right pectoral fin preserved chiefly as an impression of its ventral and medial sides. Specimen No. 1105. Nat. size.  
Cape Graah. Orvin's locality. *Phyllolepis*-series. Expedition 1931.
- Fig. 3. Deficient left dorsal central plate 1, represented to a large extent by an impression of its dorsal side. Specimen No. 1109. Nat. size.  
Same locality, and horizon etc. as the specimen reproduced in fig. 1.
- Fig. 4. Deficient right dorsal central plate 1. Mainly impression of the dorsal side of the plate. Specimen No. 1185. Nat. size.  
Gauss Peninsula. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.

#### Explanation of letters.

$Cd_2$ , dorsal central plate 2;  $Cv_1, Cv_2$ , ventral central plates 1, 2;  $Ml_2$ , lateral marginal plate 2;  $Mm_1, Mm_2$ , medial marginal plates 1, 2;  $ar_3d$ , external articular area of dorsal central plate 1;  $ar_1v$ , internal articular area of ventral central plate 1;  $cd$ , area overlapped by lateral marginal plate 2;  $cr. dm$ , dorso-medial crest formed by the fusion of medial spines;  $la$ , lateral angle of dorsal and ventral central plate 1.



### Plate 63.

*Bothriolepis groenlandica* Heintz.

Fig. 1. Two deficient right dorsal central plates 1 represented by impressions of their dorsal sides. Specimen No. 1140. Nat. size.

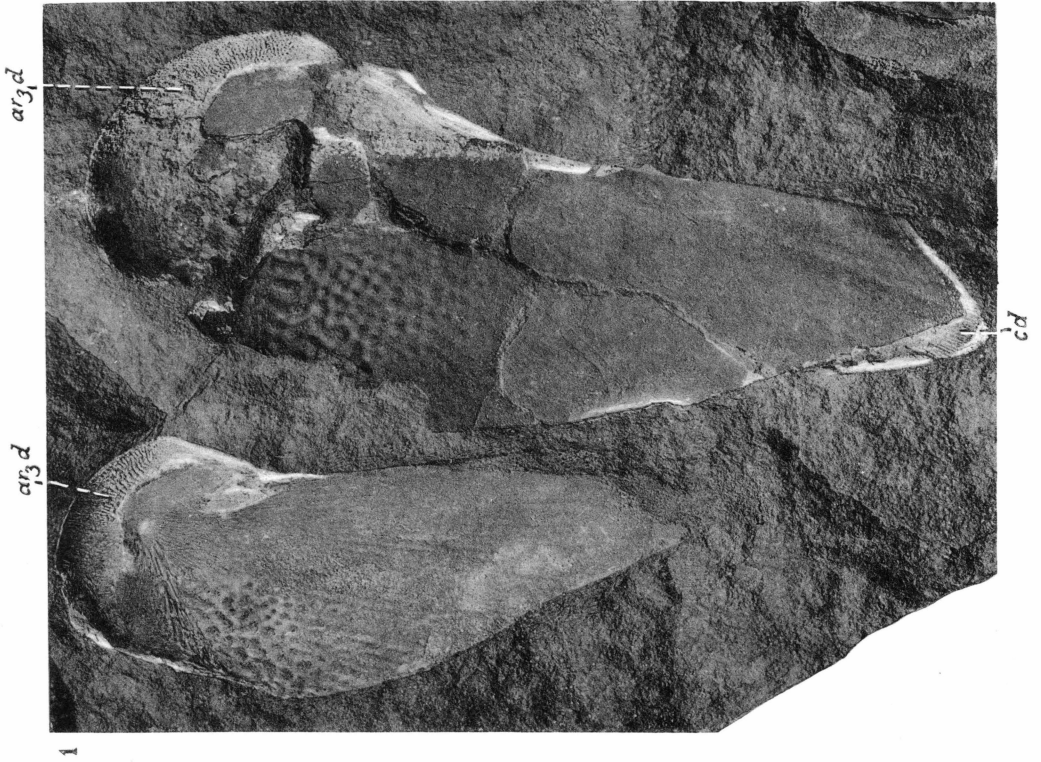
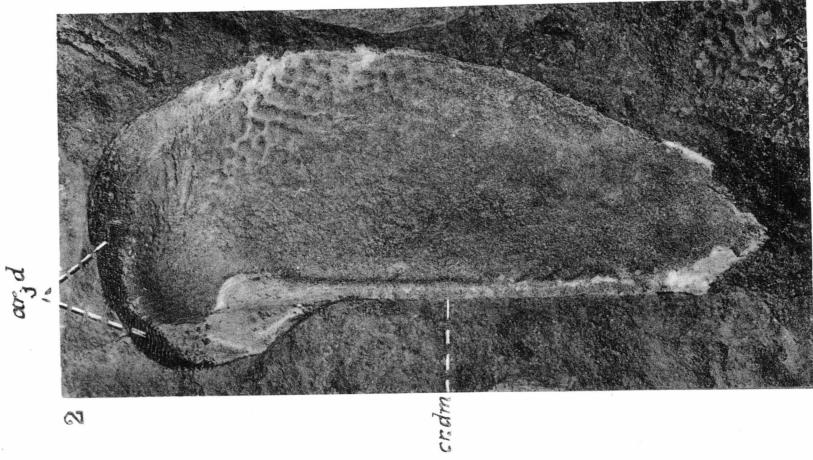
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of the Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Deficient left dorsal central plate 1. Impression of the dorsal side. Specimen No. 1152a. Nat. size.

Same locality and horizon etc. as the specimen reproduced in fig. 1.

Explanation of letters.

$ar_3d$ , external articular area;  $cd$ , area overlapped by lateral marginal plate 2;  $cr. dm$ , dorso-medial crest formed by the fusion of medial spines.



## Plate 64.

### *Bothriolepis groenlandica* Heintz.

Fig. 1. Deficient right dorsal central plate 1. Impression of the dorsal side. Specimen No. 1054. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Fig. 2. Deficient impression of the internal side of a right ventral central plate 1. Specimen No. 1111. Nat. size.

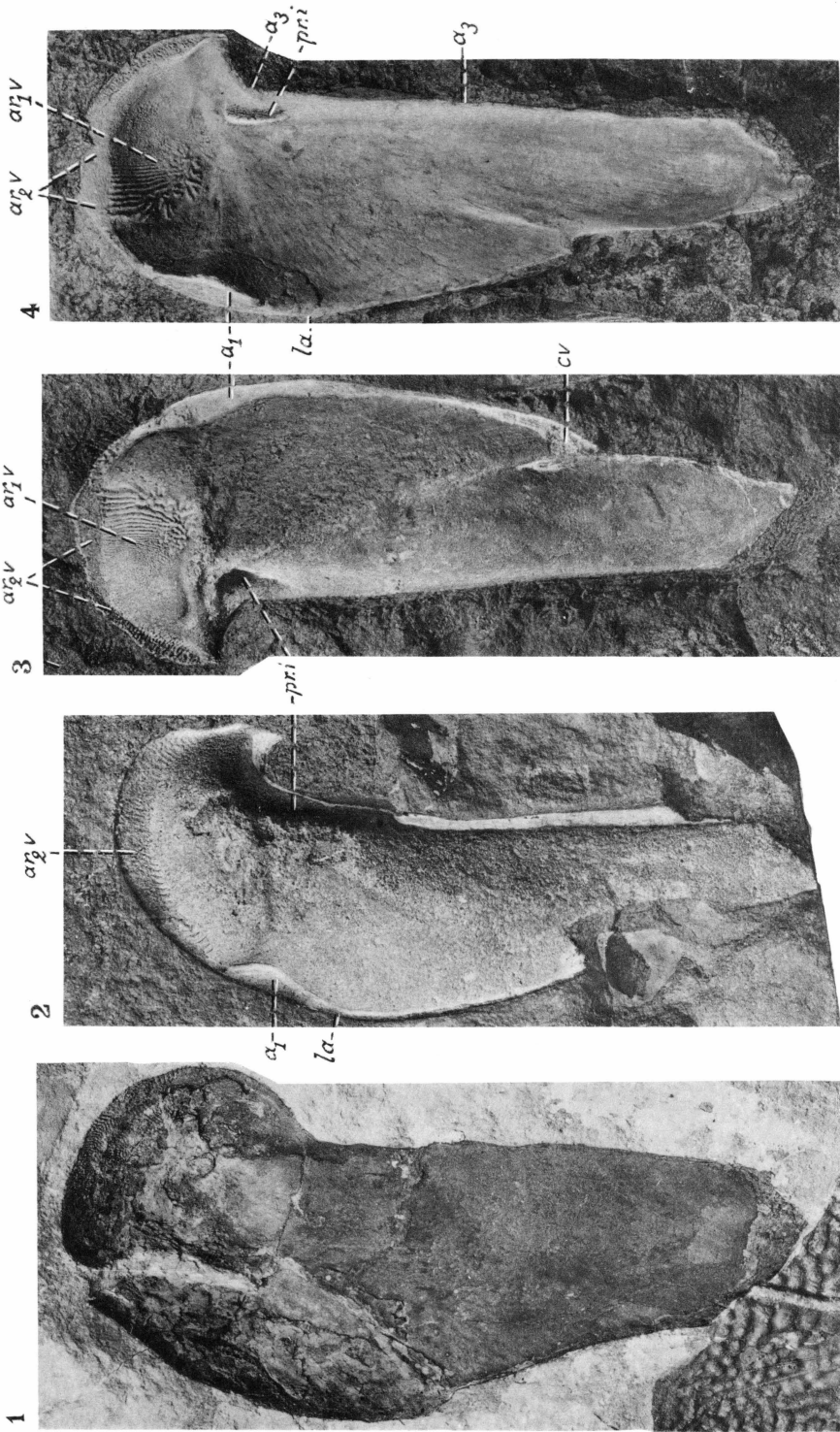
Same locality and horizon etc. as the specimen in fig. 1.

Figs. 3, 4. Almost complete impression of the inner side of a left ventral central plate 1 and plaster cast of that impression respectively. Specimen No. 1021. Nat. size.

Same locality and horizon etc. as the specimen reproduced in fig. 1.

#### Explanation of letters.

$a_1$ , area attached to the dorsal central plate 1;  $a_2$ , margin attached to the lateral marginal plate 2;  $a_3$ , margin attached to the medial marginal plate 1;  $ar_1v$ , internal articular area of ventral central plate 1;  $ar_2v$ , marginal articular area of ventral central plate 1;  $cv$ , area overlapping lateral marginal plate 2;  $la$ , lateral angle;  $pr. i$ , internal process of ventral central plate 1, perhaps for the insertion of a muscle.



**Plate 65.**

*Bothriolepis groenlandica* Heintz.

Fig. 1. Deficient impression of the outside of a left ventral central plate 1. Specimen No. 1182. Nat. size.

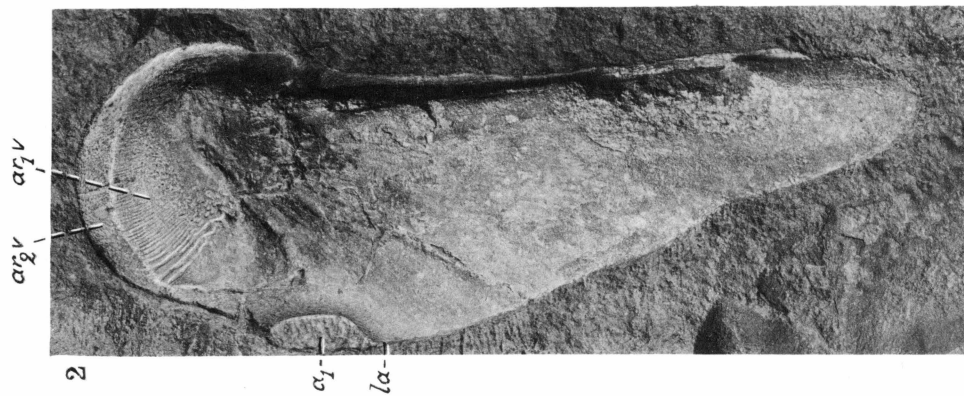
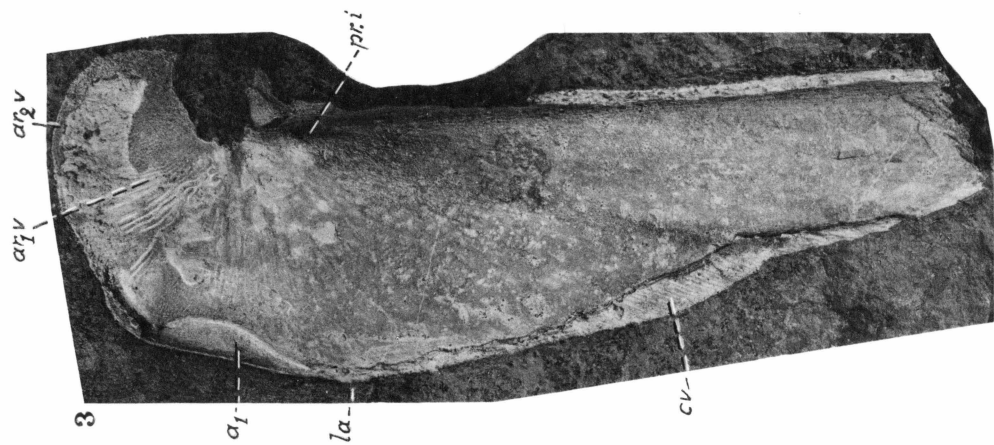
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Figs. 2, 3. Two right ventral central plates 1 preserved as impressions of their inner sides. Specimens Nos. 1022 and 1181 respectively. Nat. size.

Same locality and horizon etc. as the specimen in fig. 1.

Explanation of letters.

$a_1$ , area attached to the dorsal central plate 1;  $ar_1v$ , internal articular area;  $cv$ , area overlapping lateral marginal plate 2;  $la$ , lateral angle;  $pr. i$ , internal process, perhaps for the insertion of a muscle.



## Plate 66.

### *Bothriolepis groenlandica* Heintz.

Fig. 1. Plaster cast of the proximal part of a large left ventral central plate 1. External aspect. Specimen No. 1023. Nat. size.

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-horizon. Expedition 1934.

Figs. 2, 3. Two fairly small ventral central plates 1 (left and right), preserved as impressions of their internal sides. Specimens Nos. 1149 and 133 respectively. Nat. size.

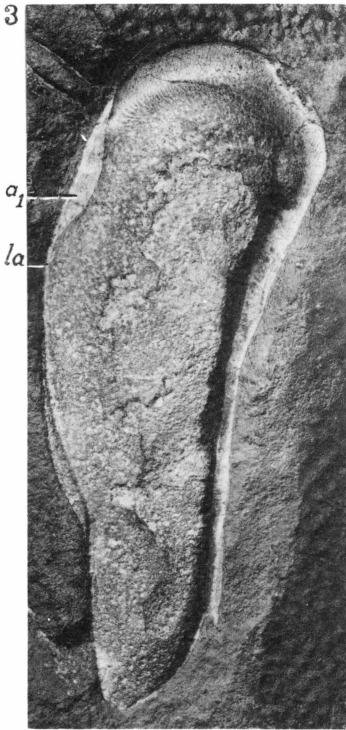
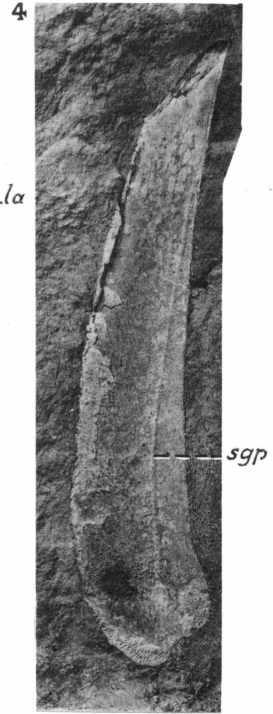
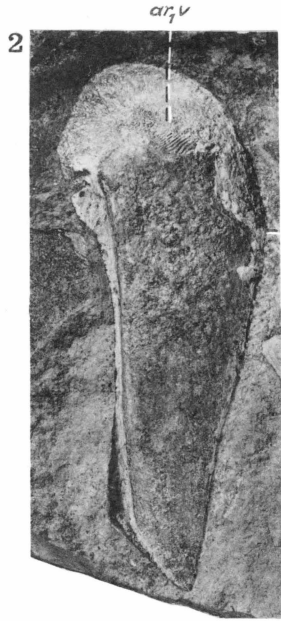
Same locality and horizon etc. as the specimen in fig. 1.

Figs. 4-6. Three ventral central plates 2. Figs. 4 and 6 impressions of the external side, fig. 5 impression of the internal side. Specimens Nos. 1075, 1150, 1080 respectively. Nat. size.

Same locality and horizon etc. as the specimen in fig. 1.

#### Explanation of letters.

$a_1$ , area attached to the dorsal central plate 1;  $ar_1v$ , internal articular area of ventral central plate 1;  $ar_3v$ , external articular area of ventral central plate 1;  $la$ , lateral angle;  $sgp$ , pectoral pit-line groove.



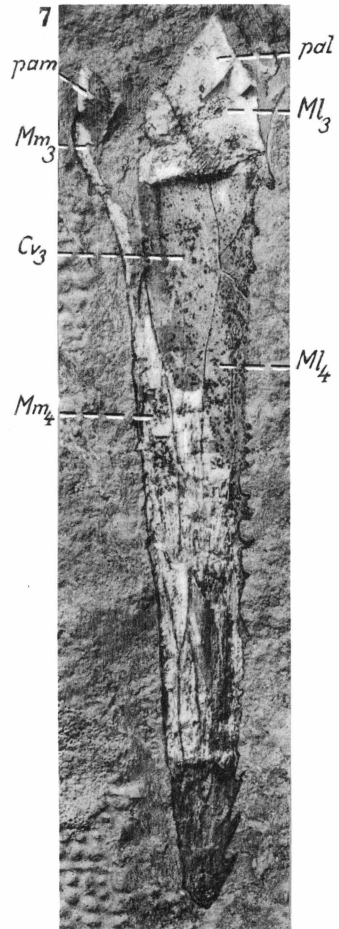
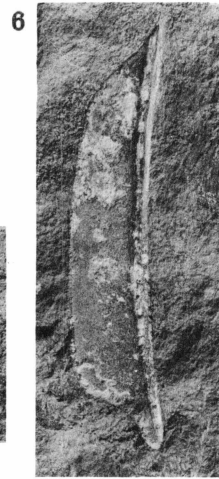
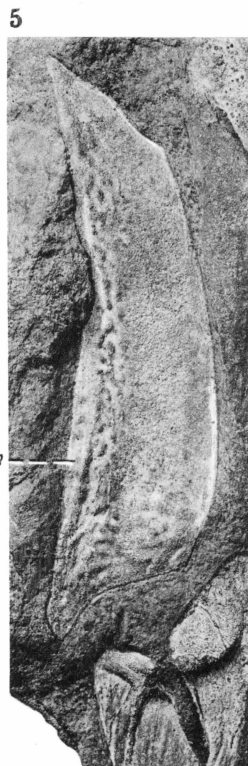
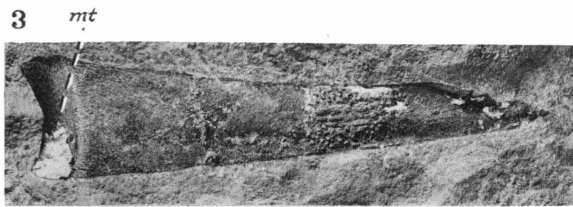
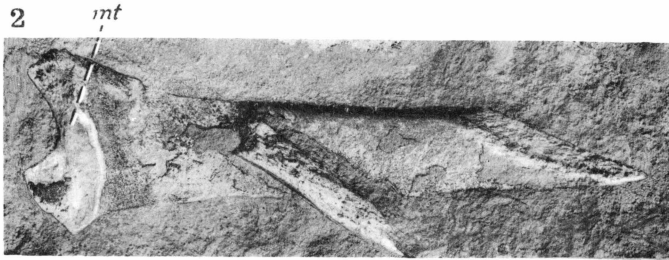
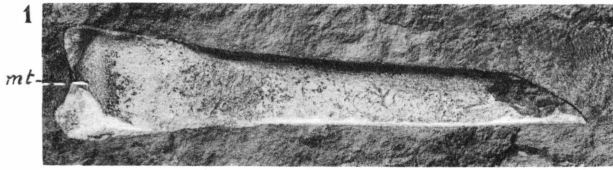
## Plate 67.

### *Bothriolepis groenlandica* Heintz.

- Figs. 1-3. Three left medial marginal plates 1, preserved mainly as impressions of their external sides. Specimens Nos. 1141, 1142 and 1155 respectively. Nat. size.  
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.
- Figs. 4, 5. Impressions of the external sides of two left medial marginal plates 2. Specimens Nos. 1024, 1025 respectively. Nat. size.  
Same locality and horizon etc. as the specimens in figs. 1-3.
- Fig. 6. Impression of the internal side of a left medial marginal plate 2. Specimen No. 1062. Nat. size.  
Same locality and horizon etc. as the specimens in figs. 1-3.
- Fig. 7. Distal segment of a fairly small right pectoral fin. Ventral wall. Specimen No. 1164.  $\times 2$ .  
Same locality and horizon etc. as the specimens in figs. 1-3.

### Explanation of letters.

*Cv*<sub>3</sub>, ventral central plate 3; *MI*<sub>3</sub>, *MI*<sub>4</sub>, lateral marginal plates 3, 4; *Mm*<sub>3</sub>, *Mm*<sub>4</sub>, medial marginal plates 3, 4; *cr. dm*, dorso-medial crest arisen by fusion of medial spines and passing over distally into more or less independent spines; *mt*, postarticular thickening; *pal*, lateral anconeal process; *pam*, medial anconeal process.



### Plate 68.

#### *Bothriolepis groenlandica* Heintz.

Figs. 1, 2. Distal segment of a fairly small left pectoral fin. In fig. 1 with a proximal part of its ventral wall, in fig. 2 this part removed. Specimen No. 1093.  $\times 2$ .

Gauss Peninsula. Parallel Valley, Mt. Sederholm. Loose W. of Profile Ravine, between that and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.

Figs. 3, 4. Somewhat detached distal segment of a fairly large pectoral fin. Dorsal aspect. In fig. 4 the dorsal wall removed. Specimen No. 1196. Nat. size.

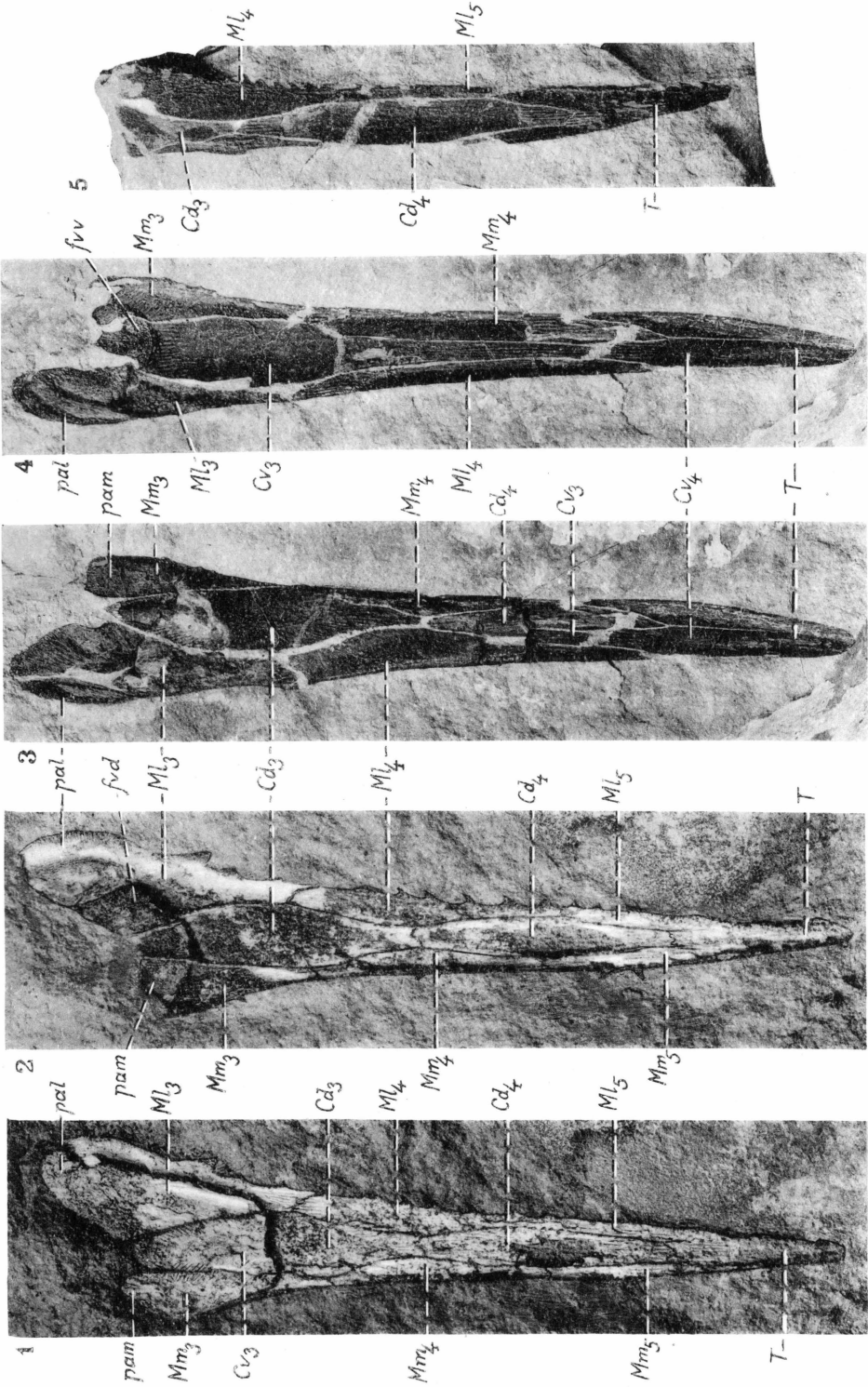
Gauss Peninsula. Parallel Valley, Mt. Sederholm. Between Profile Ravine and Crossopterygian Ravine. 480-550 m. *Phyllolepis*-series. Expedition 1934.

Fig. 5. Distal part of the dorsal wall of a distal segment of a pectoral fin (probably the same distal segment as in figs. 3 and 4). Specimen No. 1196c. Nat. size.

Same locality and horizon etc. as the distal segment in figs. 3 and 4.

#### Explanation of letters.

$Cd_3, Cd_4$ , dorsal central plates 3 and 4;  $Cv_3, Cv_4$ , ventral central plates 3 and 4;  $Ml_3-Ml_5$ , lateral marginal plates 3-5;  $Mm_3-Mm_5$ , medial marginal plates 3-5;  $T$ , terminal plate;  $fvd$ , dorsal articular fovea;  $fvv$ , ventral articular fovea;  $pal$ , lateral anconeal process;  $pam$ , medial anconeal process.



### Plate 69.

#### *Bothriolepis groenlandica* Heintz.

Figs. 1, 2. Deficient distal segment of a fairly large left pectoral fin. Impression of the dorsal side. In fig. 1 a proximal part removed. Specimen No. 1168. Nat. size.

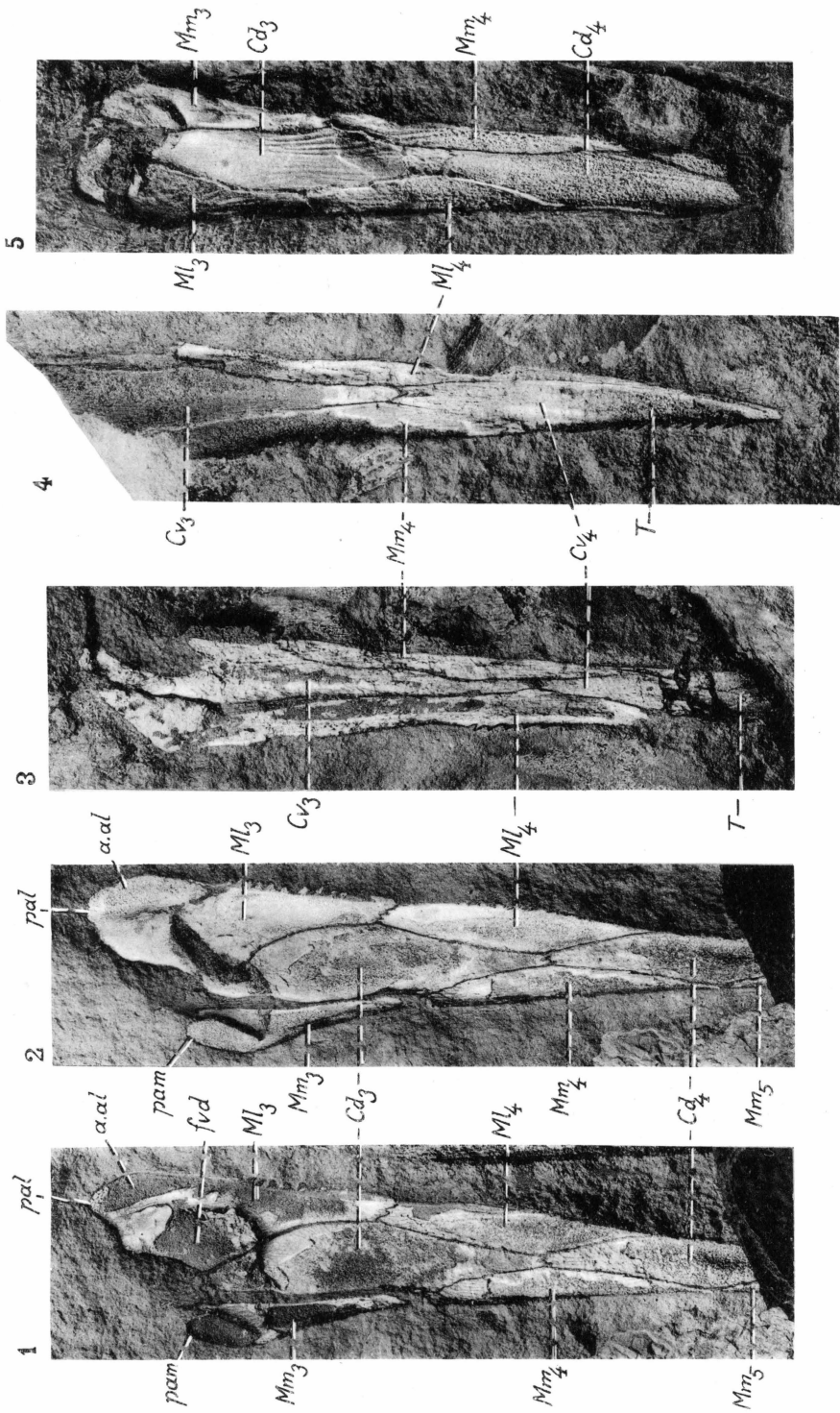
Gauss Peninsula. Parallel Valley, Mt. Sederholm, Loose E. of Profile Ravine, between that and profile I. About 526 m. *Phyllolepis*-series. Expedition 1934.

Figs. 3, 4. Fragments of the ventral wall of two distal segments. Specimens Nos. 1144 and 1143 respectively. Nat. size.

Fig. 5. Parts of the dorsal wall of a distal segment of a right pectoral fin. Impression showing traces of ornament. Specimen No. 1029. Nat. size.

#### Explanation of letters.

$Cd_3, Cd_4$ , dorsal central plates 3 and 4;  $Cv_3, Cv_4$ , ventral central plates 3 and 4;  $Ml_3, Ml_4$ , lateral marginal plates 3 and 4;  $Mm_3-Mm_5$ , medial marginal plates 3-5;  $T$ , terminal plate;  $a. al$ , marginal articular area of the lateral anconeal process;  $vd$ , dorsal articular fovea;  $pal$ , lateral anconeal process;  $pam$ , medial anconeal process.



### Plate 70.

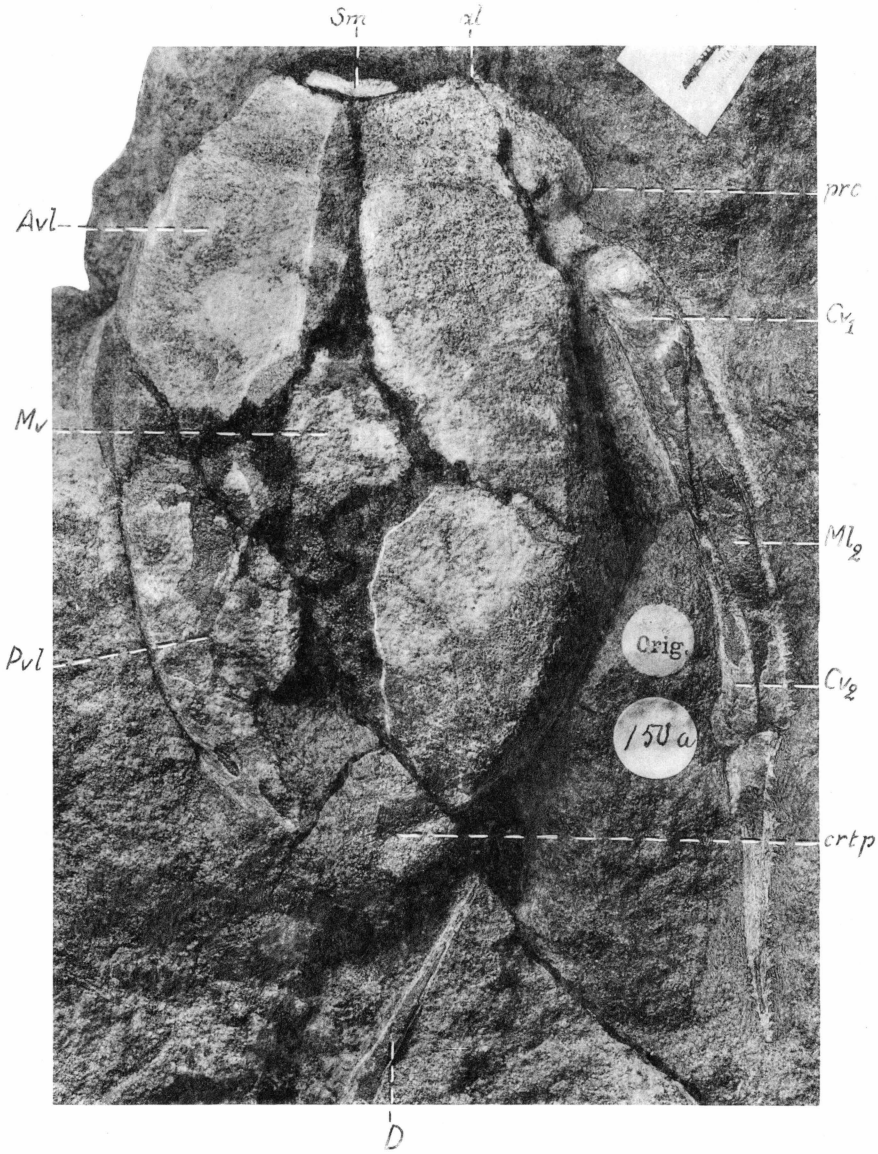
*Bothriolepis jarviki* n.sp.

Imperfect ventral wall of a trunk-armour with the left pectoral fin. Ventral aspect. Specimen No. 150. (Reproduced by Stensiö in 1931 in pl. 1, fig. 1 and at that occasion referred to *B. groenlandica*.) Approximately  $\times \frac{5}{4}$ .

South coast of W. part of Gauss Peninsula; "the *Bothriolepis*-Cleft" (Säve-Söderbergh 1934). Expedition 1930.

#### Explanation of letters.

*Avl*, anterior ventro-lateral plate; *Cv<sub>1</sub>*, *Cv<sub>2</sub>*, ventral central plates 1 and 2; *D*, part of distal segment of right pectoral fin; *Ml<sub>2</sub>*, lateral marginal plate 2; *Mv*, median ventral plate; *Pvl*, posterior ventro-lateral plate; *Sm*, semilunar plate; *al*, antero-lateral corner of ventral lamina of anterior ventro-lateral plate; *crtp*, crista transversalis interna posterior (impression); *prc*, prepectoral corner.



## Plate 71.

*Bothriolepis jarviki* n. sp.

Fig. 1. Large anterior median dorsal plate in dorsal aspect. The bone-tissue weathered away in places so that the lower side of the plate is partly shown as an impression in the rock. Specimen No. 641. Nat. size.

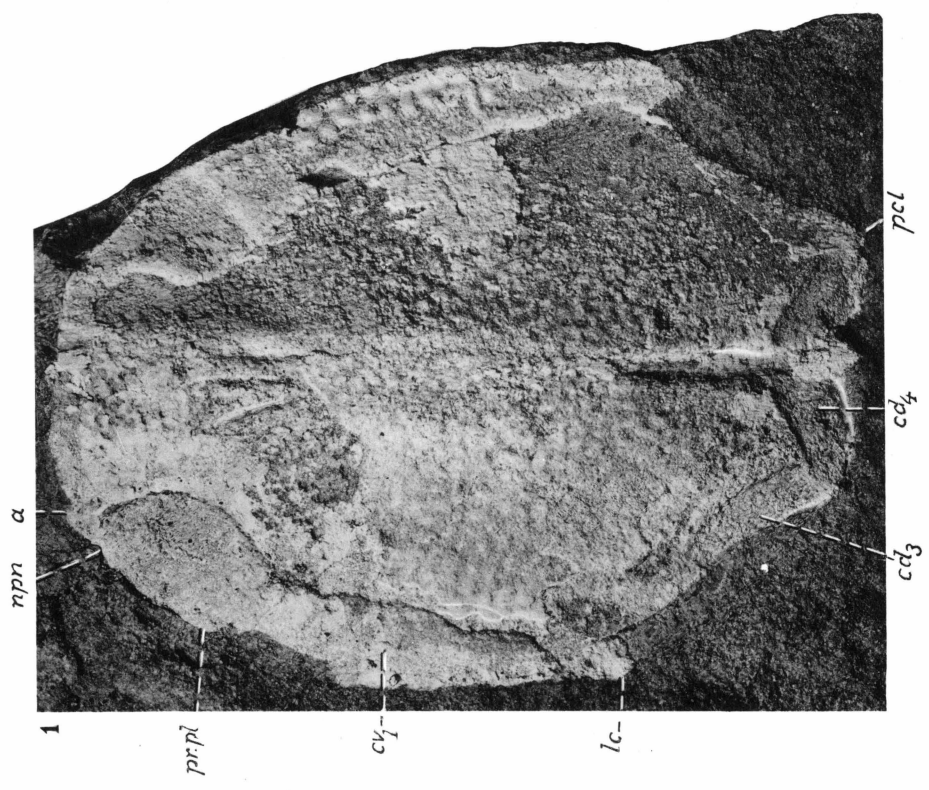
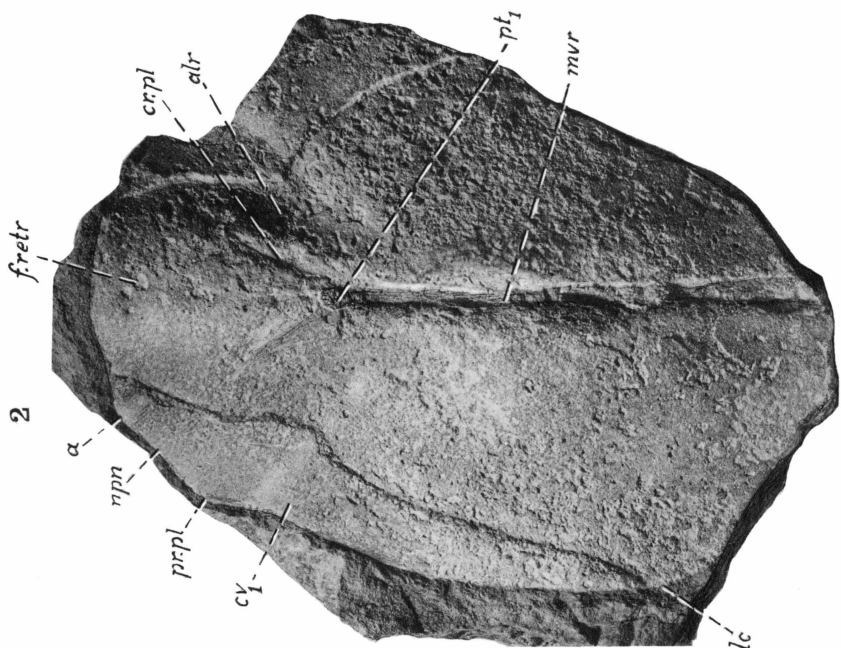
Gauss Peninsula. South coast. Profile 4 km. W. of the north of Parallel Valley. 887 m. Expedition 1934.

Fig. 2. Deficient impression of the ventral (internal) side of a large anterior median dorsal plate. Specimen No. 1207. Nat. size.

Ymer Island. Dusén Fjord, N. side. Profile B. 860 m. E. Nielsen 1936.

### Explanation of letters.

*a*, antero-lateral corner; *alr*, postlevator thickening (impression); *cr. pl*, postlevator crest (impression); *cd<sub>3</sub>*, area overlapped by mixilateral plate; *cd<sub>3</sub>*, area overlapped by posterior median dorsal plate; *cv<sub>1</sub>*, area overlapping anterior dorso-lateral plate (impression); *f. retr*, levator fossa (impression); *lc*, lateral corner; *mvr*, median ventral ridge; *npn*, post-nuchal notch; *pcl*, postero-lateral corner; *pr. pl*, external postlevator process; *pt<sub>1</sub>*, anterior ventral pit.



## Plate 72.

### *Bothriolepis jarviki* n.sp.

Fig. 1. Almost complete anterior median dorsal plate in ventral aspect. Specimen No. 1201. Holotype. Nat. size.

Ymer Island. N. coast. Mt. *Bothriolepis*, between profiles A and B. Expedition 1934.

Fig. 2. Detached dorsal central plate 1. Dorsal aspect. Specimen No. 1203. Nat. size.

Ymer Island. Dusén Fjord, N. side. Profile A, 435 m. E. Nielsen 1936.

Fig. 3. Imperfect anterior median dorsal plate in ventral aspect. Specimen No. 1202. Nat. size.

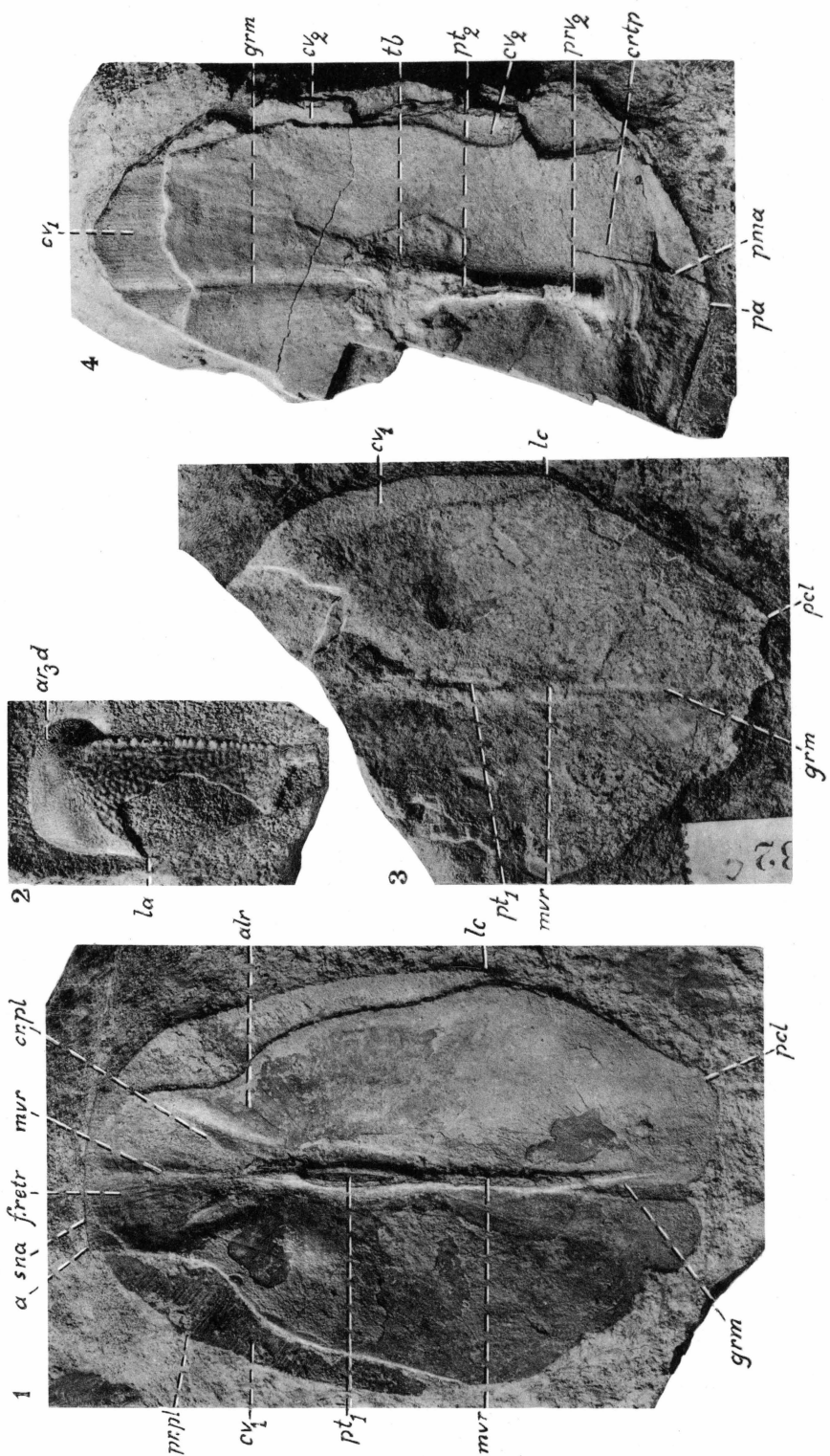
Ymer Island. Dusén Fjord, N. side. Mt. Blask. Loose. Expedition 1932.

Fig. 4. Fragmentary posterior median dorsal plate in ventral aspect. Specimen No. 1206. Nat. size.

Ymer Island. Dusén Fjord, N. side. Profile B, 860 m. E. Nielsen 1936.

### Explanation of letters.

*a*, antero-lateral corner; *alr*, postlevator thickening; *ar<sub>3</sub>d*, external articular area of dorsal central plate 1; *cr. pl*, postlevator crest; *crlp*, crista transversalis interna posterior, median dorsal part; *cv<sub>1</sub>*, in figs. 1, 3 = area overlapping anterior dorso-lateral plate, in fig. 4 = area overlapping anterior median dorsal plate; *cv<sub>2</sub>*, area overlapping mixilateral plate; *f. retr*, levator fossa; *grm*, ventral median groove; *la*, lateral angle of dorsal central plate 1; *lc*, lateral corner of anterior median dorsal plate; *mvr*, ventral median ridge; *pa*, posterior angle of posterior median dorsal plate; *pel*, postero-lateral corner of anterior median dorsal plate; *pma*, posterior marginal area; *pr. pl*, external postlevator process; *prv<sub>2</sub>*, posterior ventral process (base only); *pt<sub>1</sub>*, *pt<sub>2</sub>*, anterior and posterior ventral pits respectively; *sna*, supranuchal area; *lb*, ventral tuberosity.



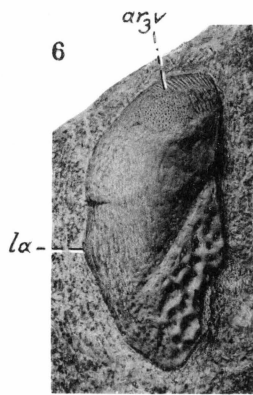
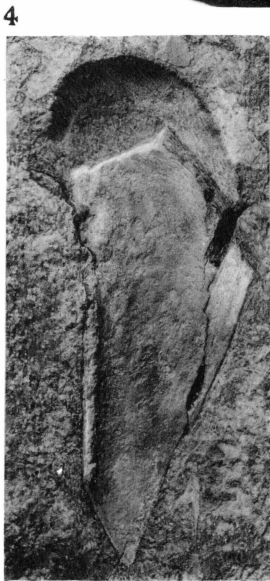
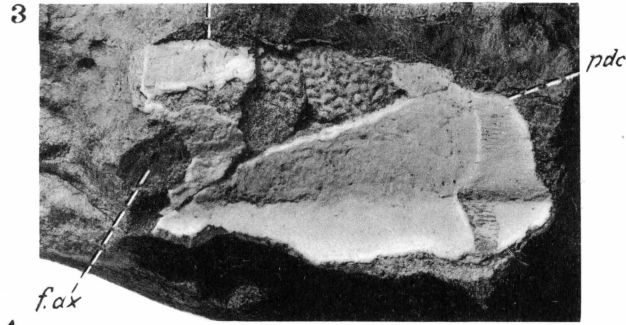
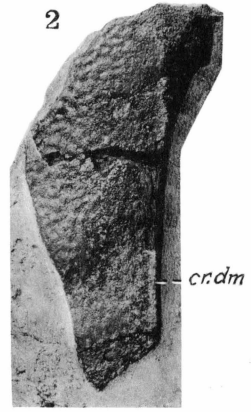
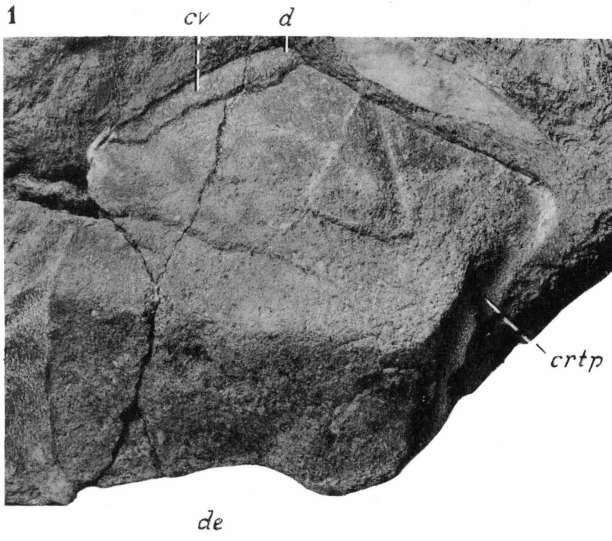
### Plate 73.

#### *Bothriolepis jarviki* n.sp.

- Fig. 1. Imperfect left mixilateral plate. Impression of the internal side. Specimen No. 1221. Nat. size.  
Ymer Island. Dusén Fjord, N. side. Profile B, 977 m. E. Nielsen 1936.
- Fig. 2. Imperfect dorsal central plate 1 in dorsal aspect. Specimen No. 1204. Nat. size.  
Ymer Island Dusén Fjord, N. side. Profile A, 435 m. E. Nielsen 1936.
- Fig. 3. Imperfect right anterior ventro-lateral plate in medial (internal) aspect. Specimen No. 1220. Nat. size.  
Same locality and horizon etc. as the Specimen in fig. 1.
- Fig. 4. Left dorsal central plate 1. Ventral (internal) aspect. Specimen No. 1209. Nat. size.  
Same locality and horizon etc. as the specimen in fig. 2.
- Fig. 5. Almost complete left ventral central plate 1 in ventral (external) aspect. Specimen No. 1222. Nat. size.  
Ymer Island. Dusén Fjord, N. side. Profile B, 860 m. E. Nielsen 1936.
- Fig. 6. Small ventral central plate 1, probably abnormal in shape. Ventral (external) aspect. Specimen No. 1219.  $\times 2$ .  
Same locality and horizon etc. as the specimen in figs. 2 and 4.

#### Explanation of letters.

*ar<sub>3v</sub>*, external articular area of ventral central plate 1; *cr. dm*, dorso-medial crest formed by fusion of medial spines; *crtp*, crista transversalis interna posterior (impression); *cv*, area overlapping anterior median dorsal plate (impression); *d*, dorsal corner or angle of mixilateral plate; *de*, dorsal corner of exposed ornamented area of lateral lamina of anterior ventro-lateral plate; *f. ax*, foramen axillare; *la*, lateral angle of ventral central plate 1; *pdc*, postero-dorsal corner of lateral lamina of anterior ventro-lateral plate.



### Plate 74.

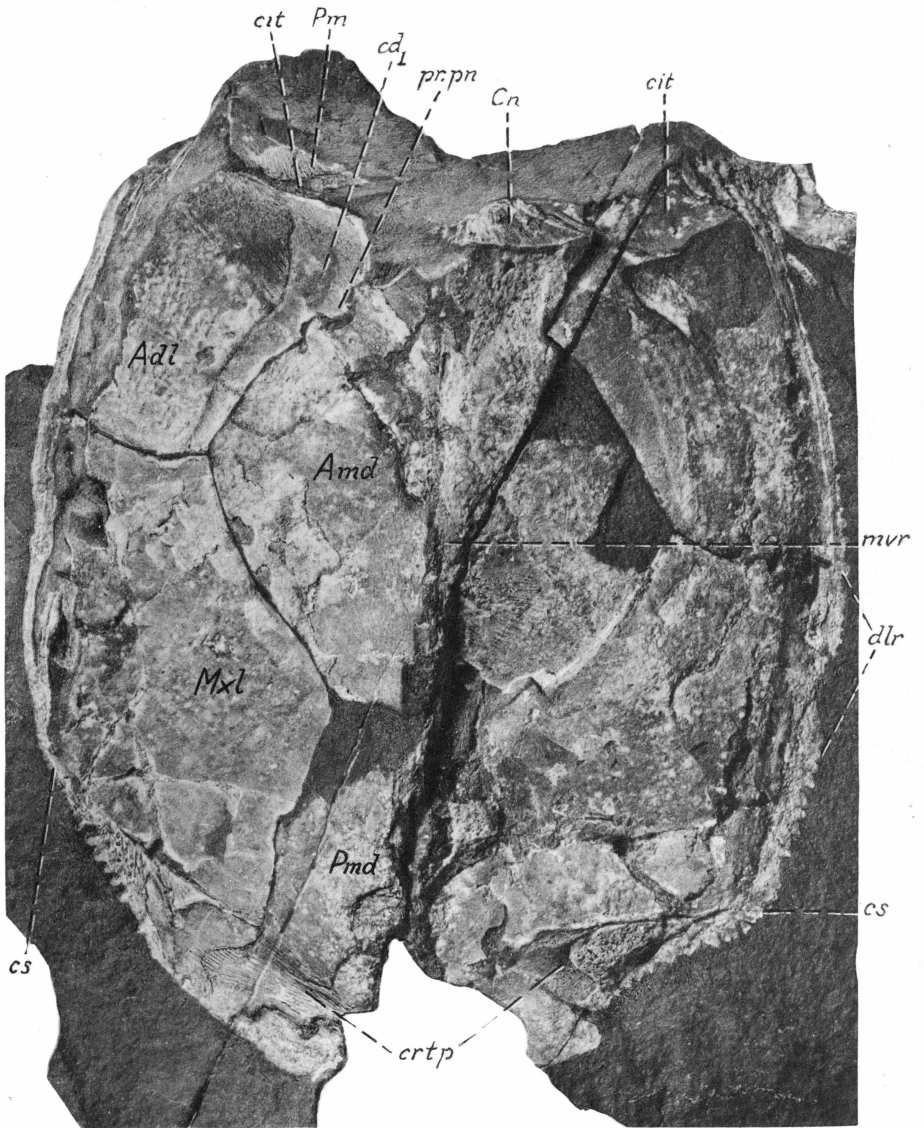
*Bothriolepis nielseni* n.sp.

Imperfect trunk-armour, dorso-ventrally compressed and partly crushed. Dorsal aspect. The bones of the dorsal wall a little loosened from each other and represented chiefly by impressions of their lower (internal) sides. Specimen No. 617. The specimen reproduced in ventral aspect in pl. 75.  $\times \frac{3}{2}$ .

Gauss Peninsula. Mt. Wiman, the lower terraces at the S. side of the mountain. Loose. Bottom of the *Remigolepis*-series. Expedition 1932.

#### Explanation of letters.

*Adl*, anterior dorso-lateral plate; *Amd*, anterior median dorsal plate; *Cn*, centro-nuchal plate (impression of the hindmost part); *Mxl*, mixilateral plate; *Pmd*, posterior median dorsal plate; *cd<sub>1</sub>*, area on anterior dorso-lateral plate overlapped by *Amd*-plate; *cit*, crista transversalis interna anterior, vertical division (impression); *crtp*, crista transversalis interna posterior (obscure impression); *cs*, postero-lateral corner of the dorsal wall of the trunk-armour; *dlr*, dorso-lateral ridge; *mvr*, ventral median ridge (impression); *pr. pn*, internal postlevator process of *Adl*-plate.



### Plate 75.

*Bothriolepis nielseni* n.sp.

Ventral wall of the trunk-armour reproduced in pl. 74. The right pectoral fin also shown. The bones of the ventral wall of the trunk-armour preserved mainly as impressions of their internal (dorsal) sides. The proximal segment of the pectoral fin represented by its dorsal wall, which, however, is fairly deficient. Specimen No. 617.  $\times \frac{3}{2}$ .

Locality and horizon etc. see pl. 74.

#### Explanation of letters.

*Avl*, anterior ventro-lateral plate (imperfect); *Cd<sub>1</sub>*, *Cd<sub>2</sub>*, dorsal central plates 1 and 2; *Ml<sub>2</sub>*, lateral marginal plate 2; *Mm<sub>2</sub>*, medial marginal plate 2; *Pvl*, posterior ventro-lateral plate; *crtp*, crista transversalis interna posterior (impression); *cv*, area overlapping posterior ventro-lateral plate; *cv. m*, area overlapping median ventral plate; *cv<sub>r</sub>*, area overlapping right posterior ventro-lateral plate; *dc*, dorsal corner of posterior ventro-lateral plate.

