



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

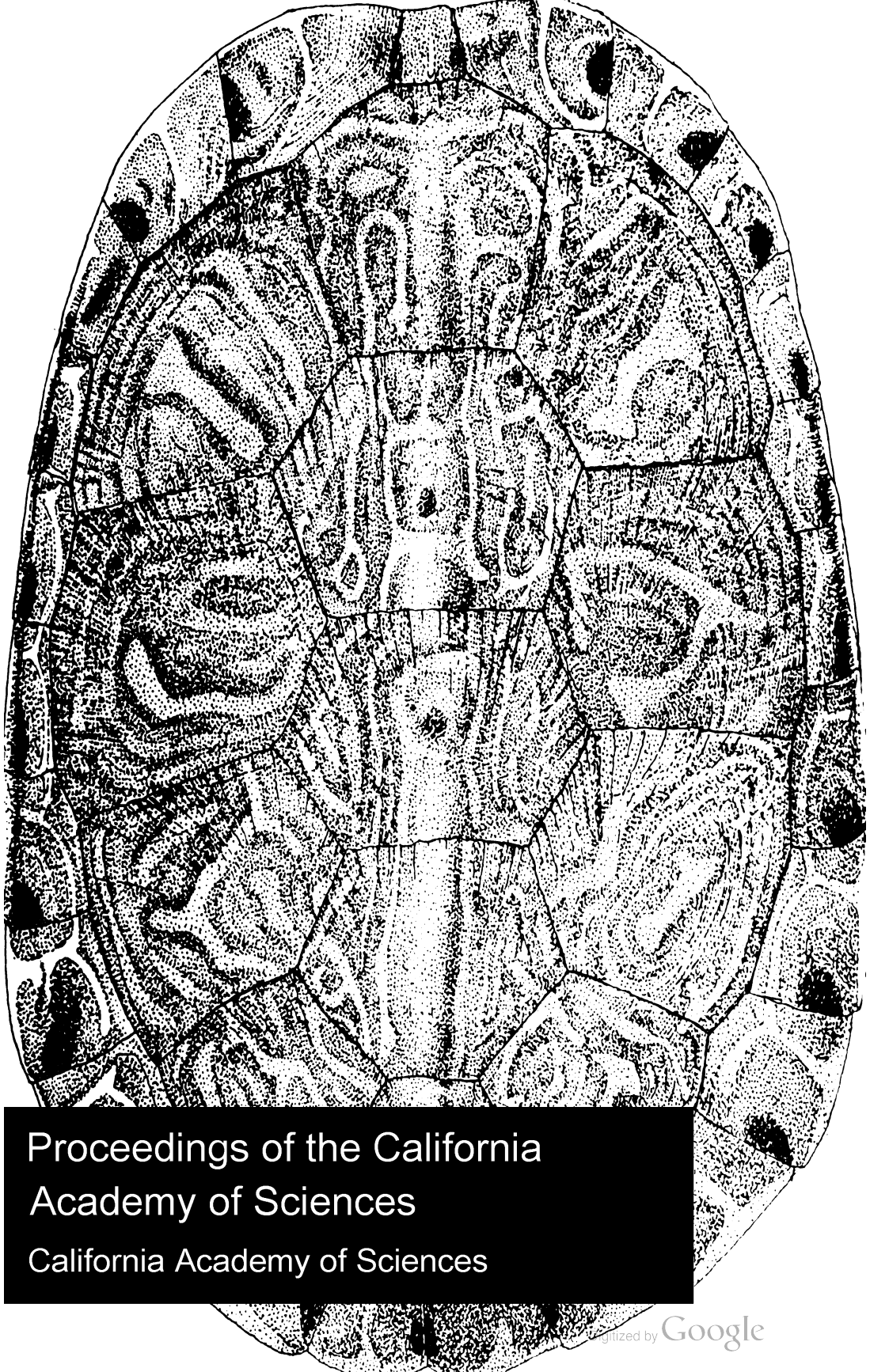
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



Proceedings of the California
Academy of Sciences
California Academy of Sciences

CAL
1748

HARVARD UNIVERSITY



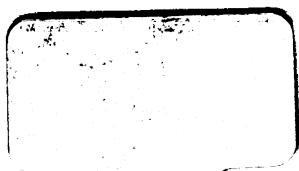
LIBRARY

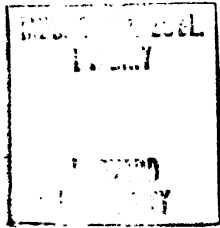
OF THE

Museum of Comparative Zoölogy

March 24, 1897

v





DEC 28 1895

2485

3205

PROCEEDINGS
OF THE
CALIFORNIA
ACADEMY OF SCIENCES.

SECOND SERIES.

VOLUME V,

PART I.

SAN FRANCISCO
CALIFORNIA ACADEMY OF SCIENCES
1895.

Issued November 18, 1895.

CONTENTS:

	PAGE
On the Various Stages of Development of Spermatobium, with Notes on other Parasitic Sporozoa. Gustav Eisen.....	1
Catalogue of Marine Shells, collected chiefly on the Eastern Shore of Lower California. J. G. Cooper.....	34
Notes on a Specimen of Alepisaurus æsculapius Bean. Flora Hartley.	49
Description of a New Jack-Rabbit from San Pedro Martir Mountain, Lower California. John M. Stowell.....	51
A Supplement to the Bibliography of the Palæozoic Crustacea. Anthony W. Vogdes.	53
A Review of the Herpetology of Lower California. Part I—Reptiles. John Van Denburgh.	77
On Land and Fresh Water Shells of Lower California. No. 5. J. G. Cooper.	163
On West Mexican Land and Fresh Water Mollusca. J. G. Cooper....	166
On Heteromorphic Organs of Sequoia sempervirens. Alice Eastwood	170
California Water Birds. No. 1. Leverett M. Loomis.....	177
Coleoptera of Baja California. Supplement 1. George H. Horn.....	225
Third Report on some Mexican Hymenoptera. William J. Fox.....	260
The Neocene Stratigraphy of the Santa Cruz Mountains of California. George H. Ashley.	273
Changes in Fauna and Flora of California.—On the Power of Adaptation in Insects. H. H. Behr.....	368
The Fishes of Sinaloa. David Starr Jordan.....	377
Some Mexican Neuroptera. Nathan Banks.....	515
The Species of the Genus Xantusia. John Van Denburgh.....	523
A List of Lichens collected by Mr. Robert Reuleaux in the Western Parts of North America. Dr. Stizenberger.....	535
Some Parasitic Hymenoptera from Baja California and Tepic, Mexico. William H. Ashmead.	539
A Review of the Herpetology of Lower California. Part II—Batrachians. John Van Denburgh.....	556
The California Phryganidian. . Vernon L. Kellogg and F. J. Jack....	562
Description of a New Species of Gobiesox from Monterey Bay, California. Seth Eugene Meek and Charles J. Pierson.....	571
On the Cranial Characters of the Genus Sebastodes. Frank Cramer..	573
Contributions to Western Botany. No. VII. Marcus E. Jones.....	611
Explorations in the Cape Region of Baja California. Gustav Eisen..	733
Notes on the Habits and Distribution of Autodax Iëcanus. John Van Denburgh.	776
Description of a New Species of Ranzania from the Hawaiian Islands. Oliver P. Jenkins.	779

3205

PROCEEDINGS
OF THE
APR 16 1896
CALIFORNIA
ACADEMY OF SCIENCES.

SECOND SERIES.

VOLUME V,

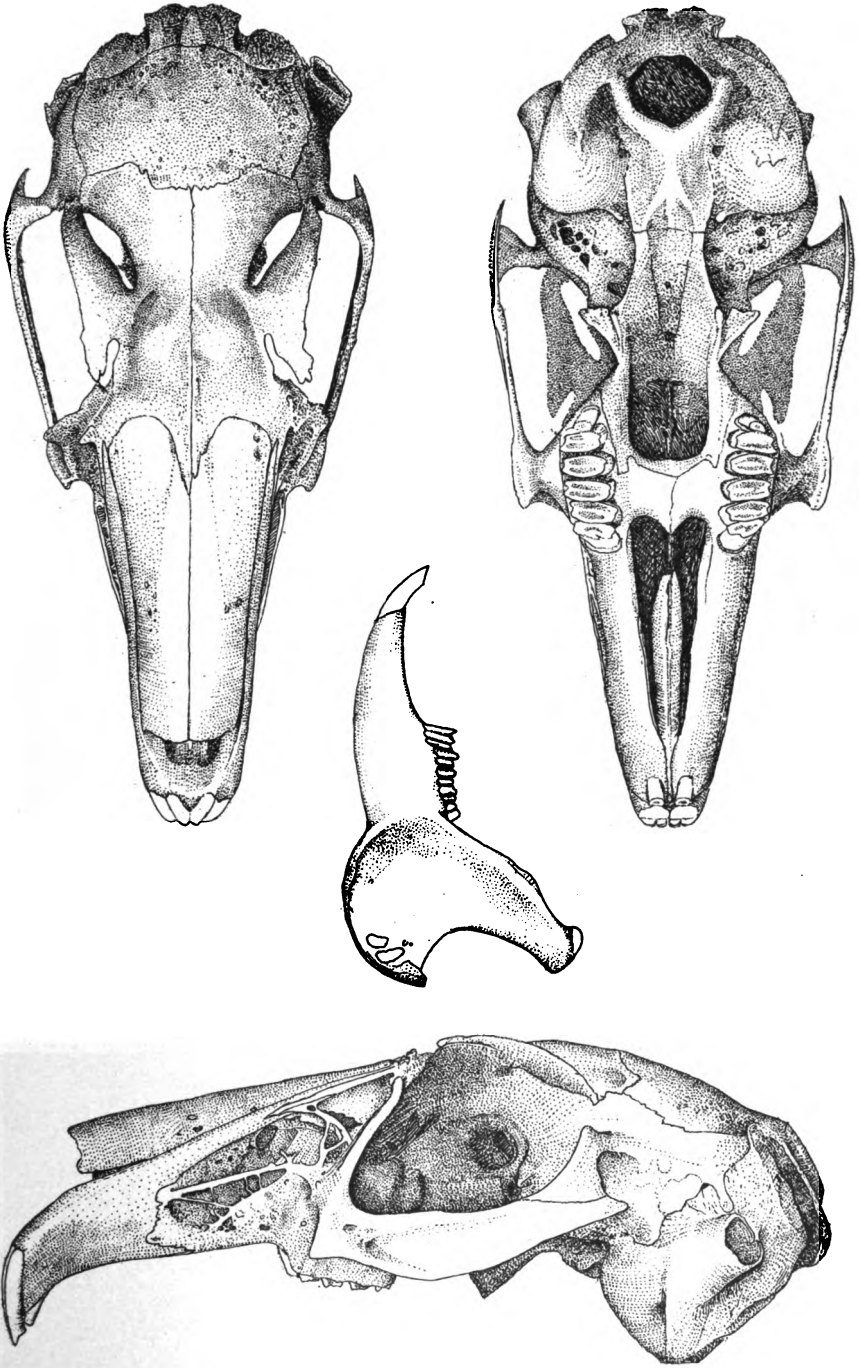
PART 2.

CONTENTS:

	PAGE.
The Fishes of Puget Sound. David Starr Jordan and Edward Chapin Starks.	785
Description of a New Rattlesnake (<i>Crotalus pricei</i>) from Arizona. John Van Denburgh.	856
Mexican Formicidæ. Theo. Pergande	858
Biological Studies on Figs, Caprifigs and Caprification. Gustav Eisen.	897
Additional Notes on the Herpetology of Lower California. John Van Denburgh.	1004
Proceedings.	1009
Index	1027

SAN FRANCISCO:
CALIFORNIA ACADEMY OF SCIENCES.
1896.

Issued January 18, 1896.

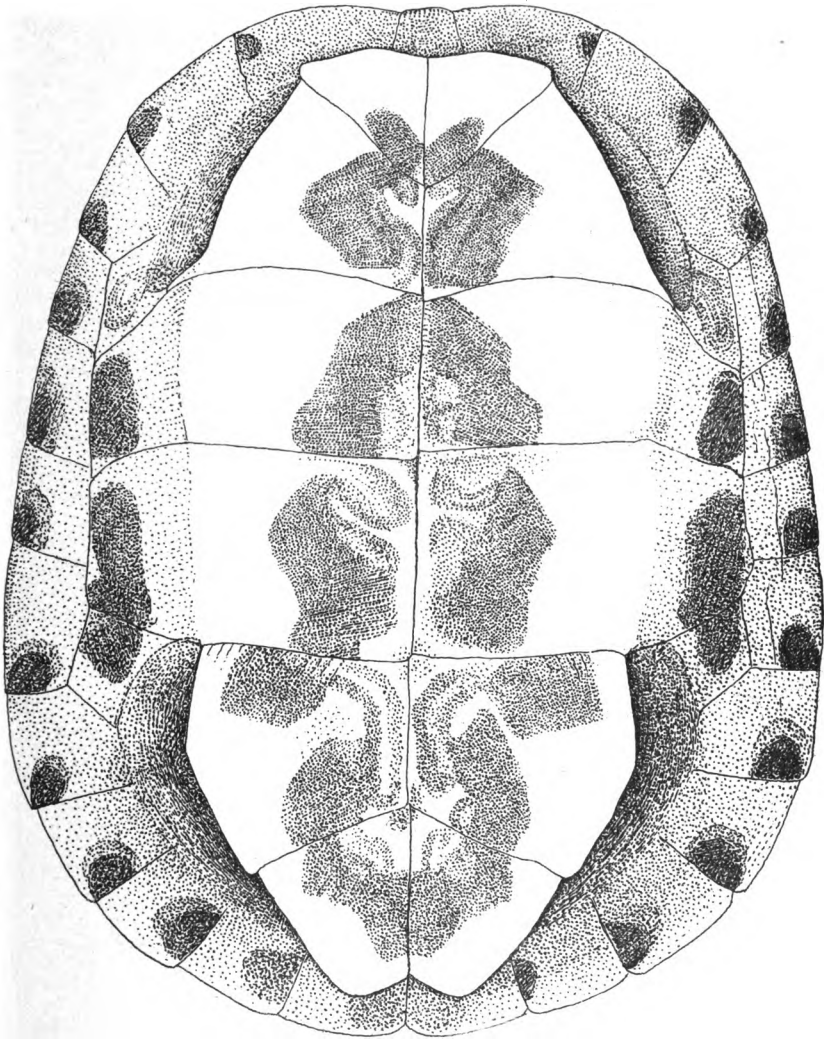


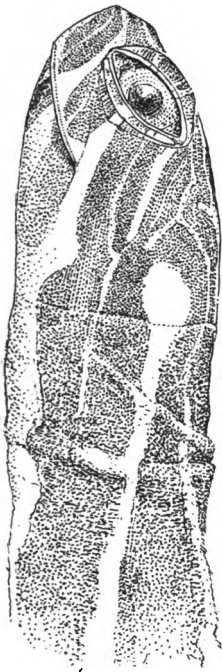
LEPUS MARTIRENSIS. New Species.

Co-type No. 750, Museum L. S. Jr. Univ.

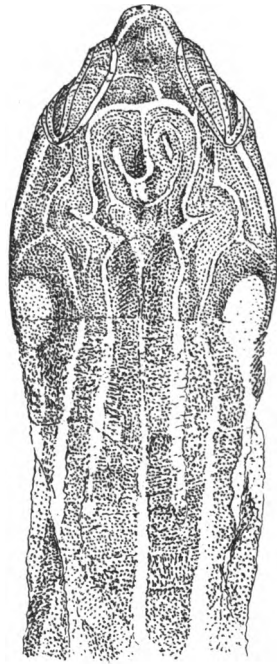
Lower Jaw, \times Natural Size, other figures slightly enlarged.







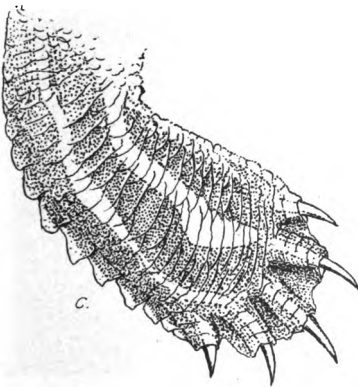
A.



B.



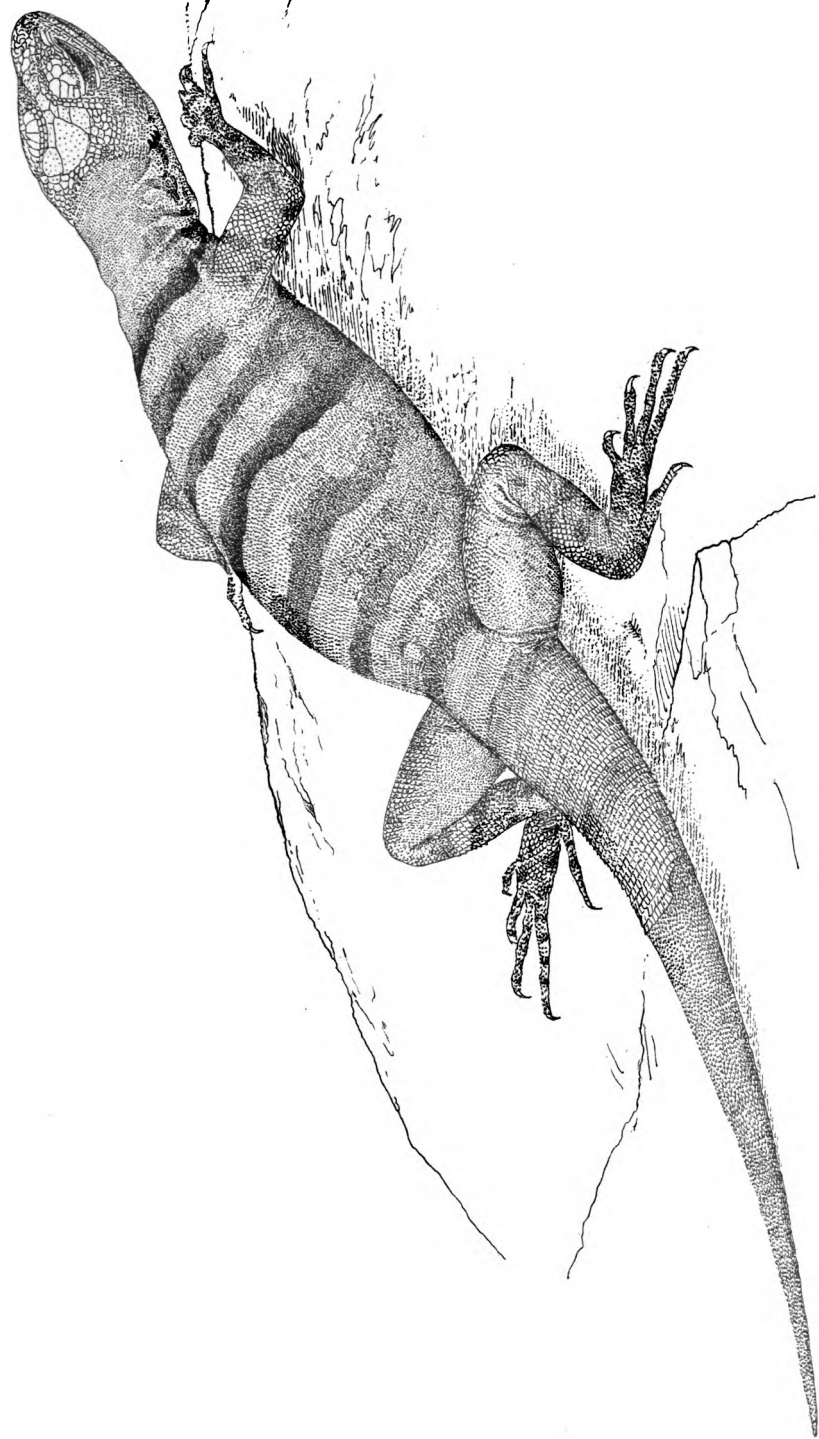
E.

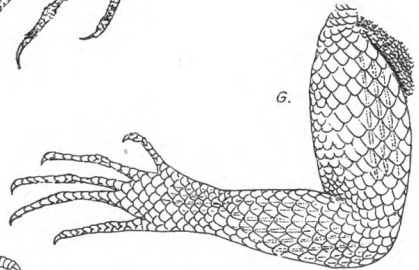
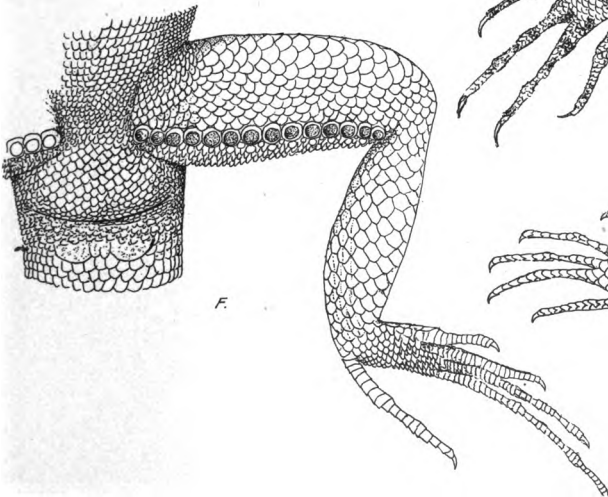
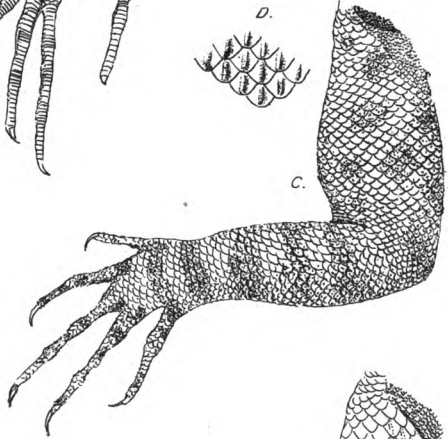
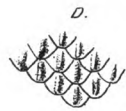
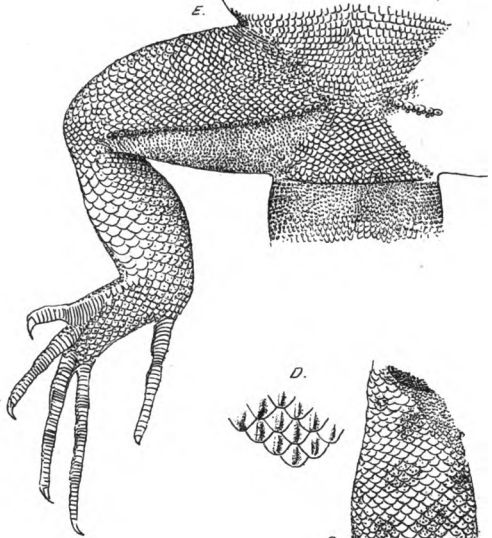
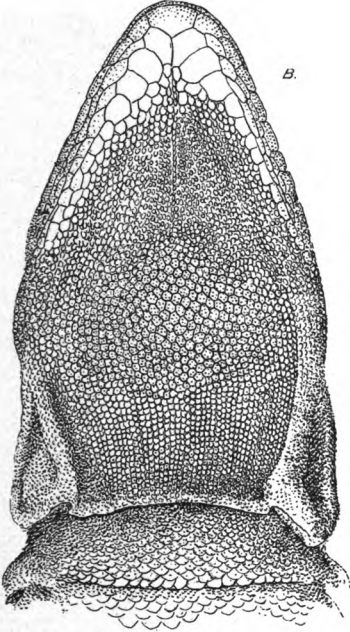
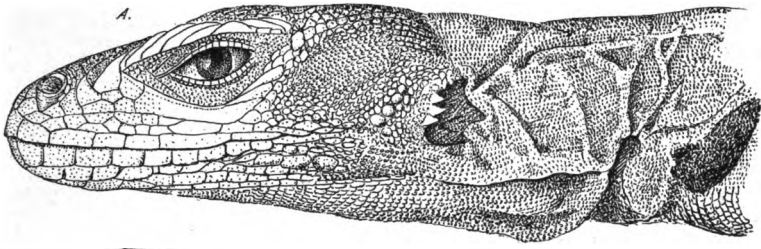


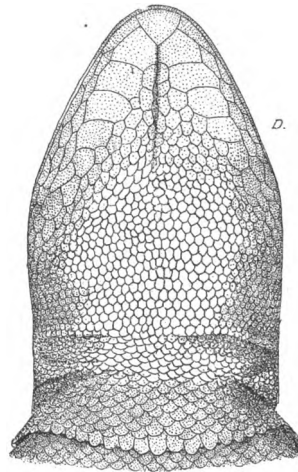
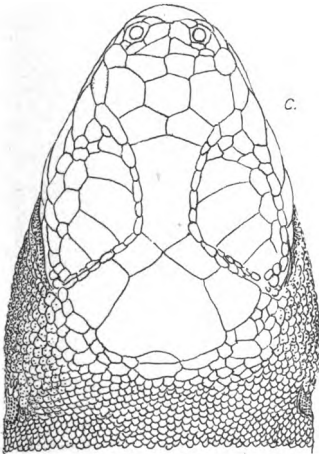
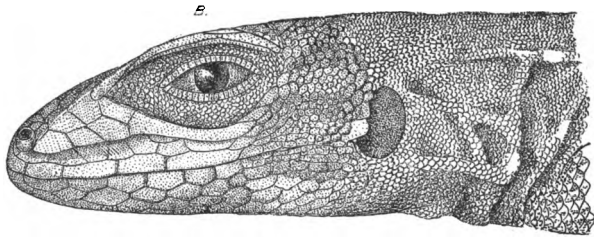
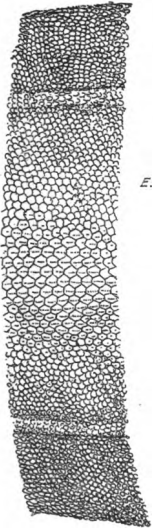
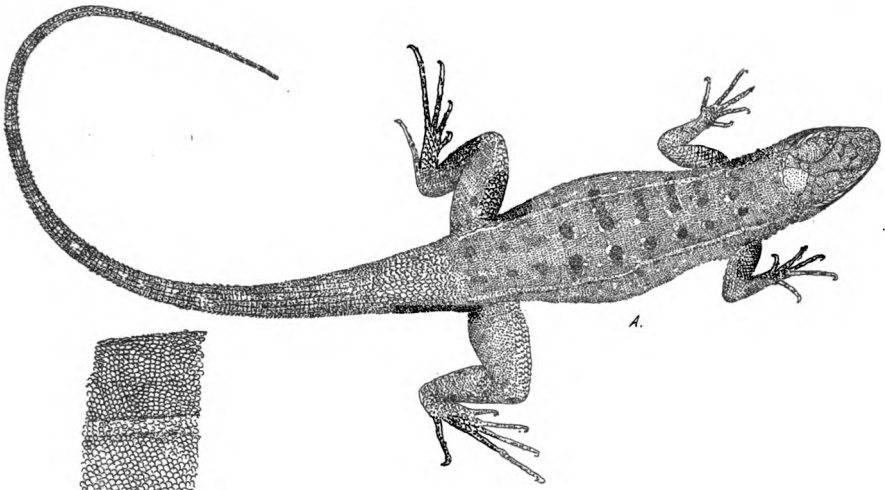
C.

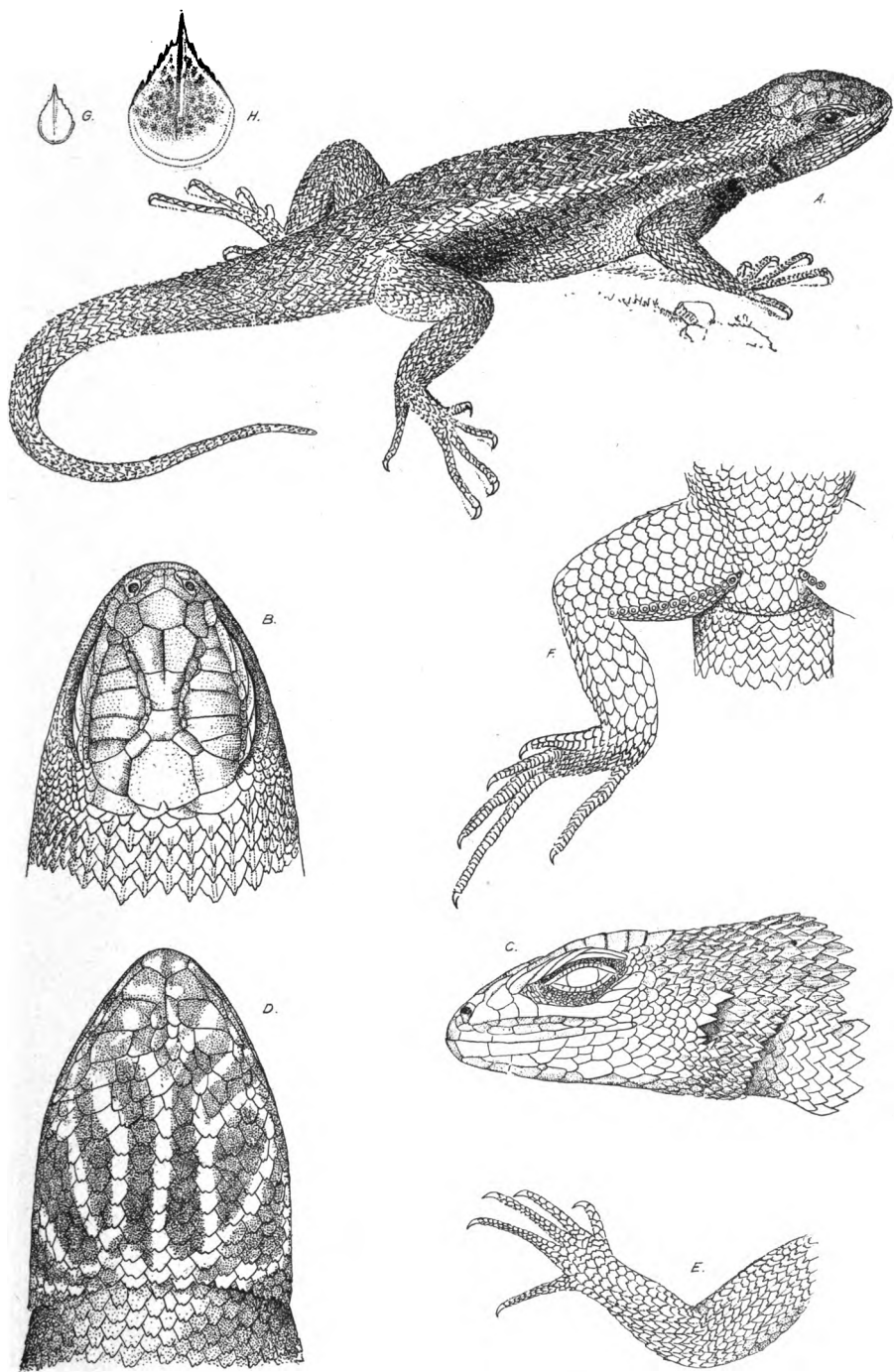


D.



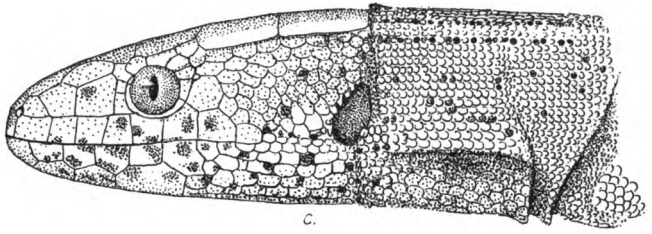




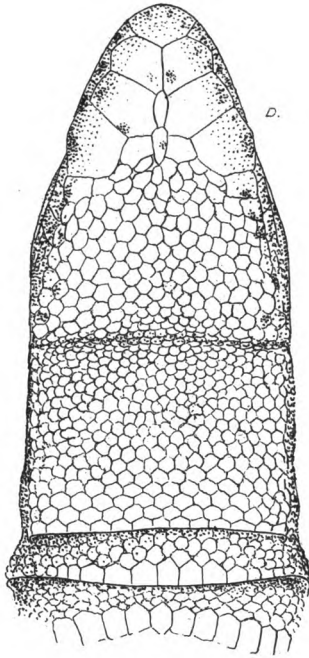




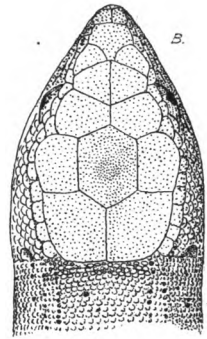
A.



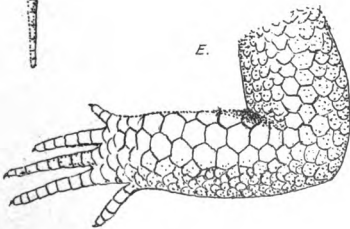
C.



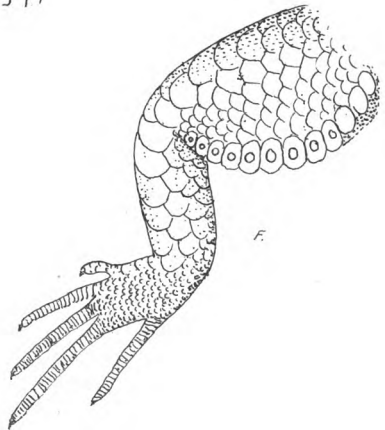
D.



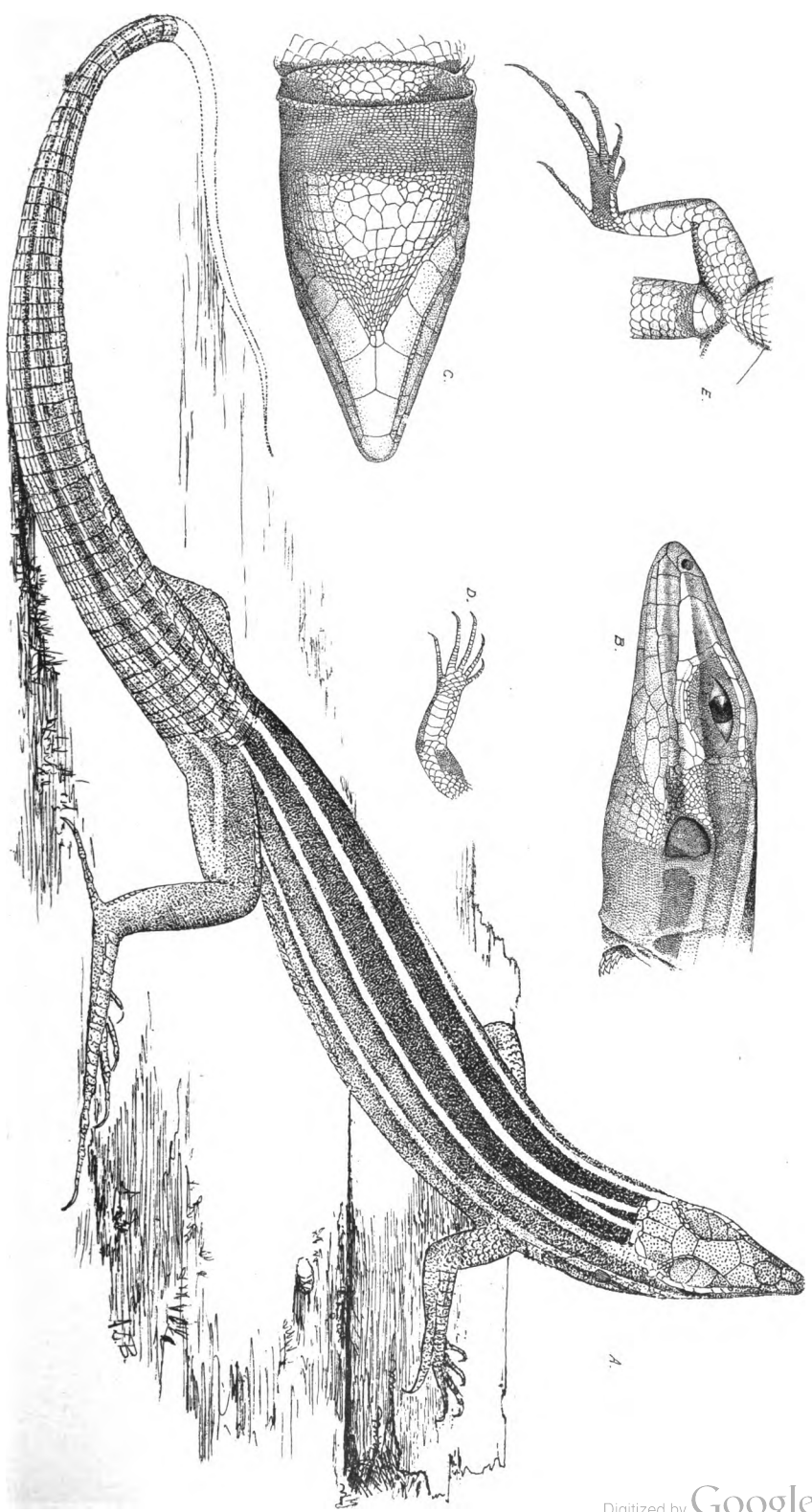
B.

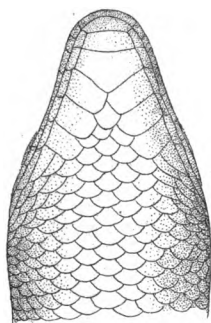
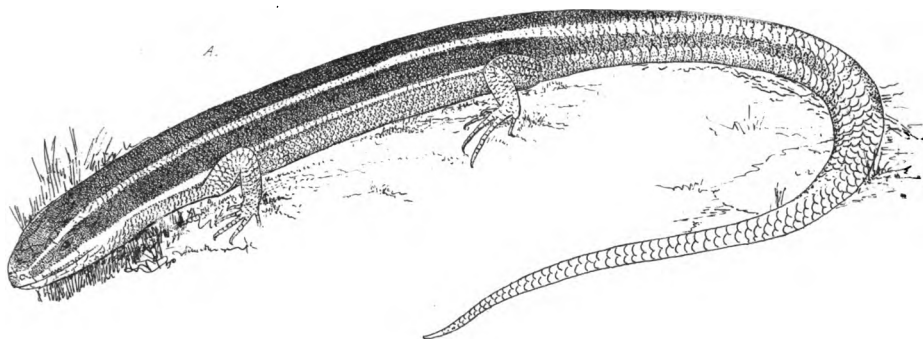


E.

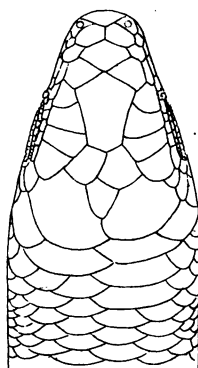


F.

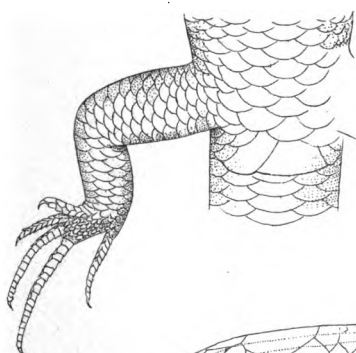




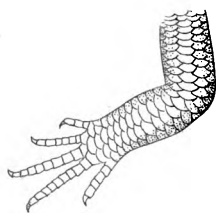
D.



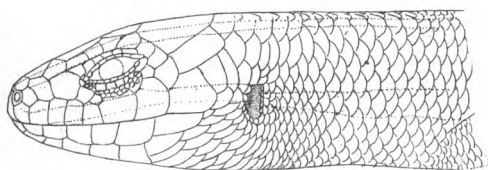
B.



E.



F.



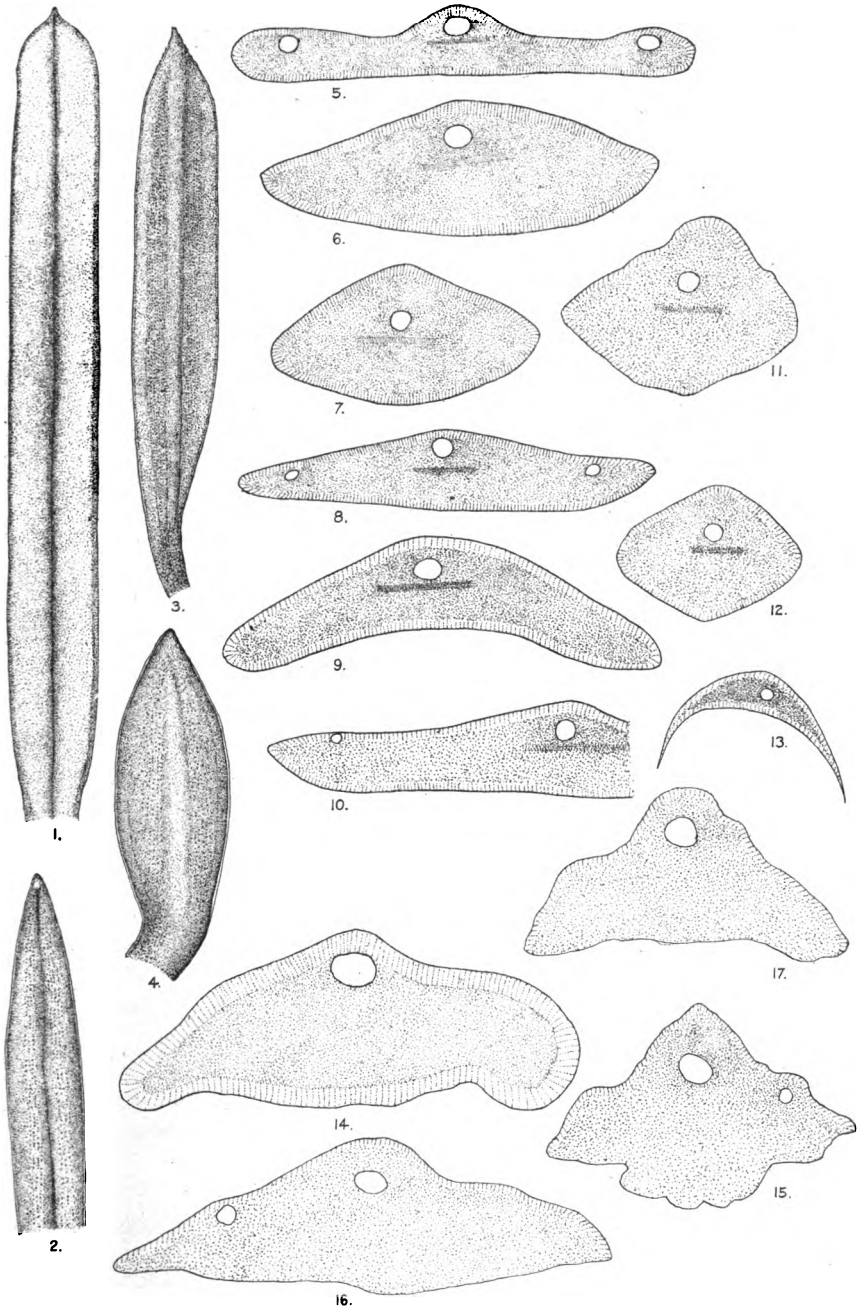
C.



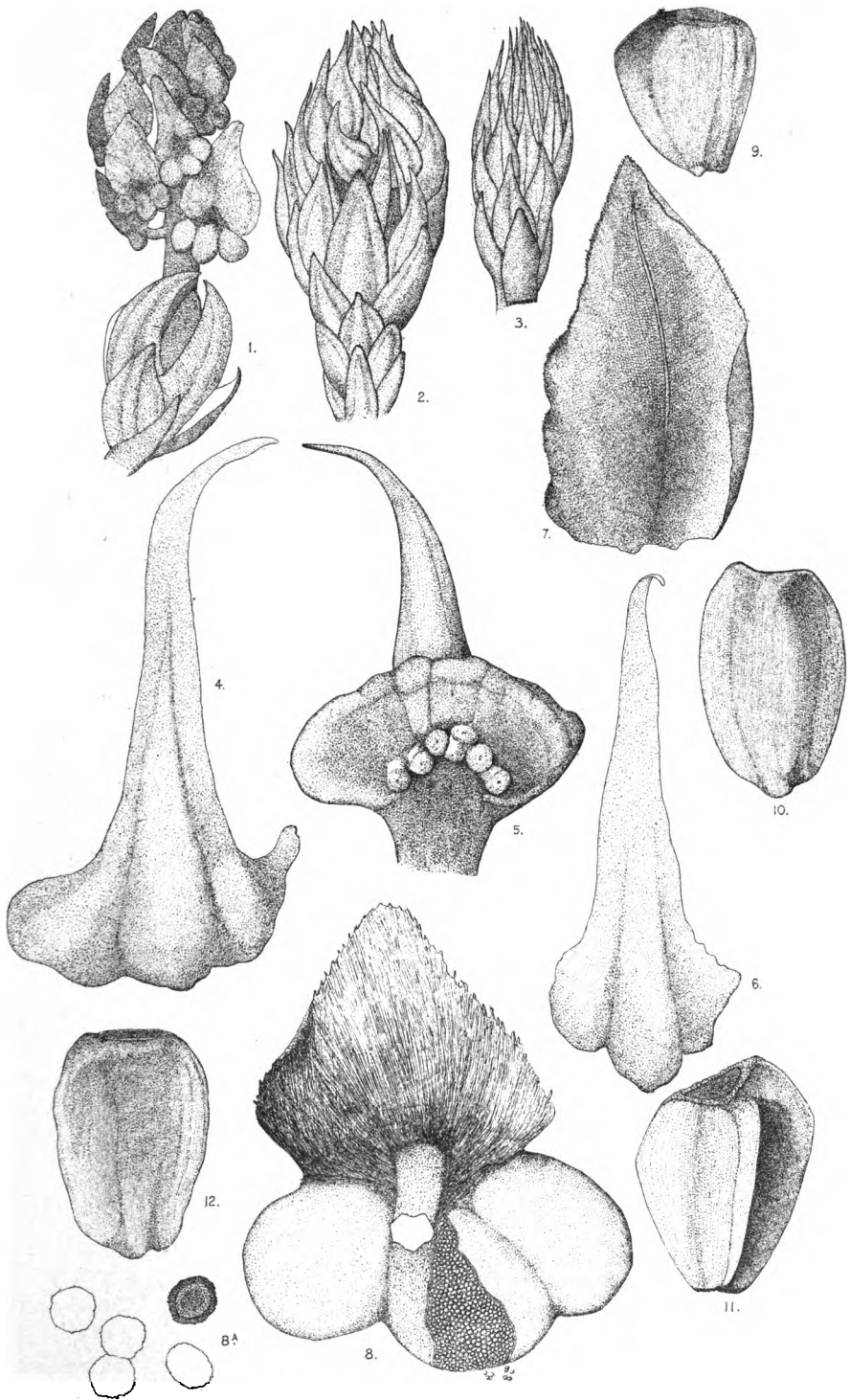
SEQUOIA SEMPERVIRENS ENDL.



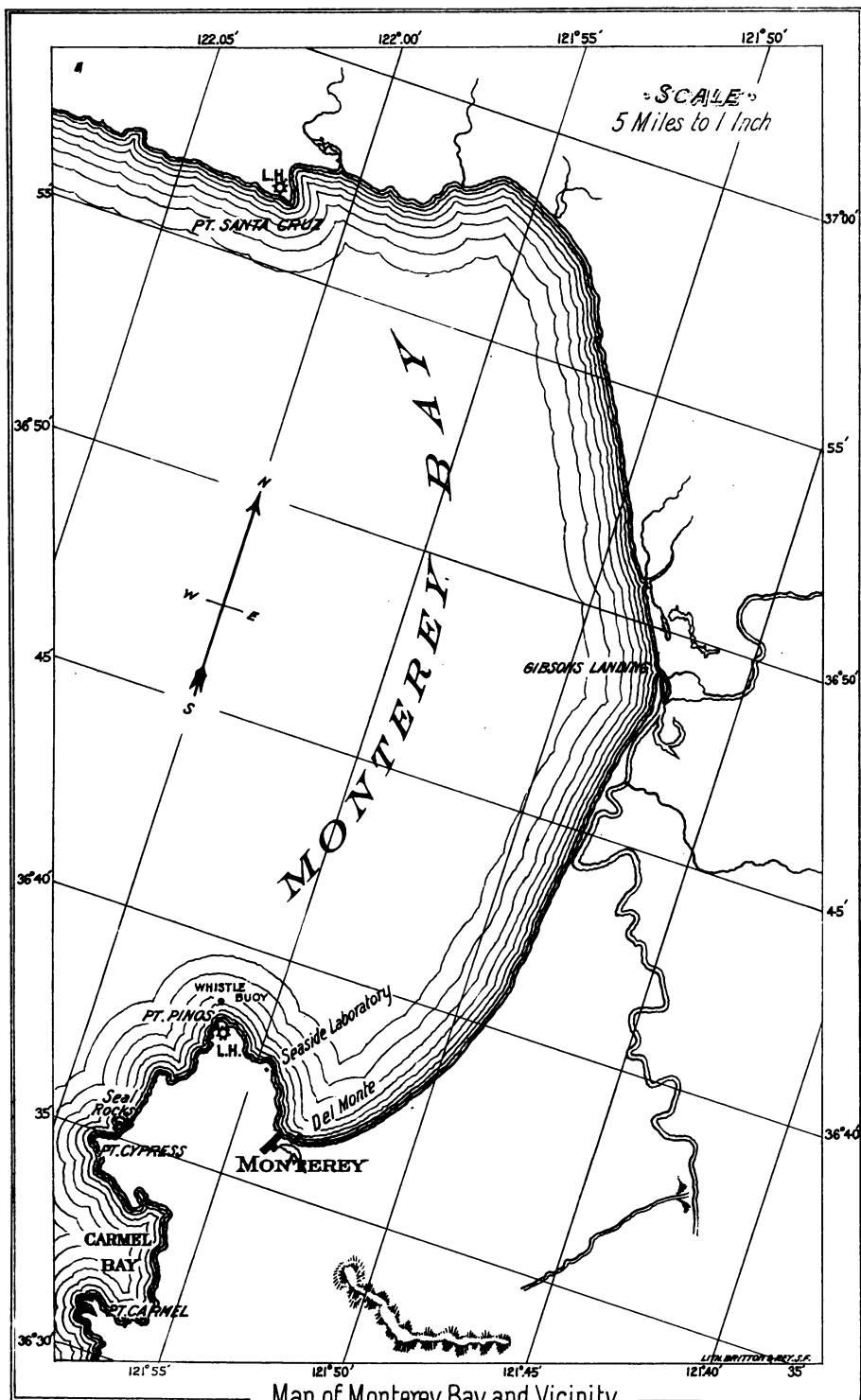
SEQUOIA SEMPERVIRENS ENDL.



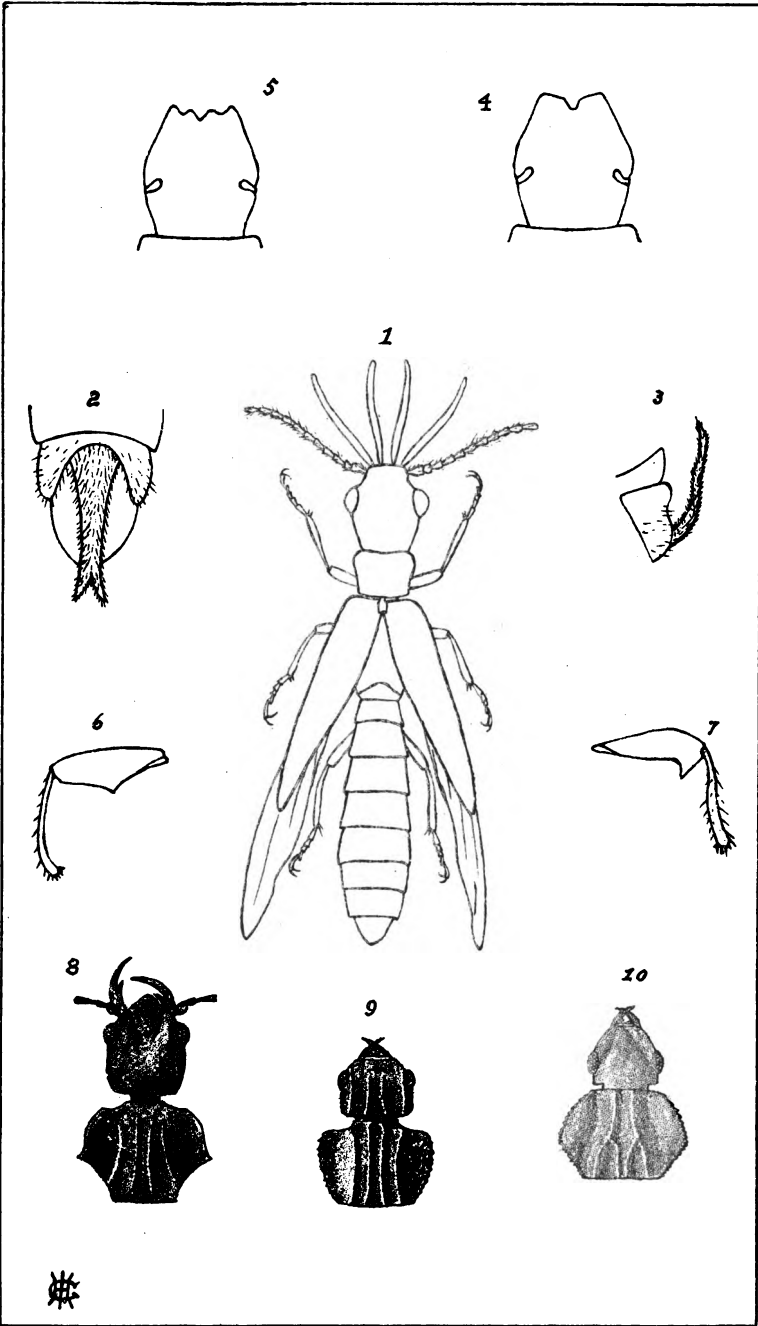
LEAVES, SECTIONS OF LEAVES AND SCALES OF SEQUOIA.

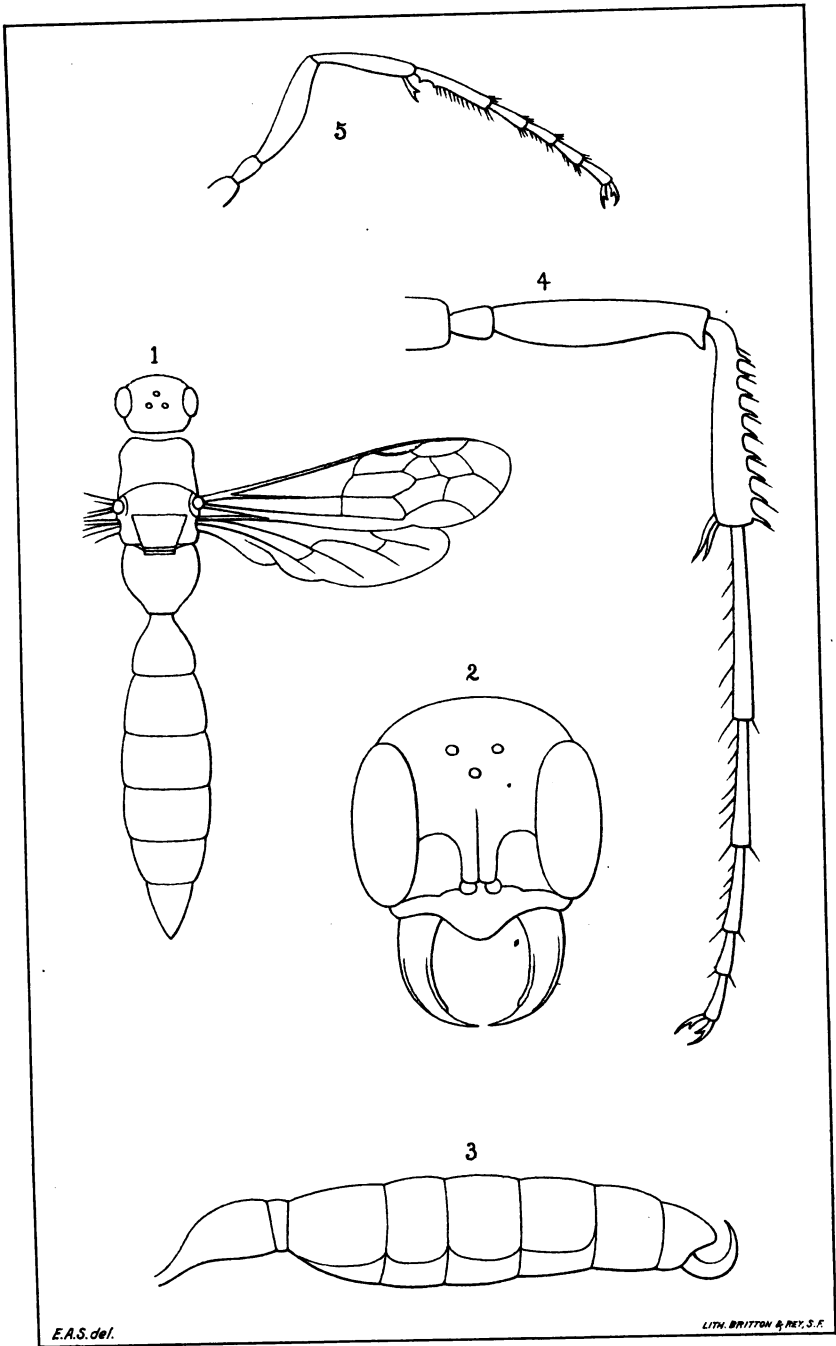


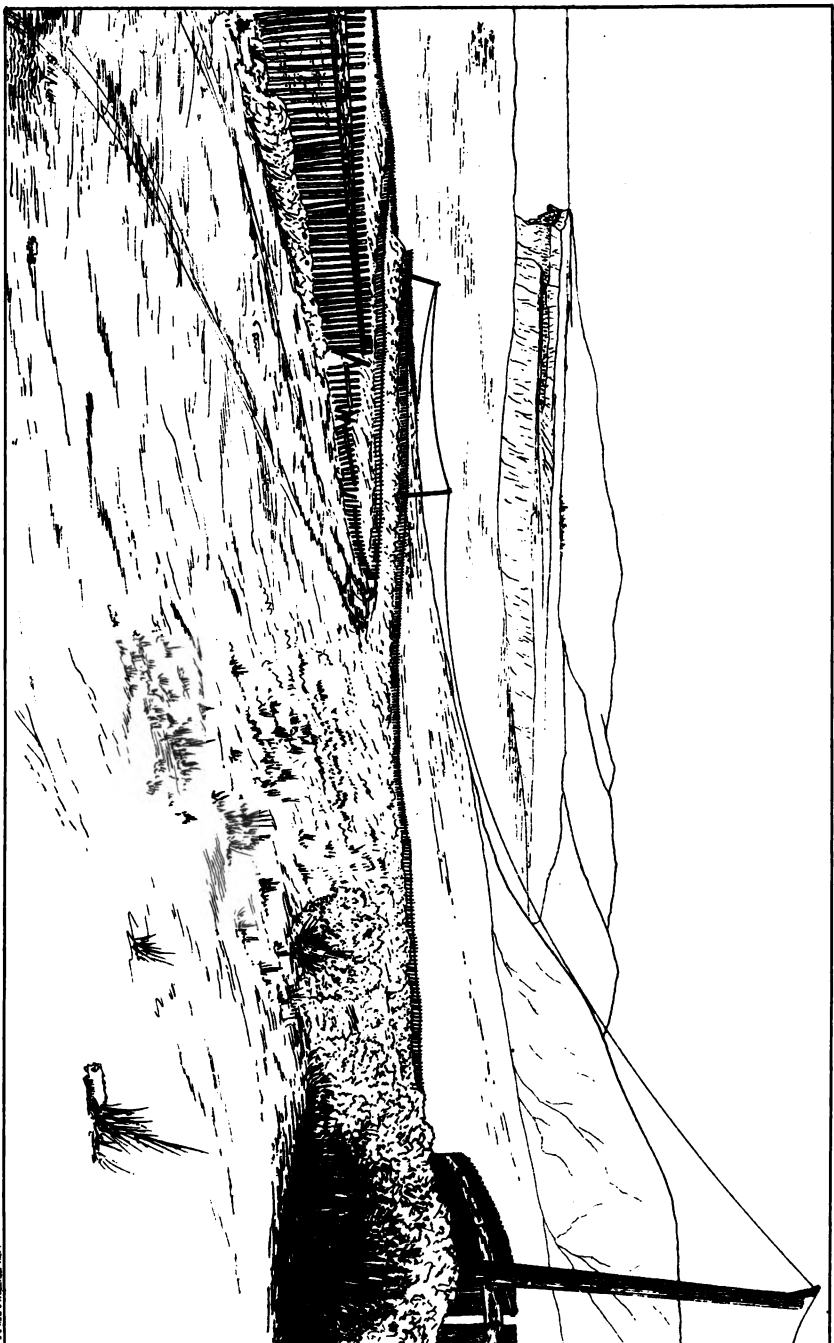
FLORAL ORGANS OF SEQUOIA.



Map of Monterey Bay and Vicinity.

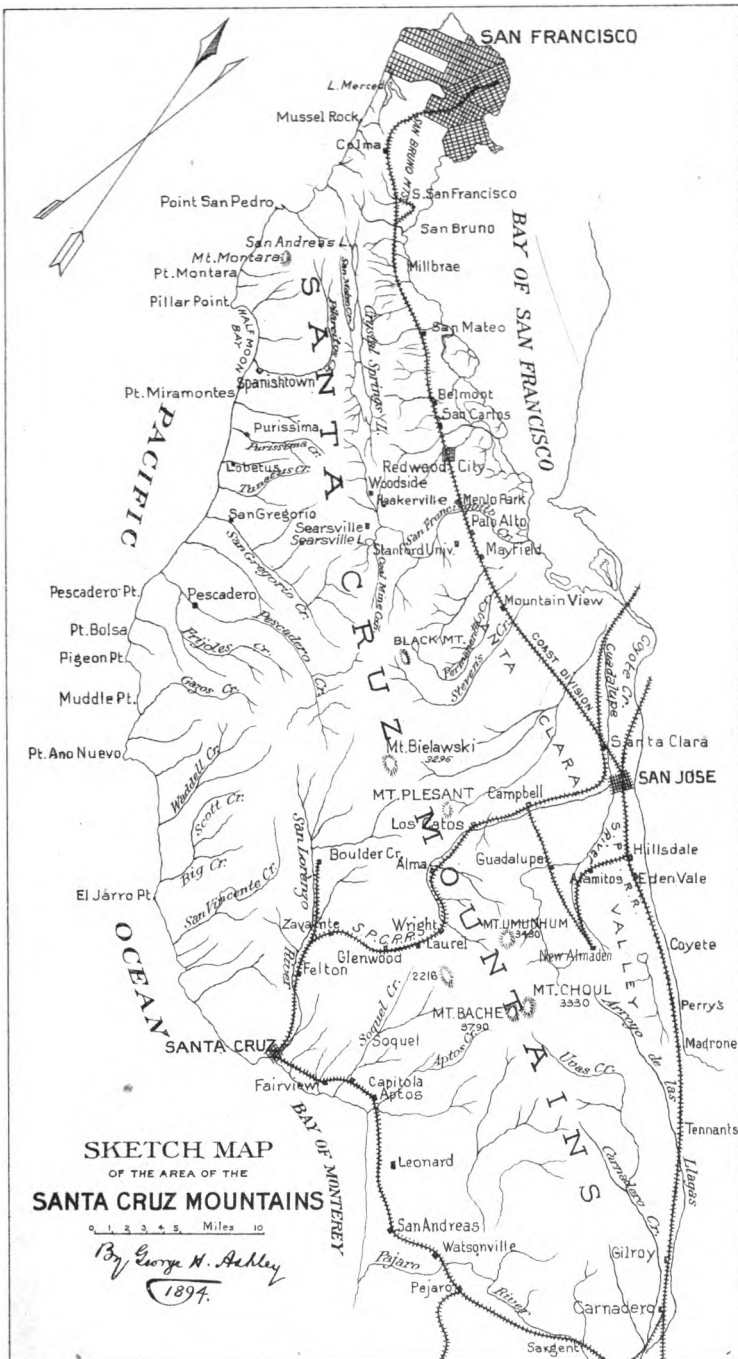




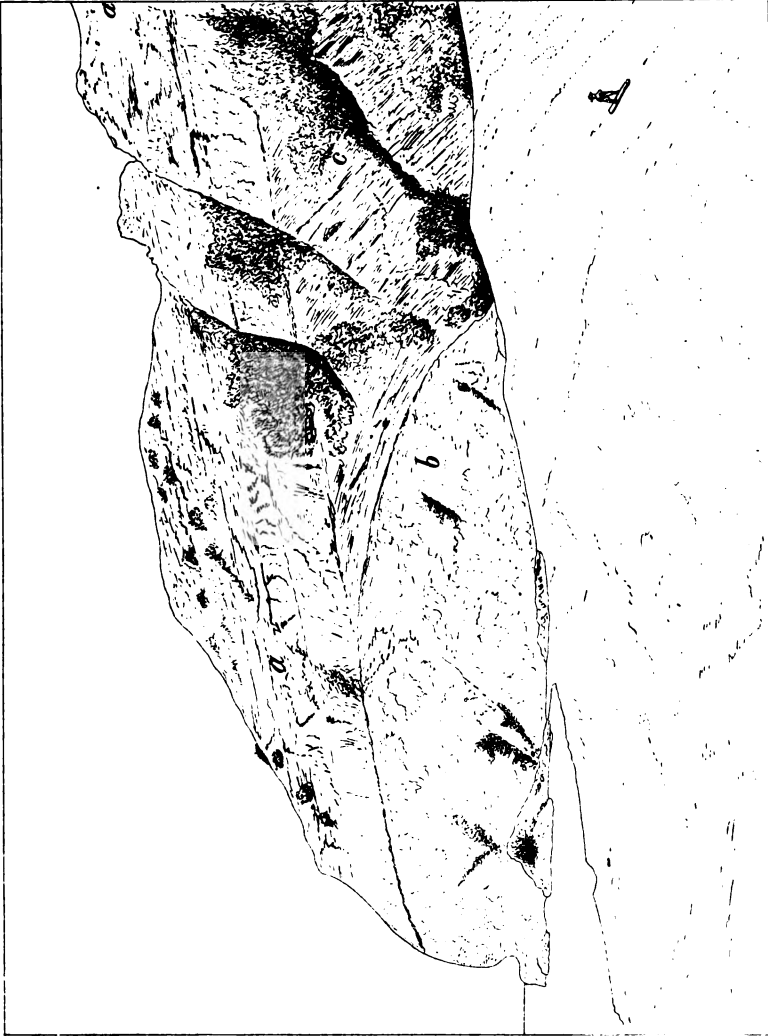


Raised Beach near Lobetius - Quaternary overlying Merced strata.

2710. AMERICAN GEOLOGICAL SURVEY.

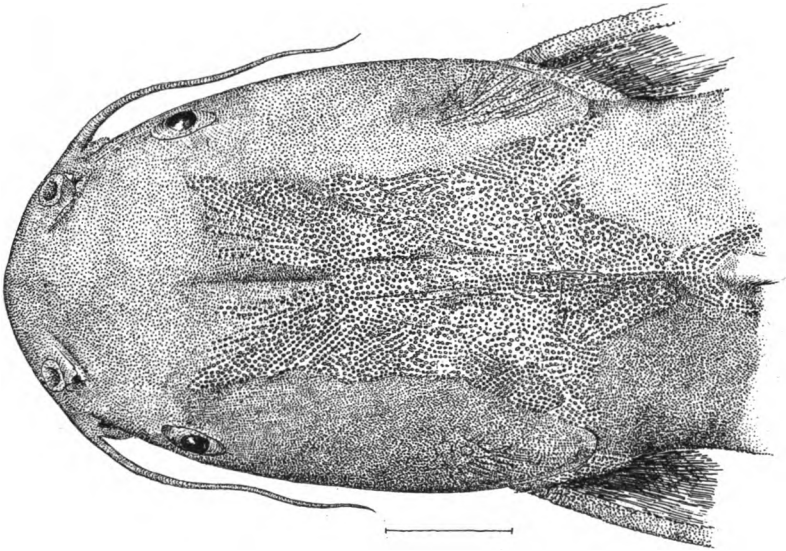


2²¹



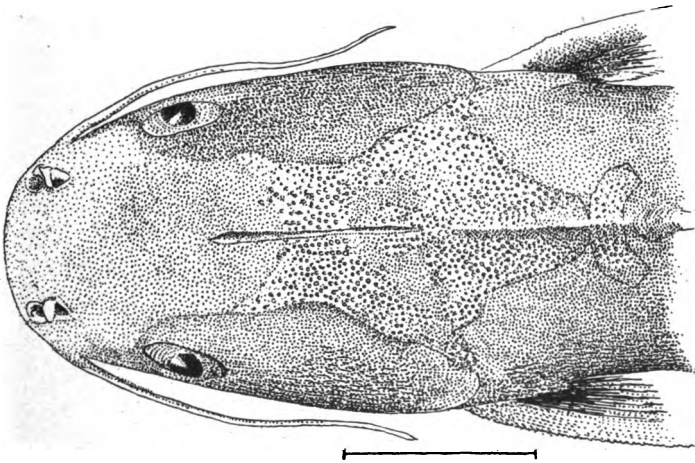
Mussel Rock from the South, showing marine Pliocene (a), overlying sand dunes (c), and igneous rocks (b).

PLATE XXVII

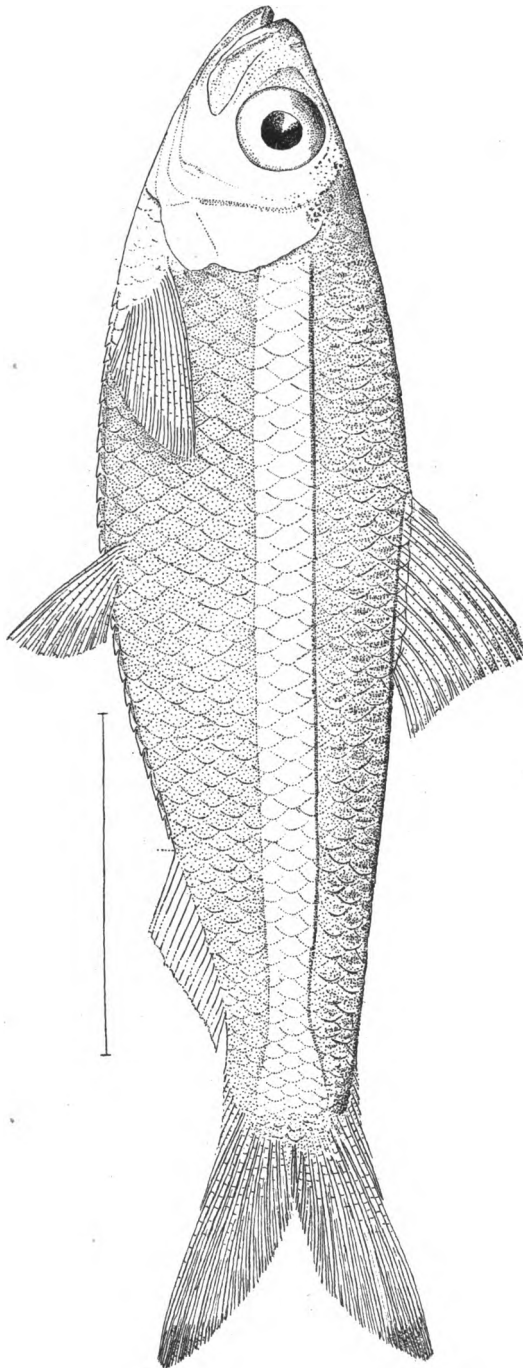


GALEICHTHYS AZUREUS.

PLATE XXVI



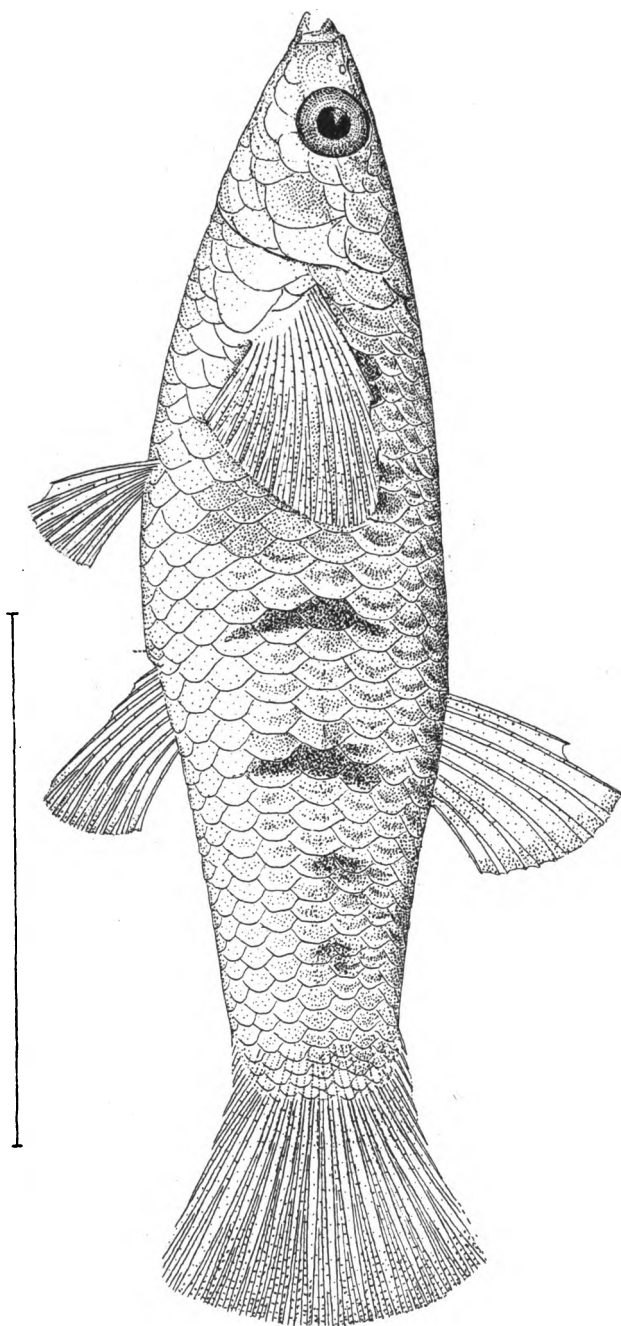
GALEICHTHYS GILBERTI.



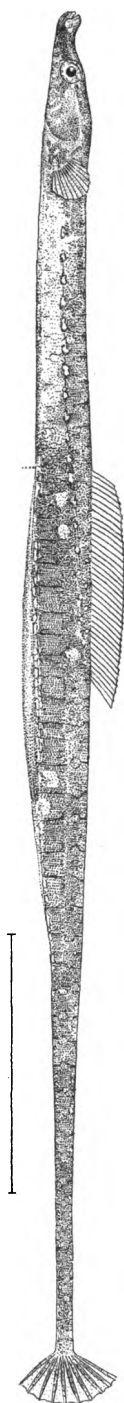
SARDINELLA STOLIFERA.

ANNA L. BROWN, DEL.

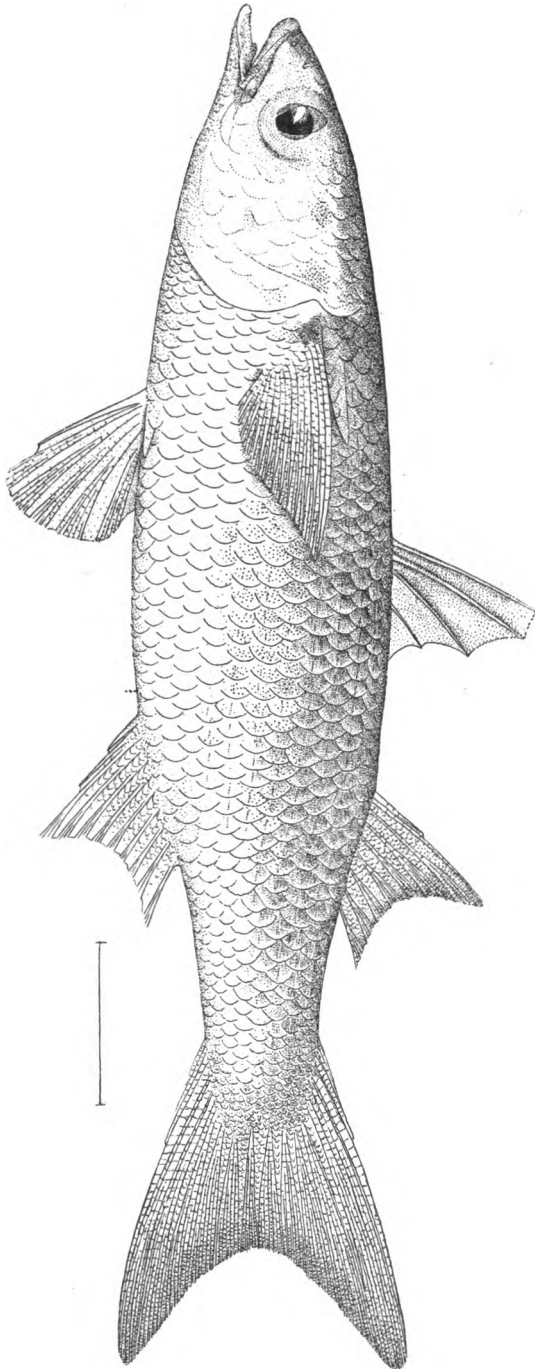
LTH. BRITTON & REY, SC.



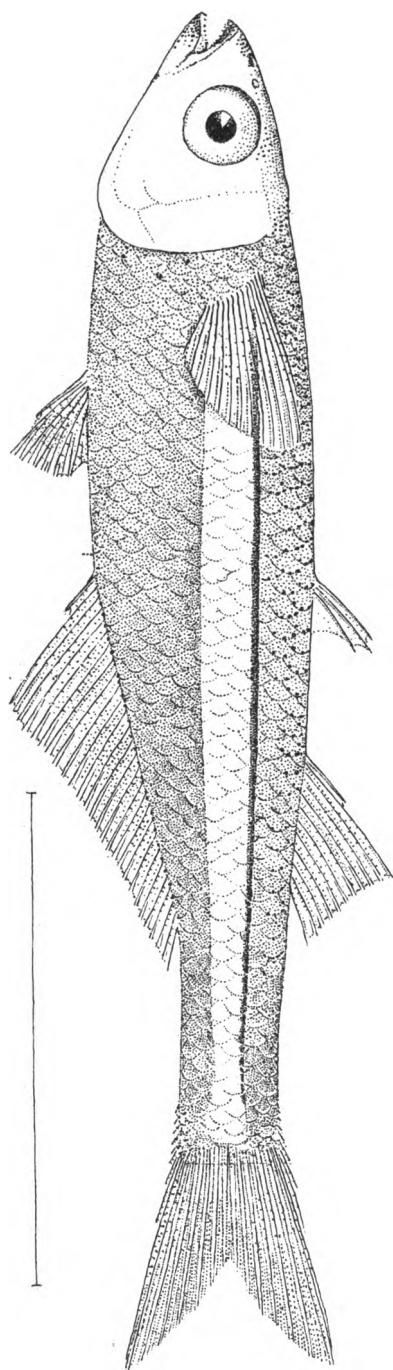
POECILIA PRESIDIONIS.



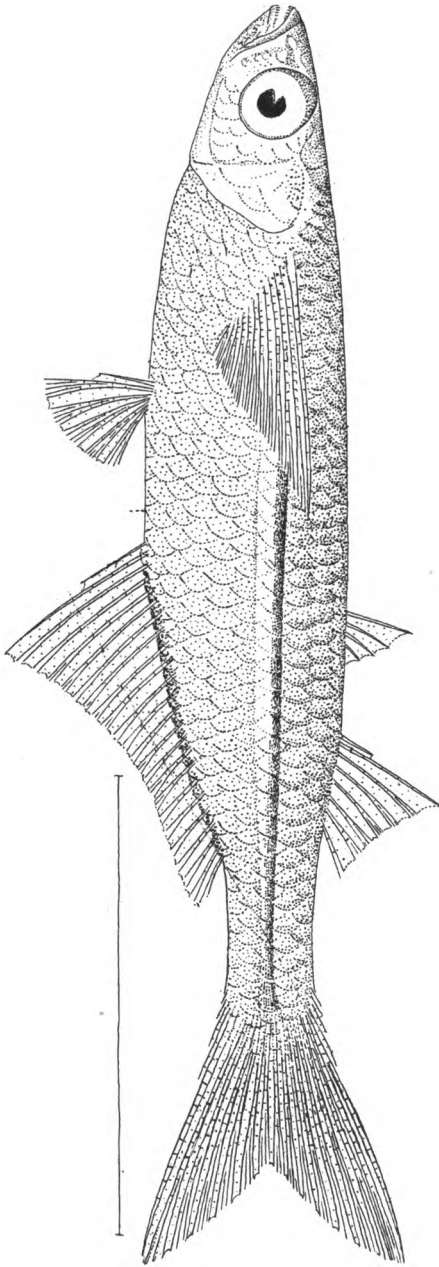
SIPHOSTOMA STARKSI.



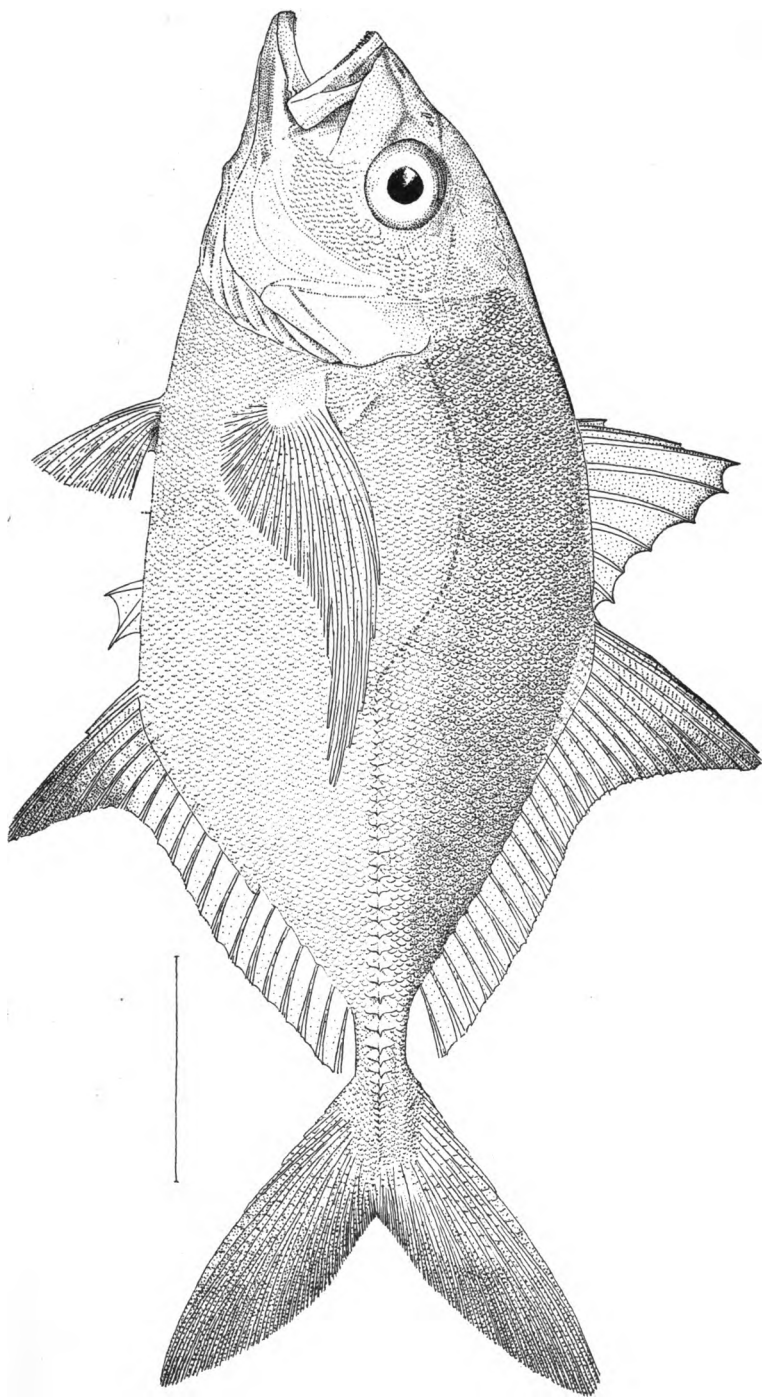
MUGIL HOSPES.



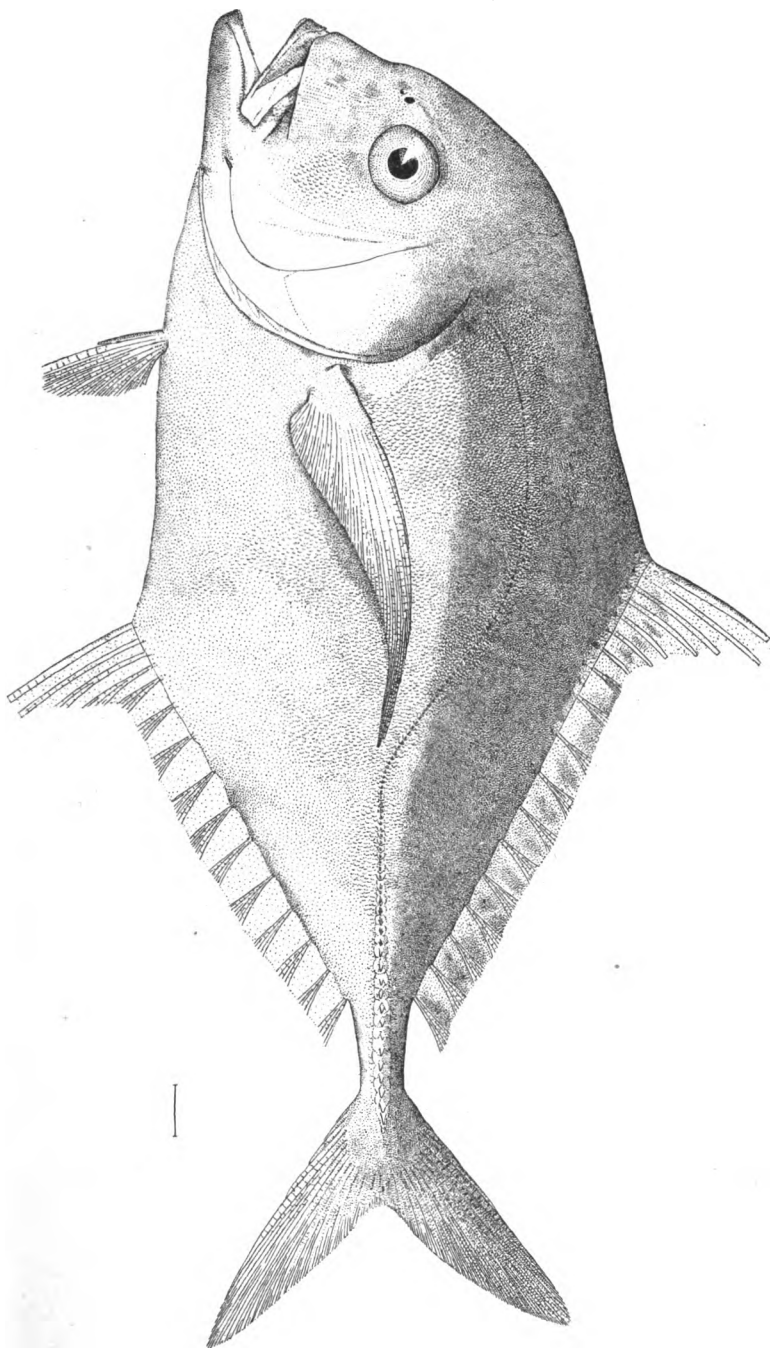
EURYSTOLE ERIARCHA.



THYRINA EVERMANNI.



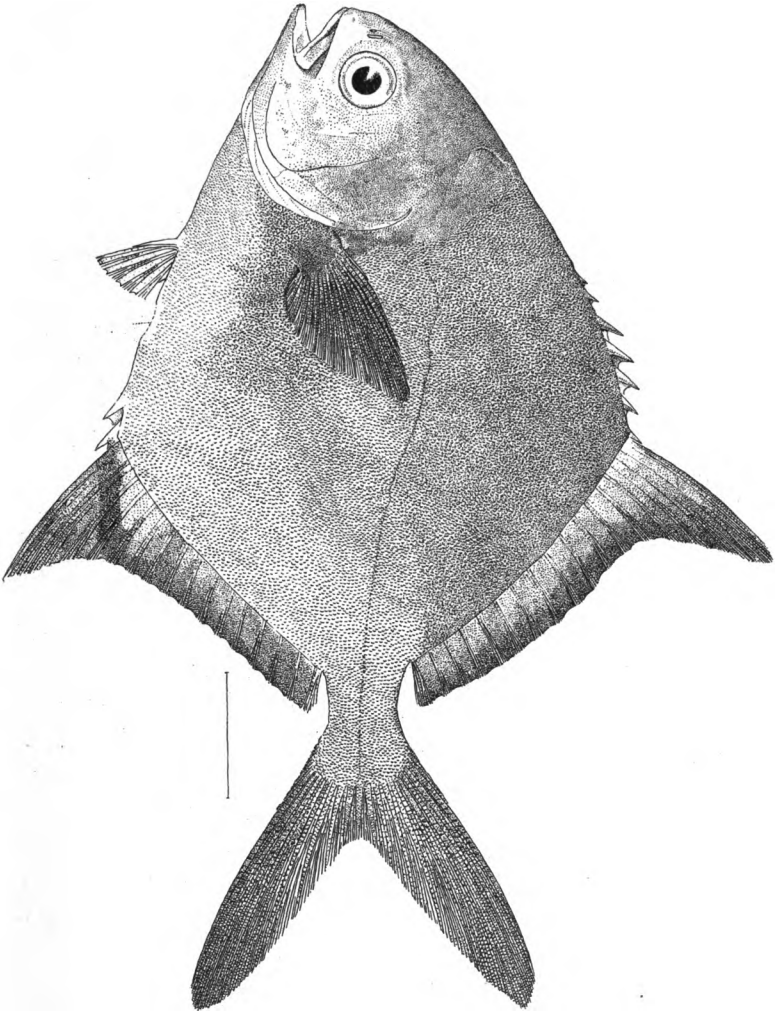
CARANX MEDUSICOLA.



HYNNIS HOPKINSI.

ANNA L. BROWN DEL.

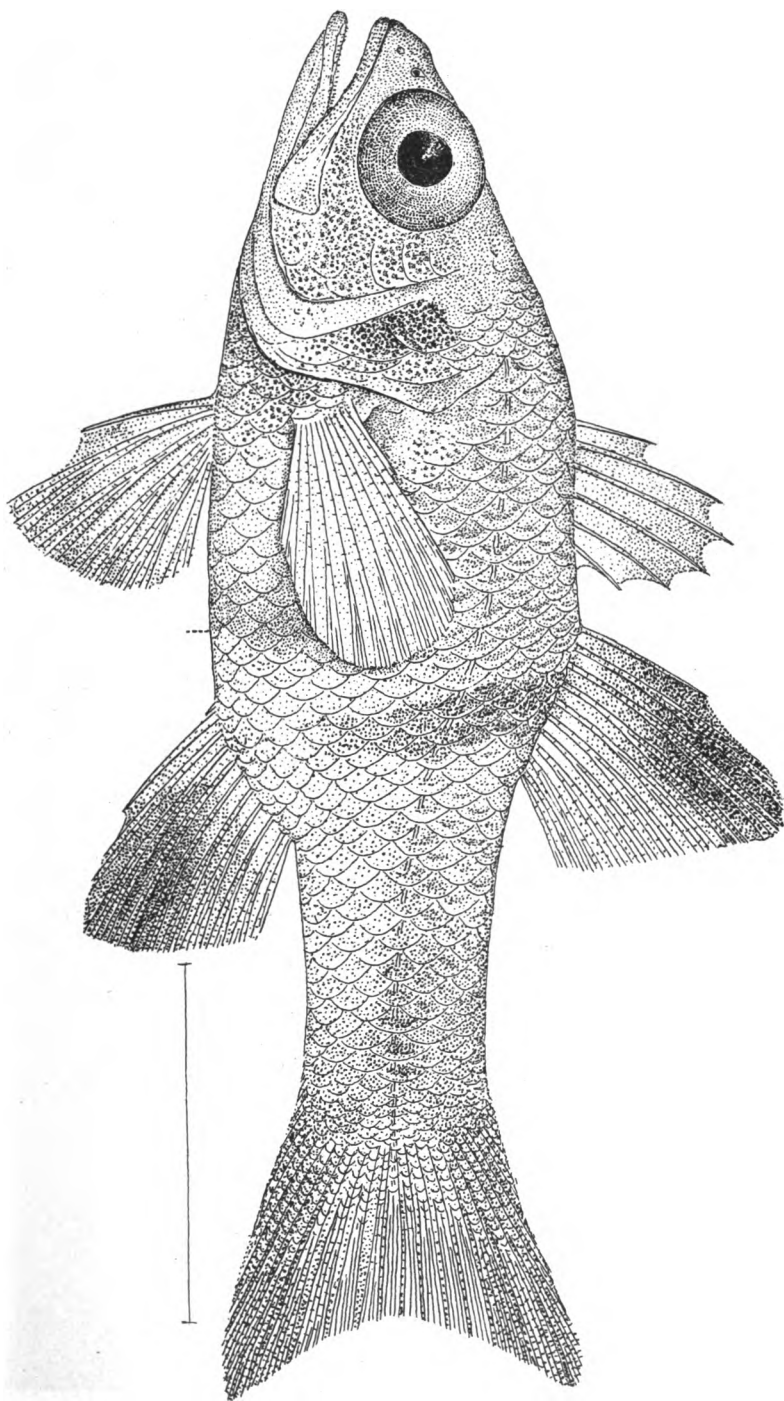
LITH. BRITTON & REED, ST.



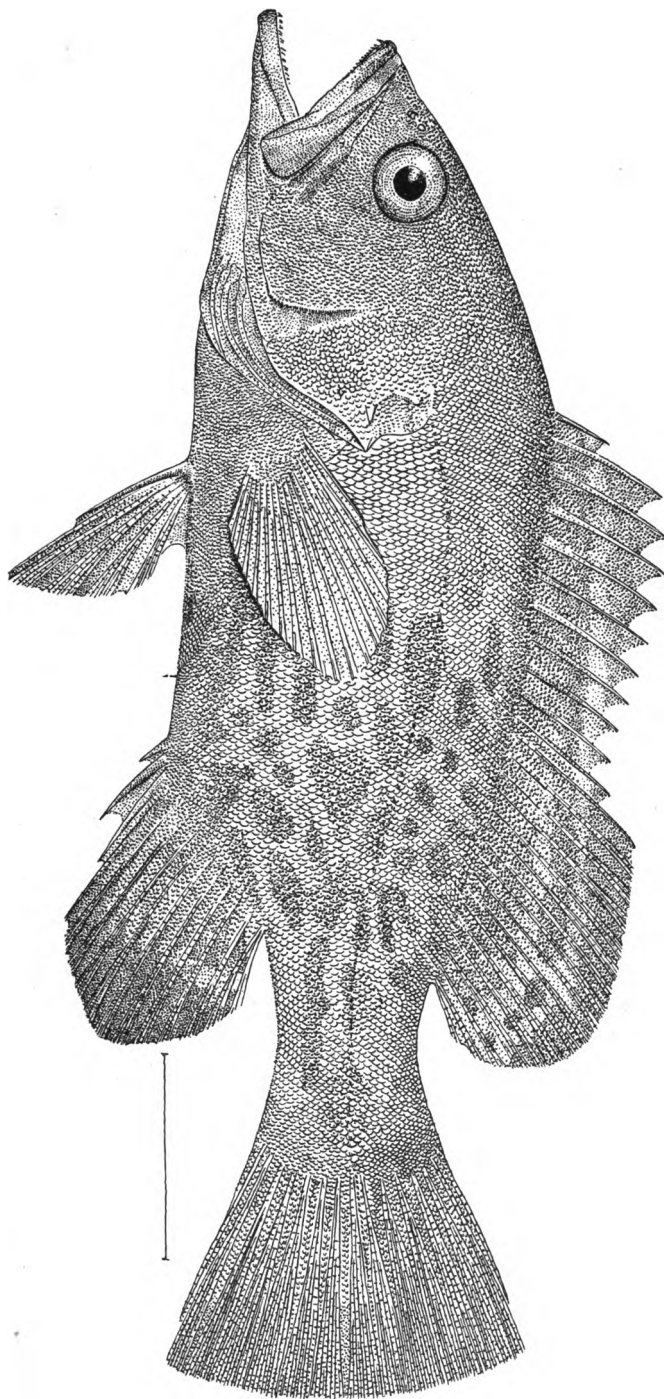
TRACHINOTUS CULVERI.

ANNA L. BROWN DEL.

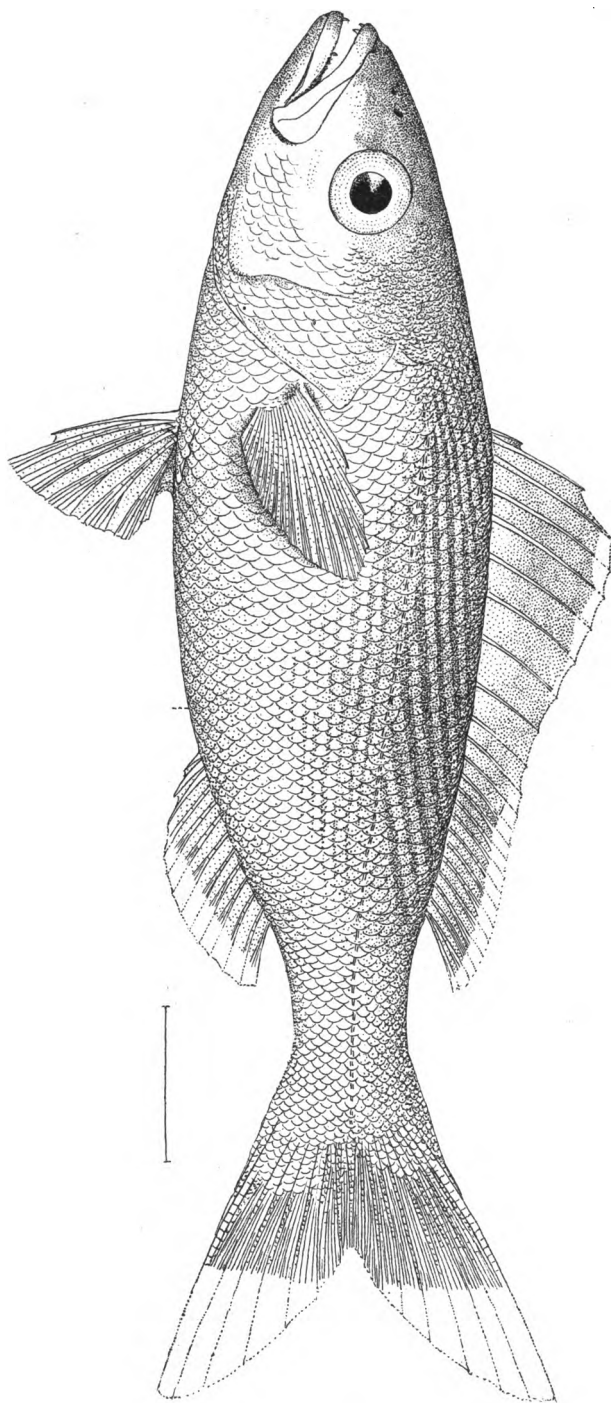
LITH. BRITTON & REY, S.F.



APOGON RETROSELLA.



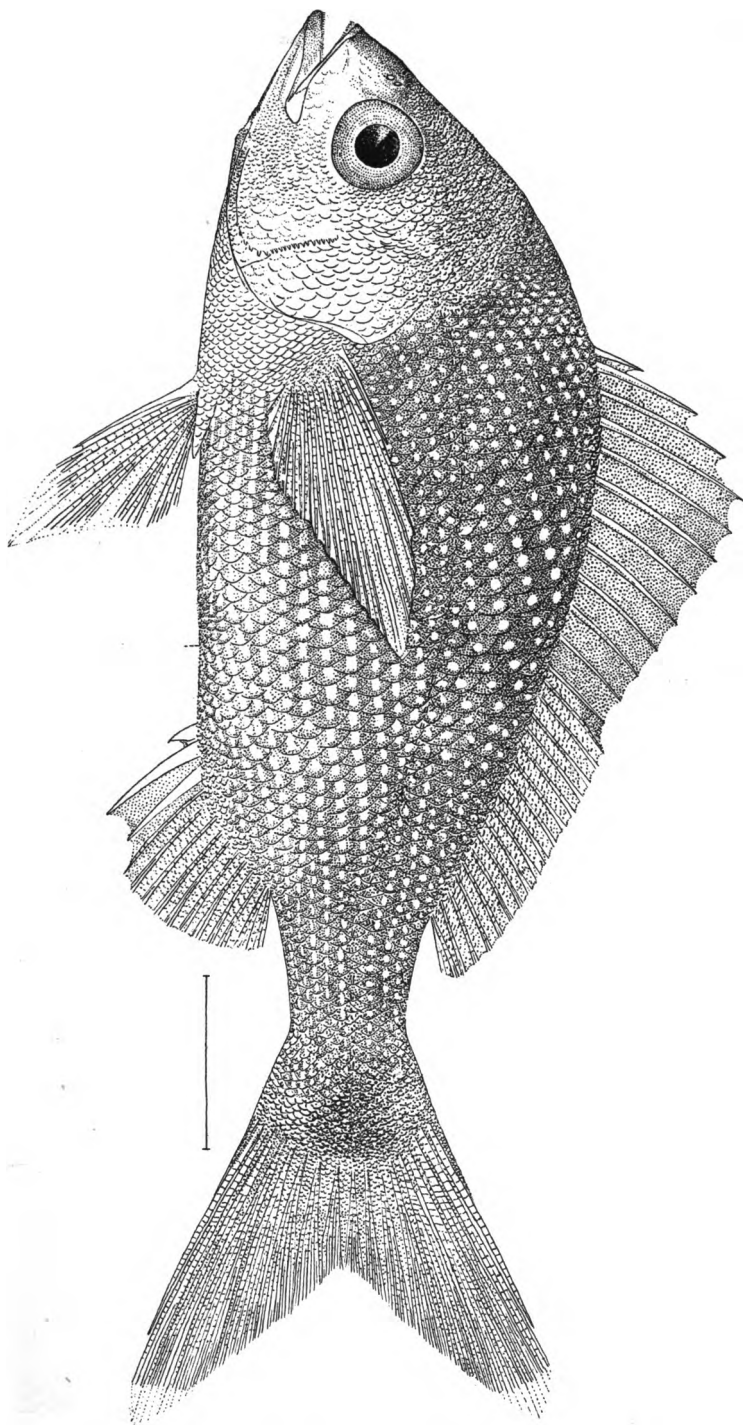
MYCTEROPERCA BOULENGERI.



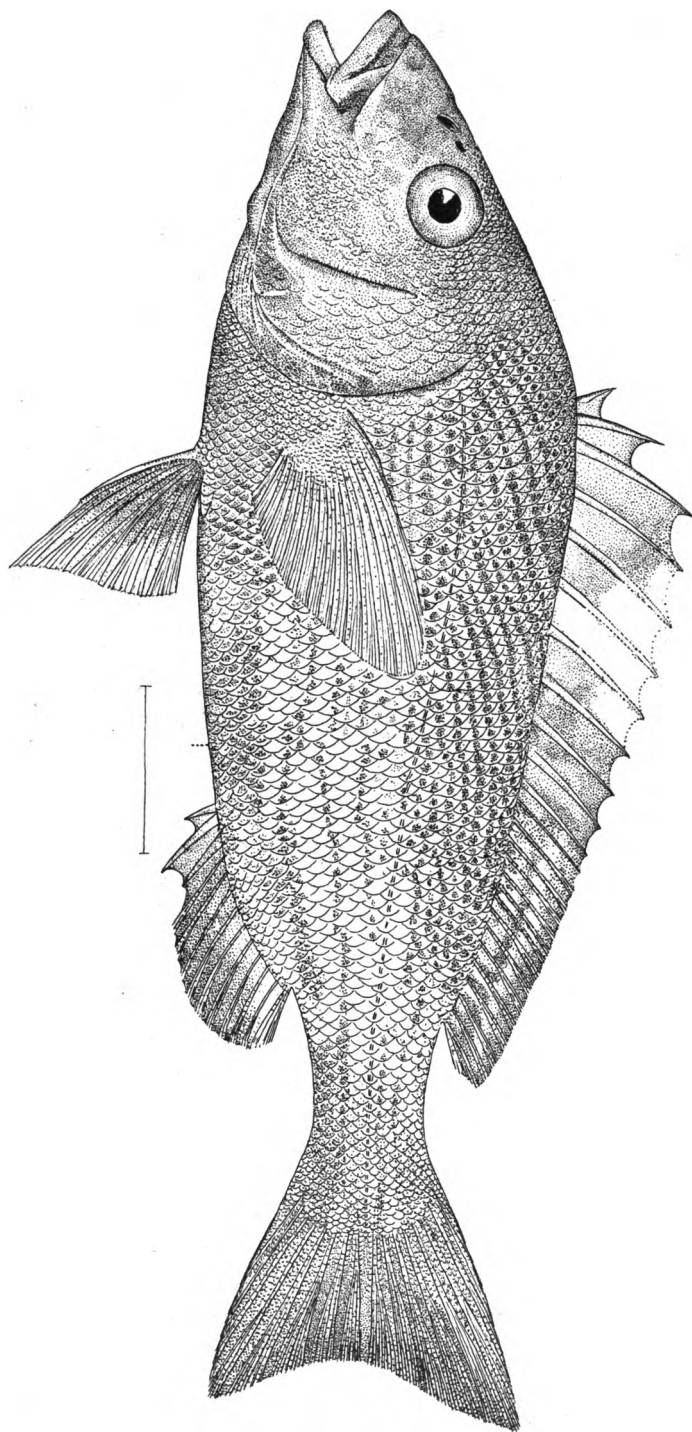
RABIRUBIA INERMIS.

ANNA L. BROWN, DEL.

LITH. BRITTON & REY, SAN



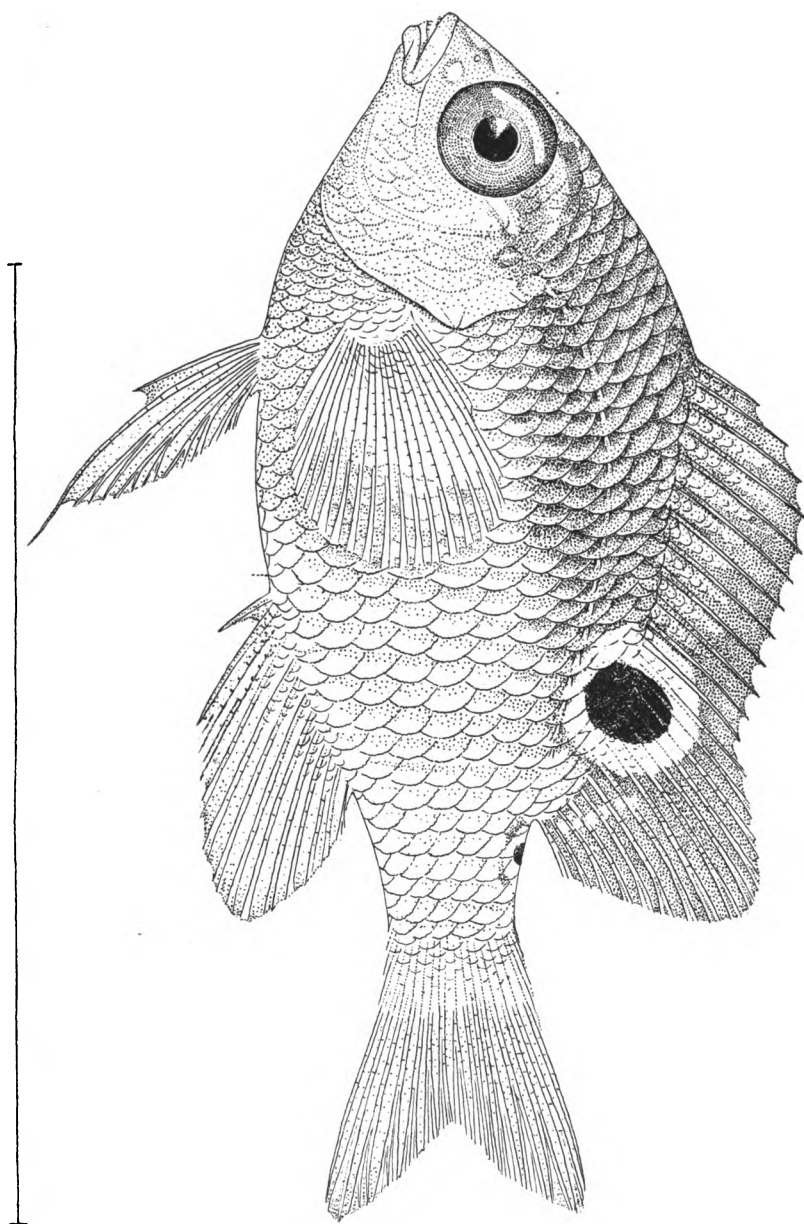
LYTHRULON OPALESCENS.



ORTHOPRISTIS REDDINGI.

ANNA L. BROWN, DEL.

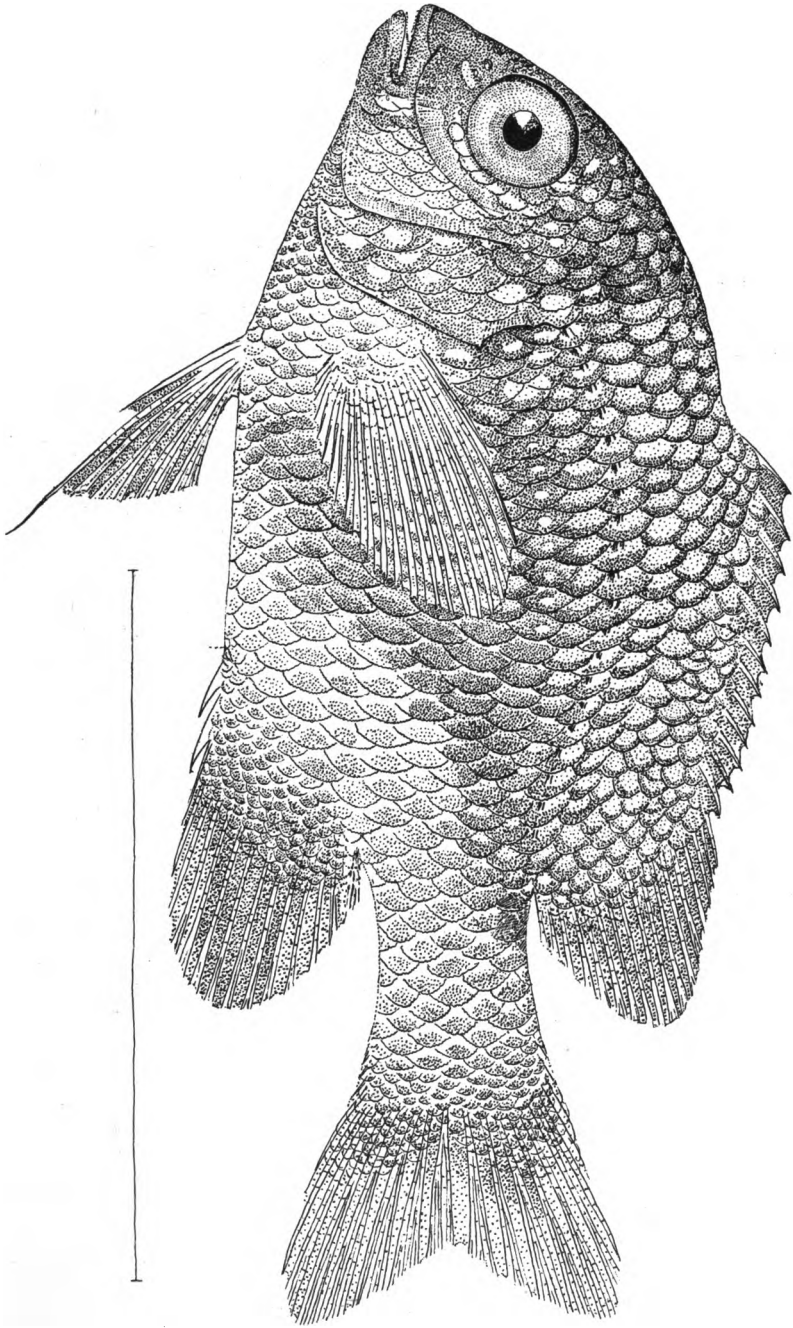
LITH. BRITTON & RAY, SF.



EUPOMACENTRUS FLAVILATUS.

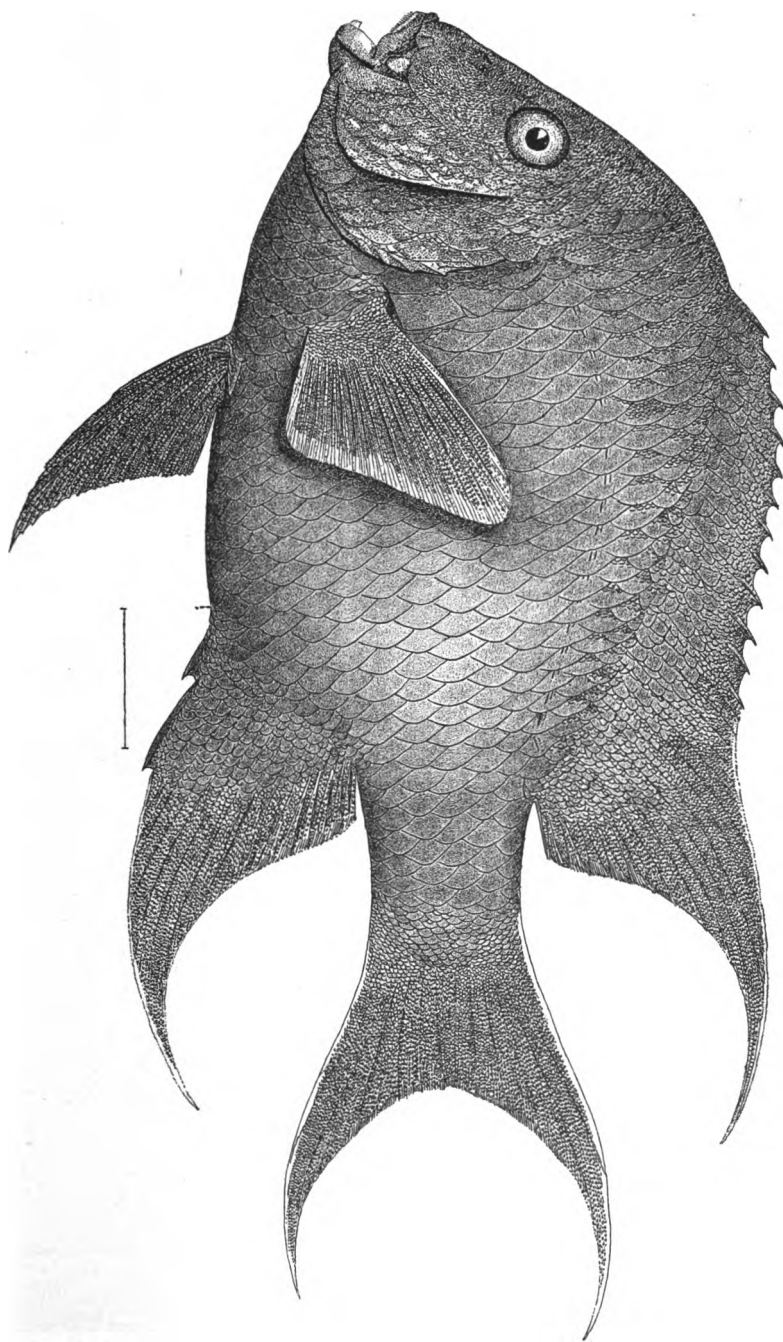
ANNA L. BROWN, DEL.

LITH. BRITTON & HAY, S.F.



MICROSPATHODON BAIRDII.

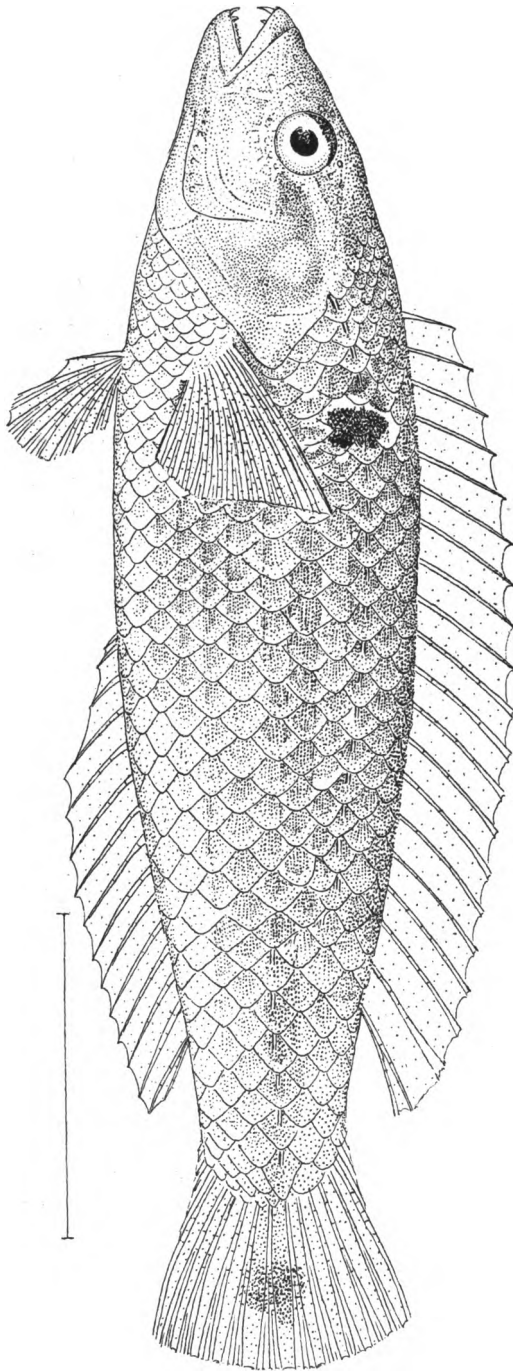
ANNA L. BROWN, DEL.



MICROSPATHODON AZURISSIMUS.

ANNA L. BROWN, DEL.

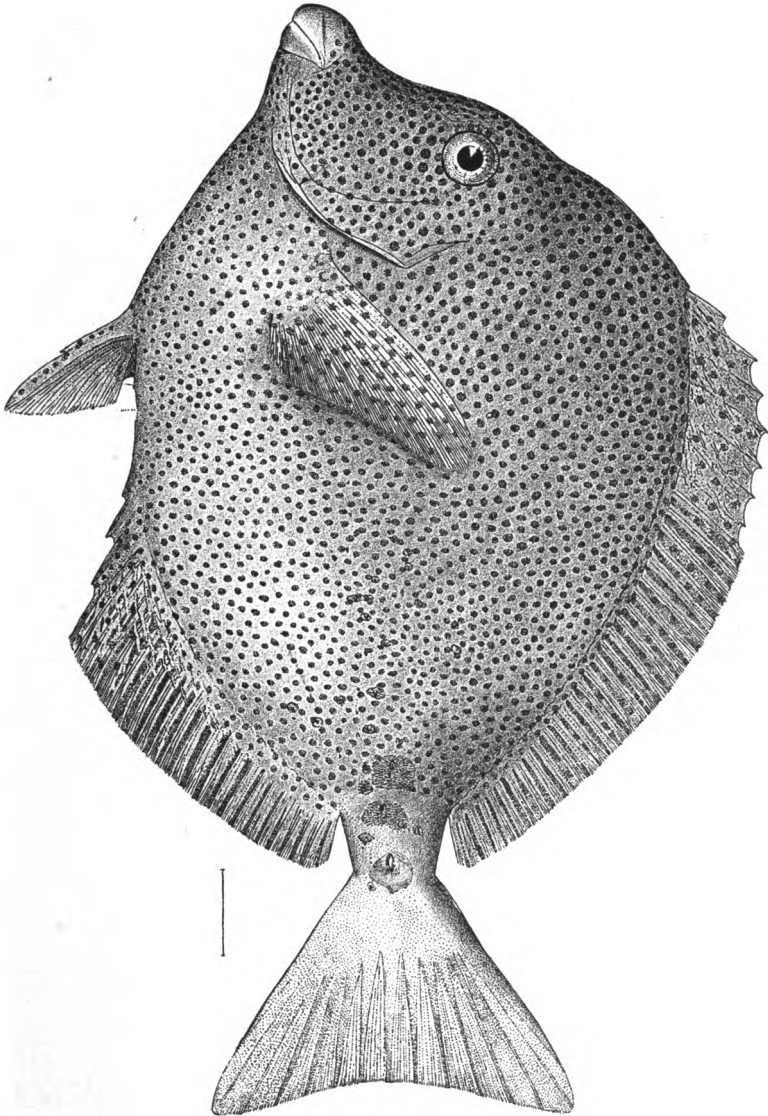
LITH. BRITTON & HESY, S.F.



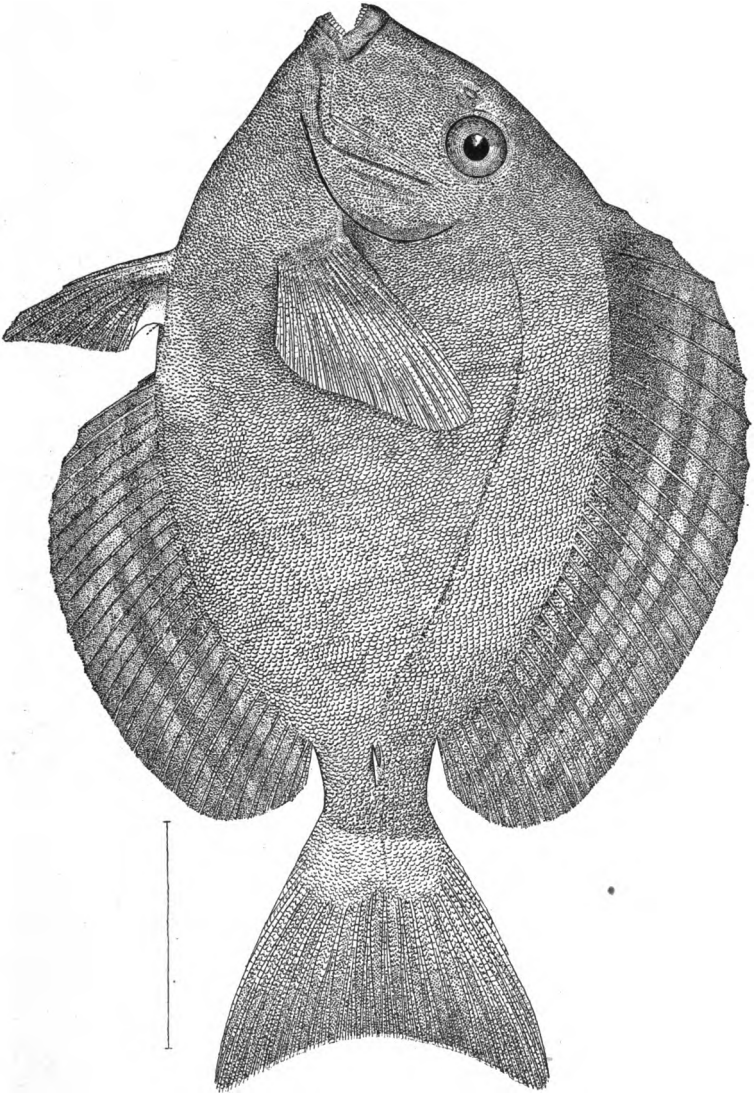
HALICHÆRES DISPILUS.

ANNA L. BROWN DEL.

LITH. BRITTON & PARY, SF.



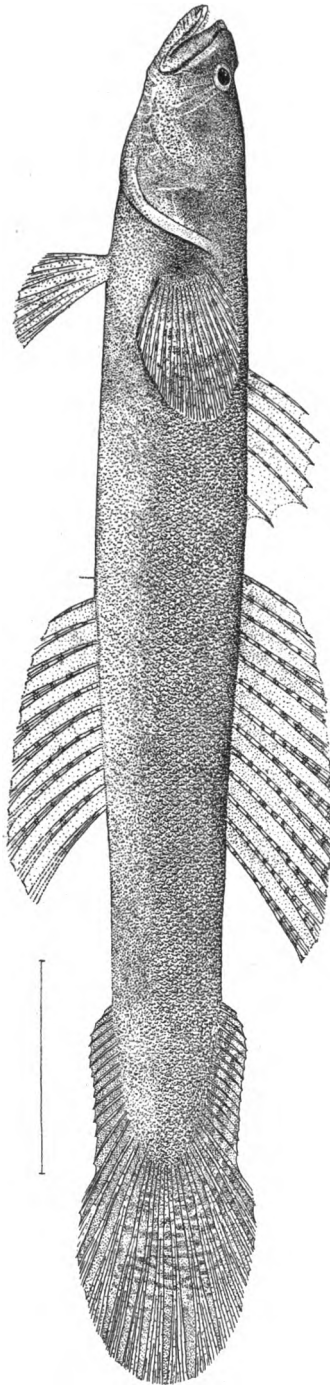
XESURUS PUNCTATUS.



TEUTHIS CRESTONIS.

Anna L. Brown, Del.

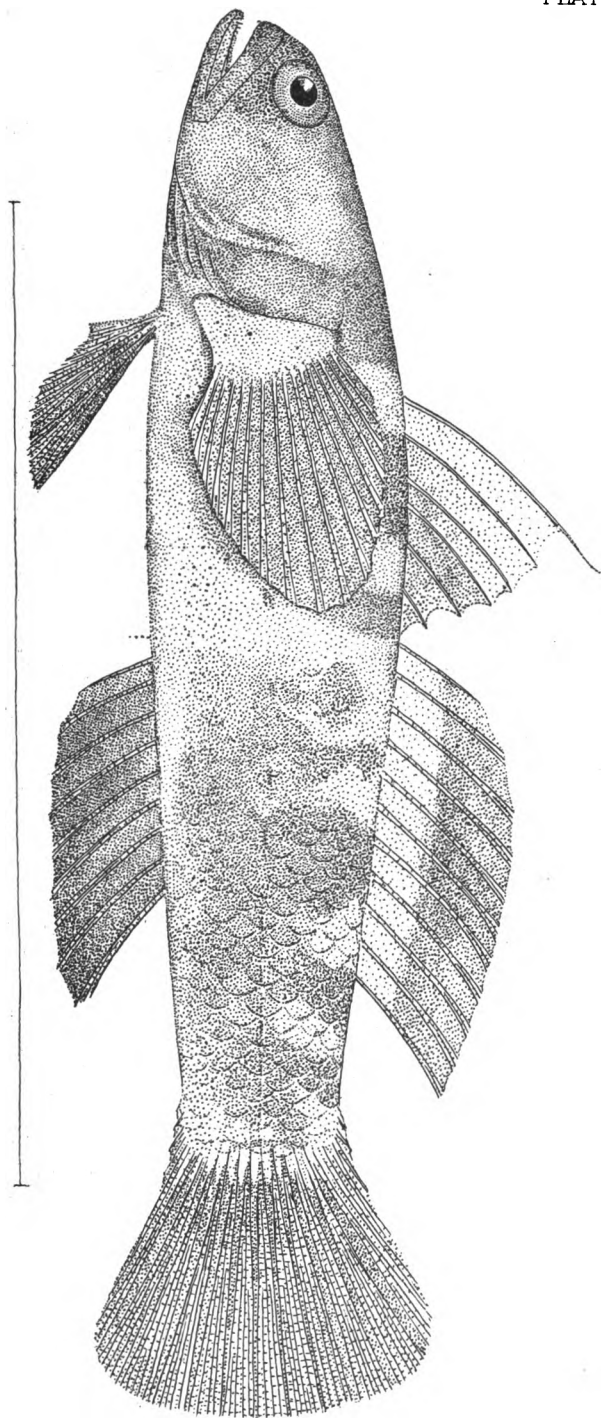
LITH. BRITTON & REY, S.F.



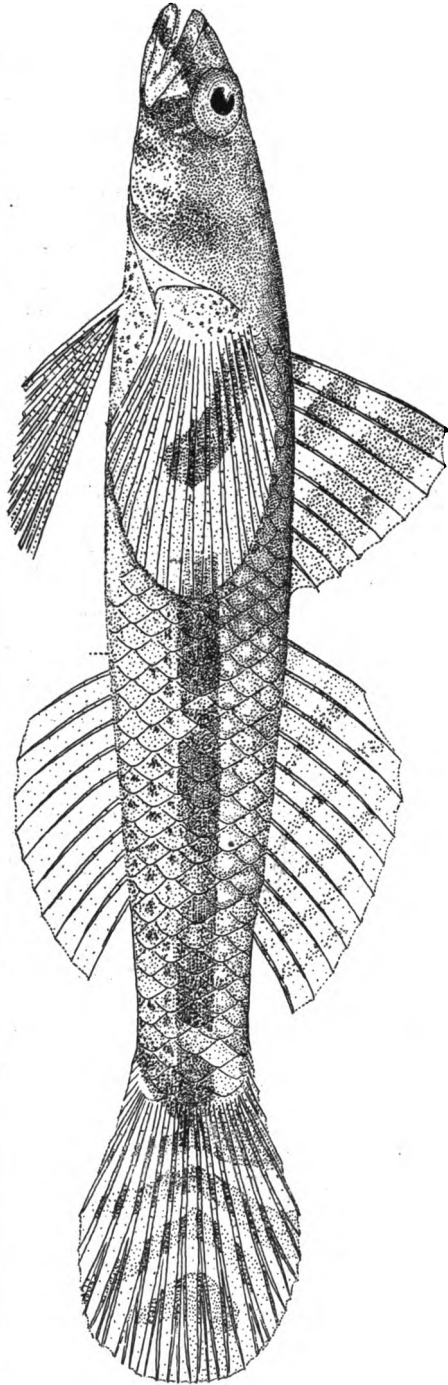
ALEXURUS ARMIGER.

ANNA L. BROWN, DEL.

LITH. BRITTON & POTT, SR.



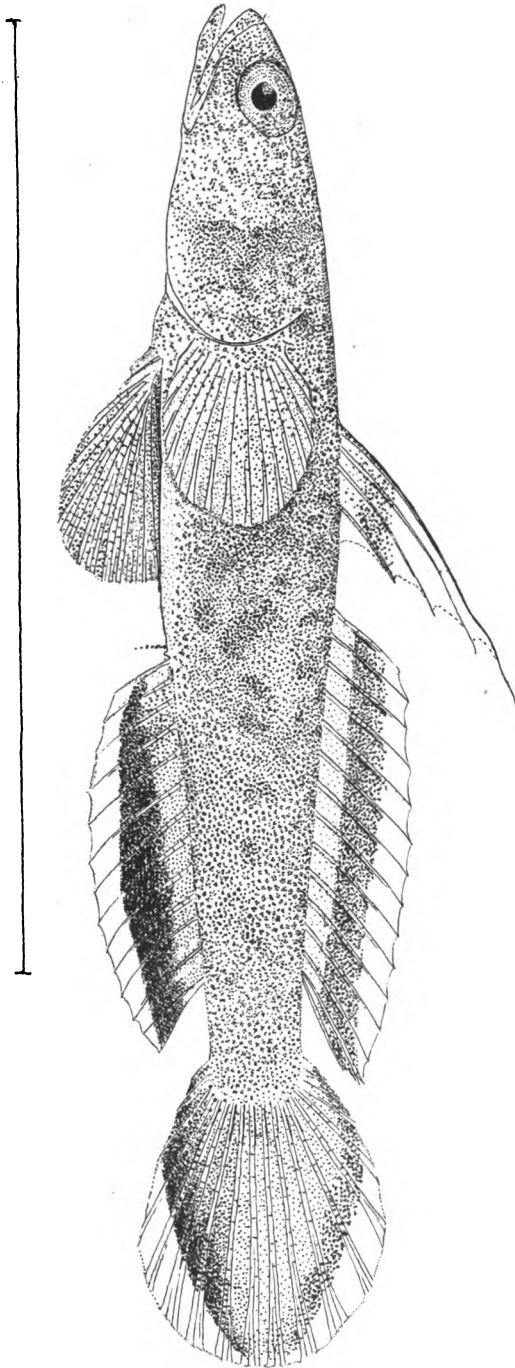
GARMANNIA PARADOXA.



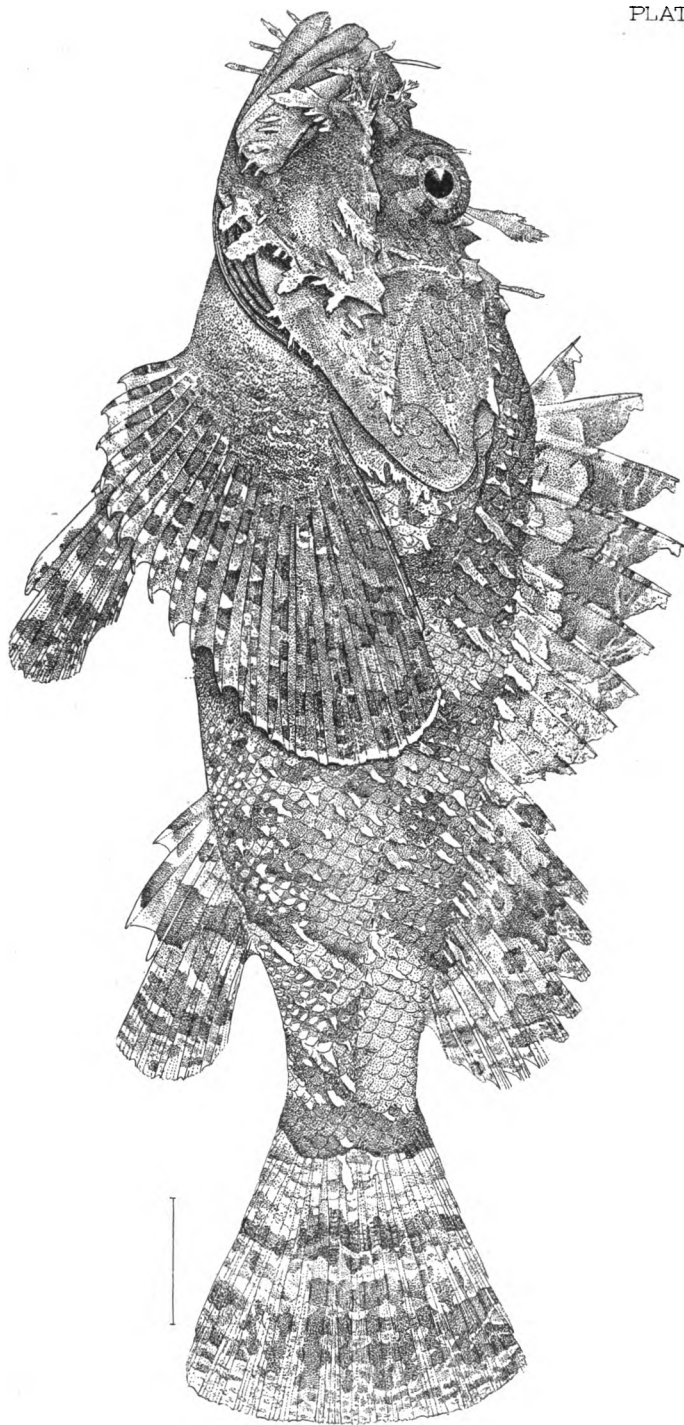
ABOMA ETHEOSTOMA.

ANDREW L. BROWN, DEL.

LITH. BRITTON & REY, SF.



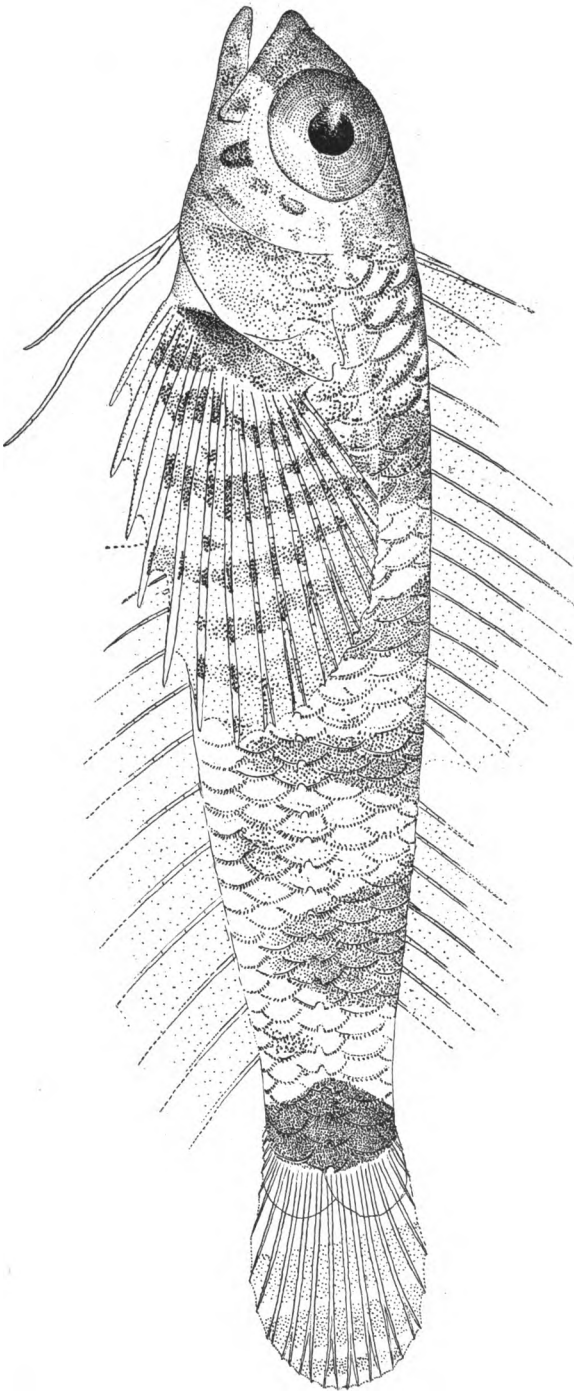
EVERMANNIA ZOSTERURA.



SCORPÆNA MYSTES.

ANIMA L. BROWN DEL.

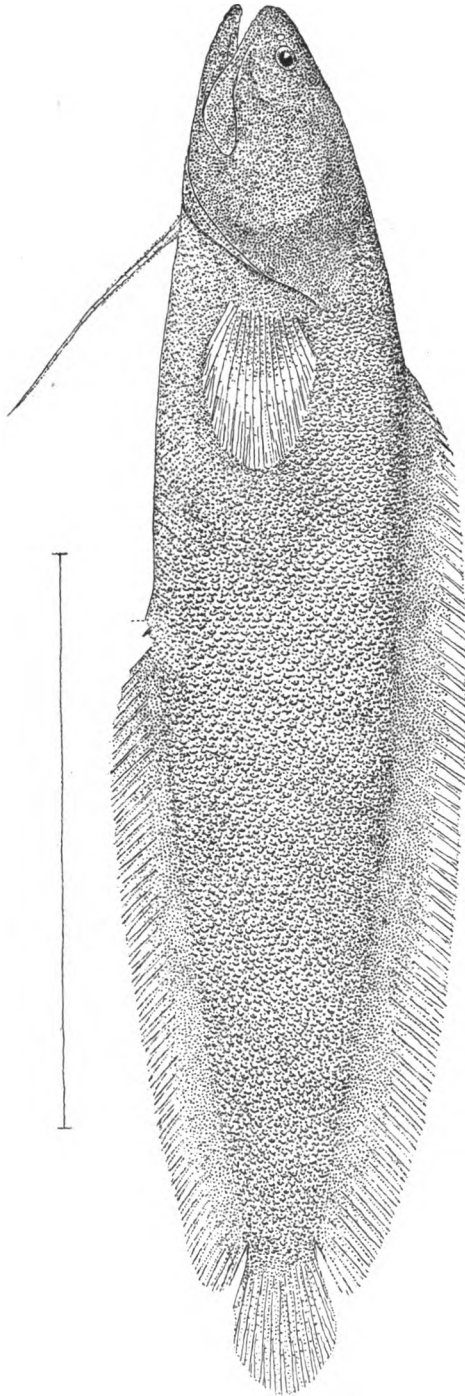
LITH. BRITTON & MARY, S.F.



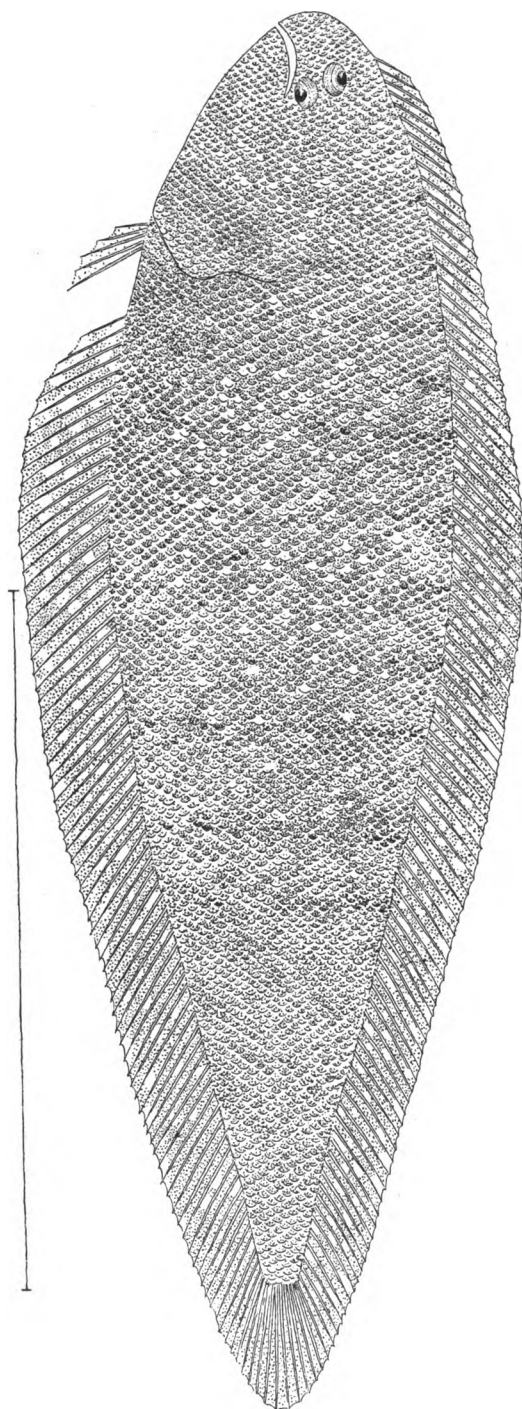
ENNEANECTES CARINALIS.

LITH. BRITTON & REY. SC.

ANNA L. BROWN, DEL.



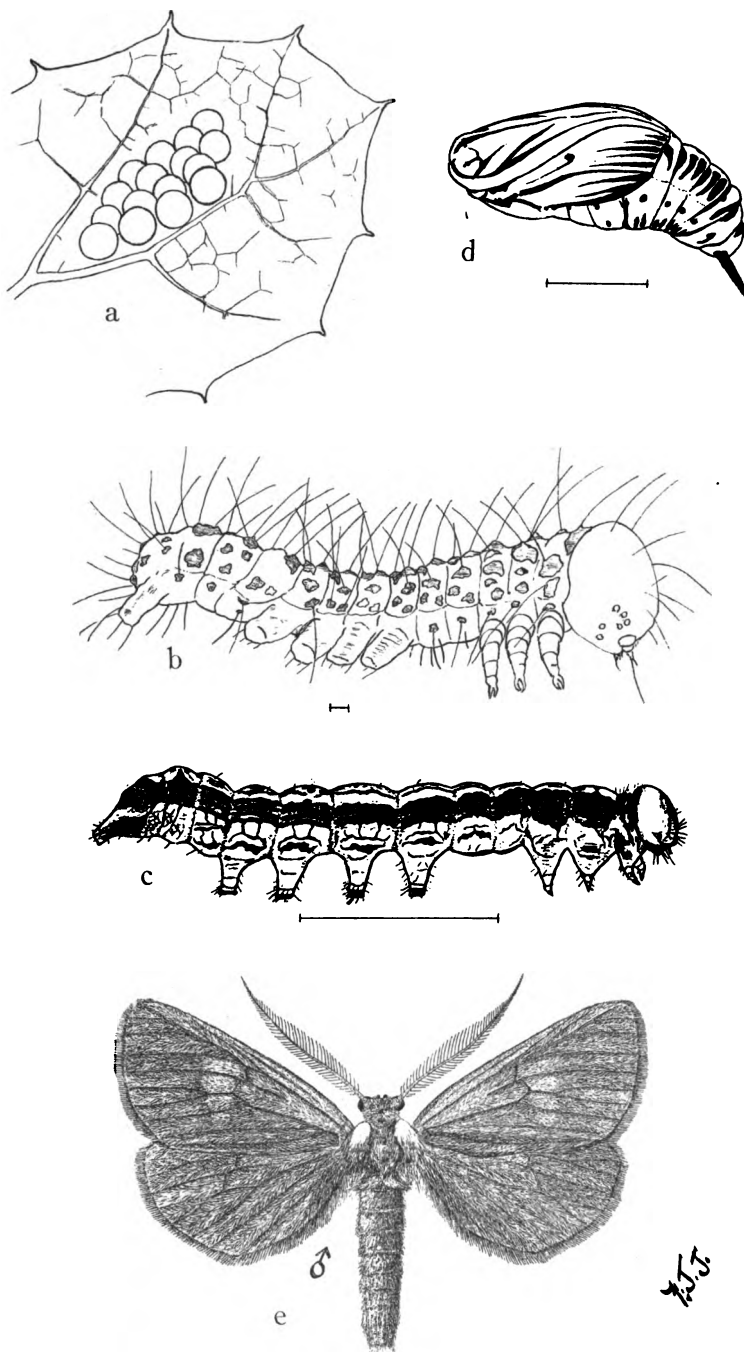
DINEMATICTHYS VENTRALIS.



SYMPHURUS WILLIAMSII.

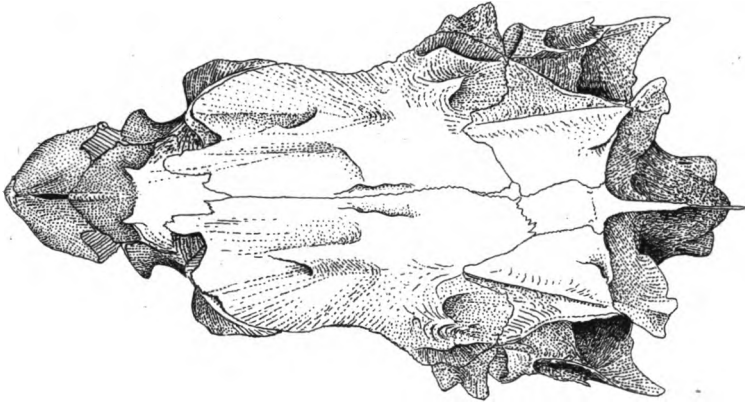
ANNA L. BROWN, DEL.

LITH. BRITTON & MASTERS.

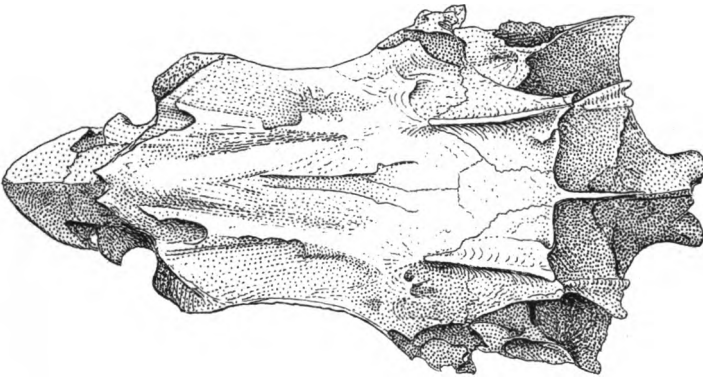


PHRYGANIDIA CALIFORNICA Pack.

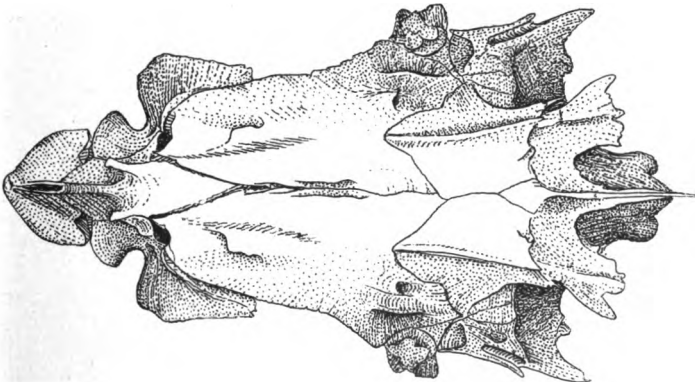
A, eggs; *B*, larva, first stage; *C*, larva, sixth stage; *D*, pupa; *E*, imago, male.



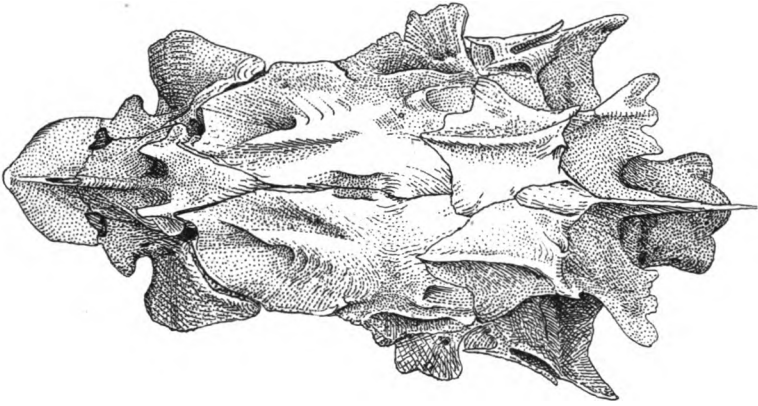
1. SEBASTODES PAUCISPINIS



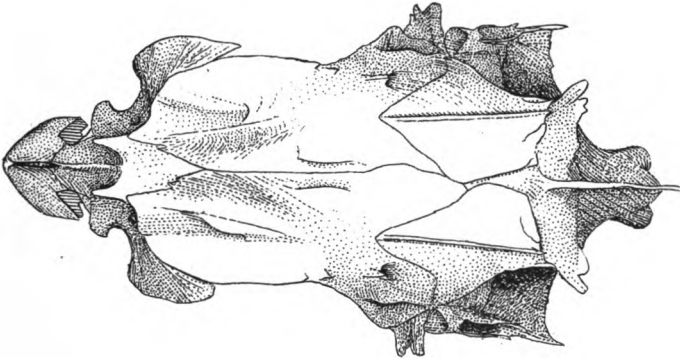
2. SEBASTODES GOODEI



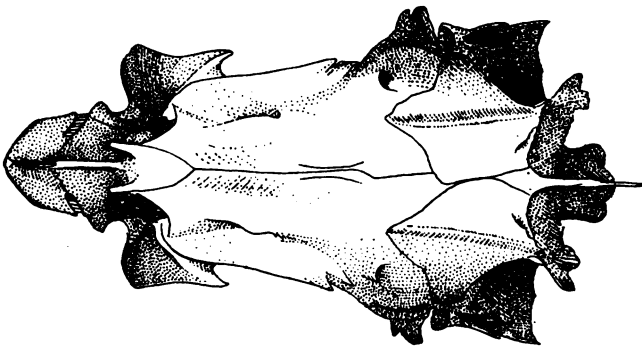
3. SEBASTODES FLAVIDUS



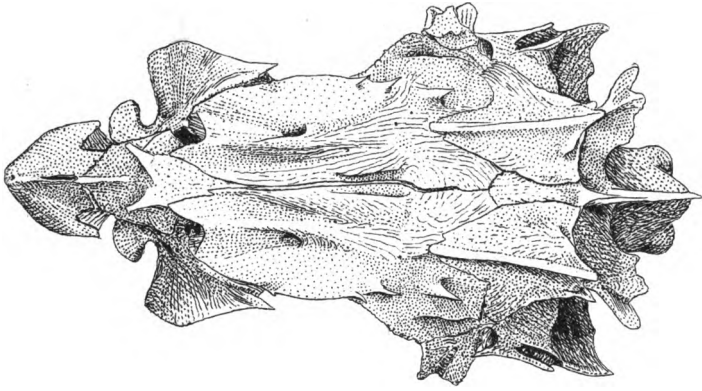
4. SEBASTODES MELANOPS



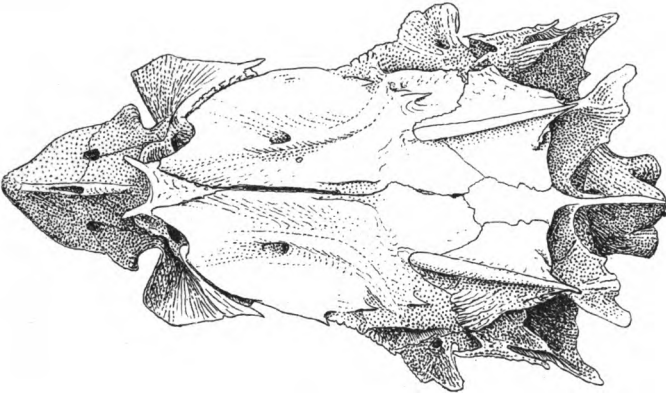
5. SEBASTODES ENTOMELAS



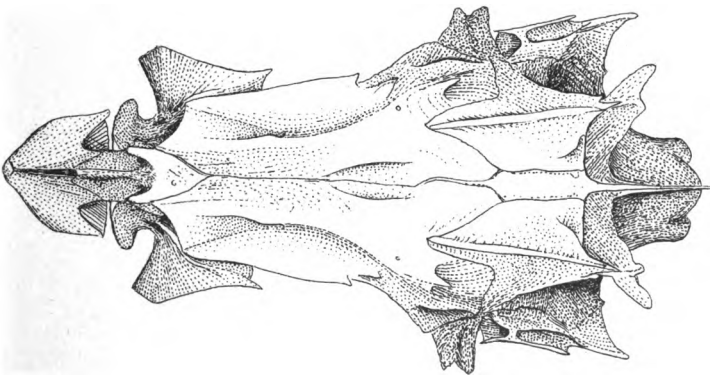
6. SEBASTODES OVALIS



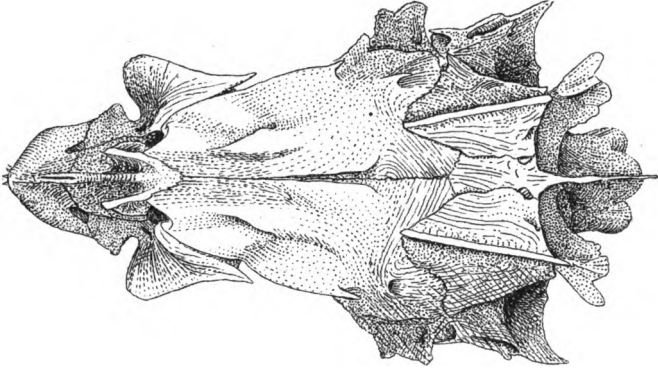
7. SEBASTODES PINNIGER



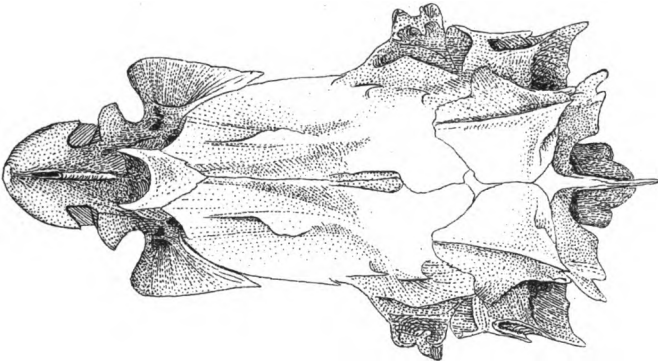
8. SEBASTODES MINIATUS



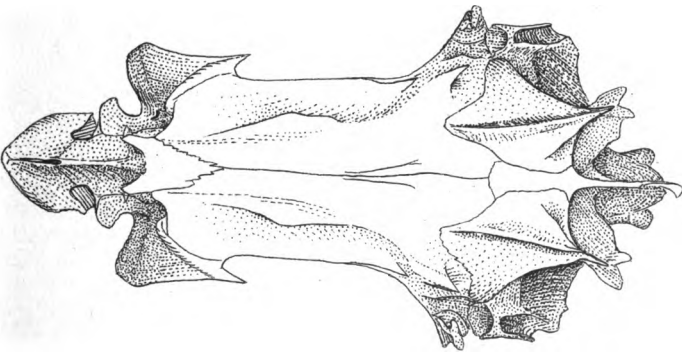
9. SEBASTODES MINIATUS



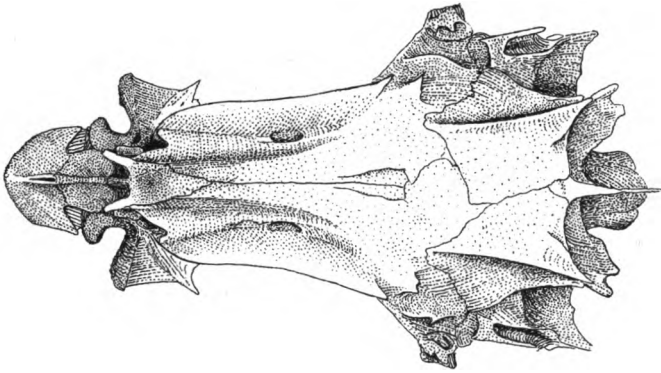
10. SEBASTODES ATROVIRENS



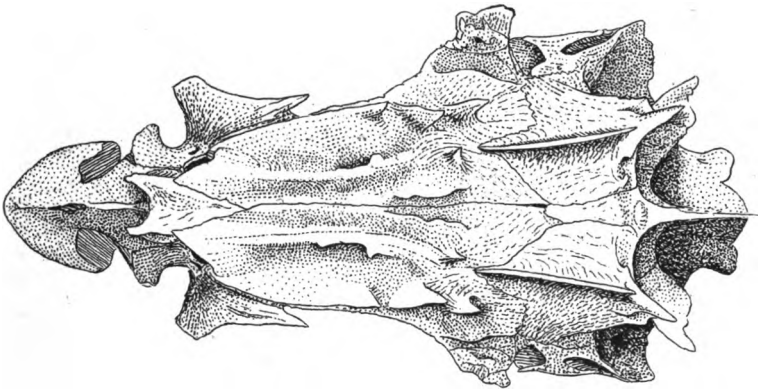
11. SEBASTODES SP. INCOG.



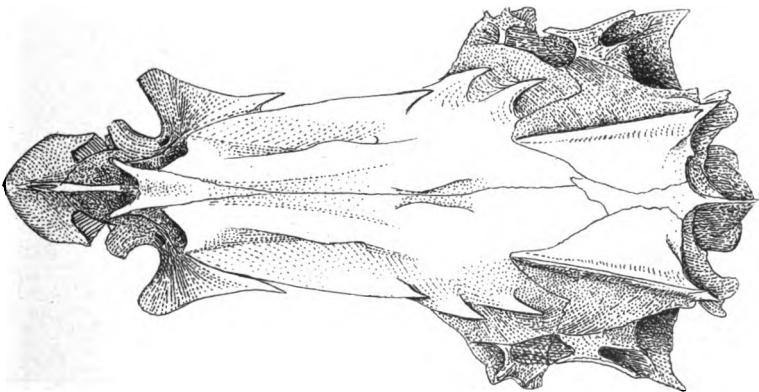
12. SEBASTODES SAXICOLA



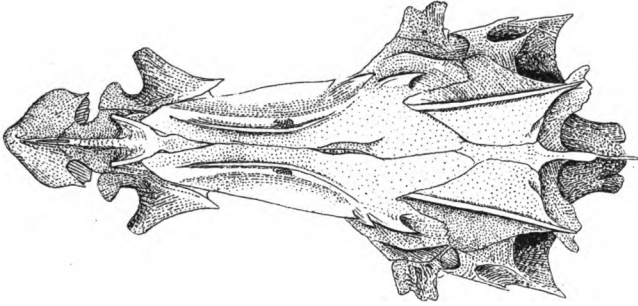
13. SEBASTODES DIPLOPROA



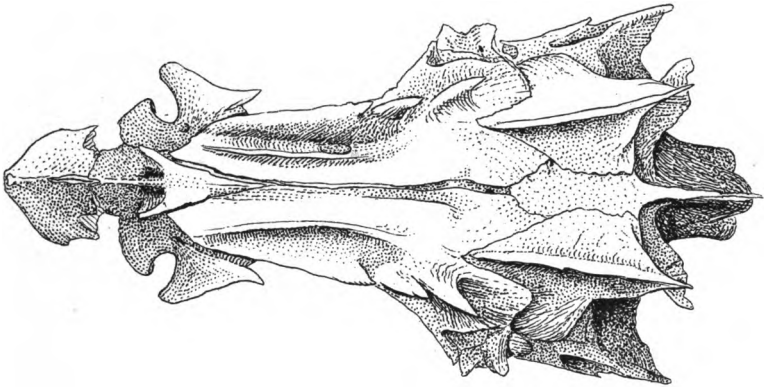
14. SEBASTODES INTRONIGER



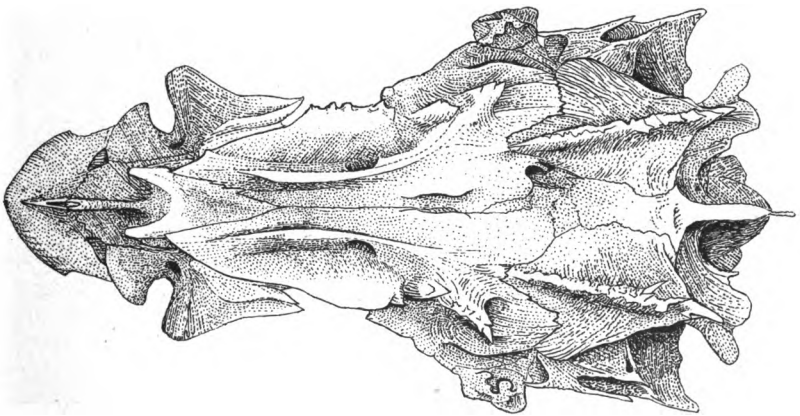
15. SEBASTODES AURORA



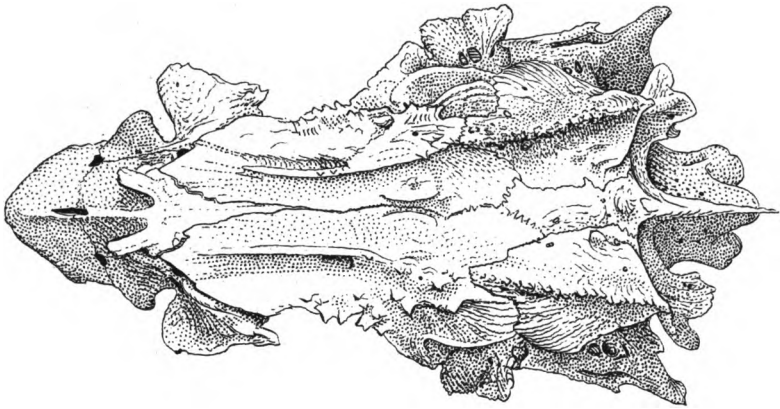
16. SEBASTODES RUBERRIMUS



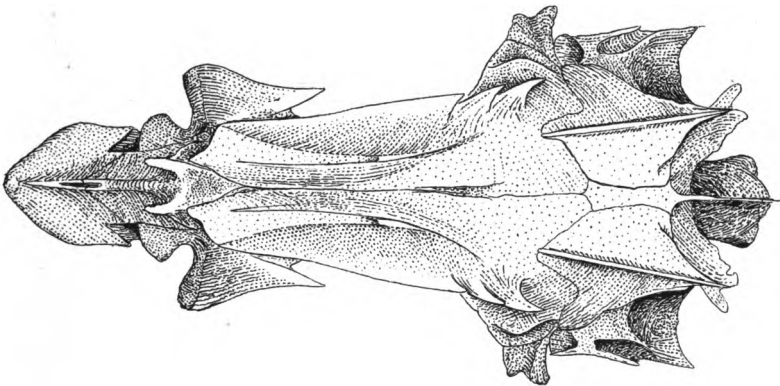
17. SEBASTODES RUBERRIMUS



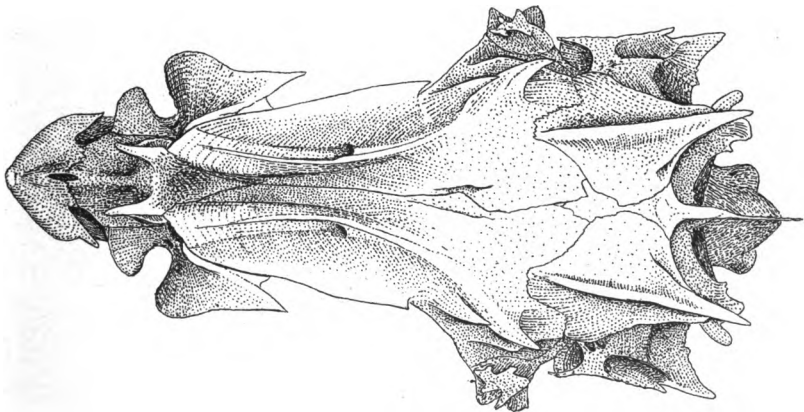
18. SEBASTODES RUBERRIMUS



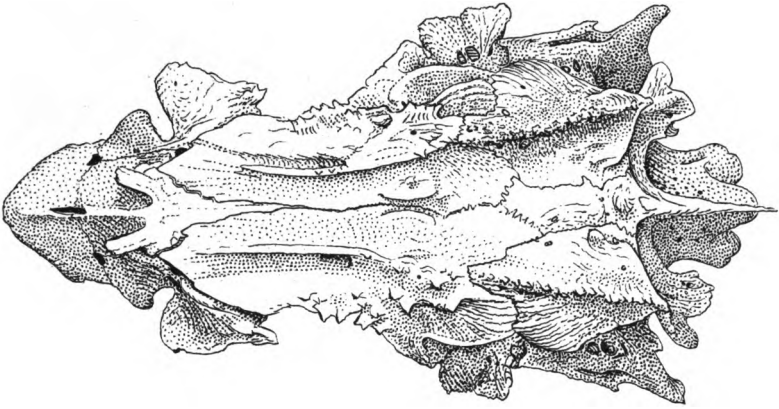
19. SEBASTODES RUBERRIMUS



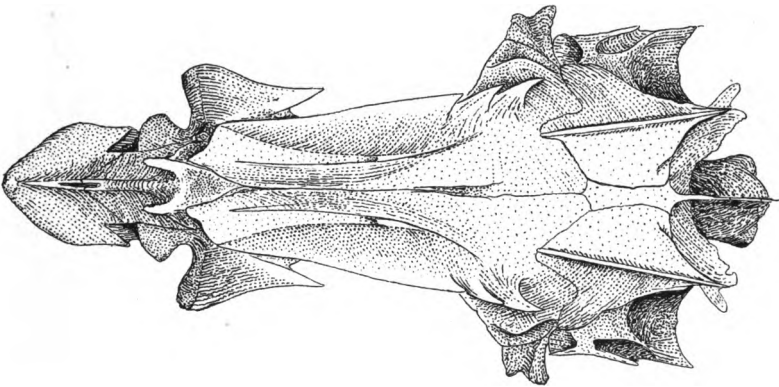
20. SEBASTODES ROSACEUS



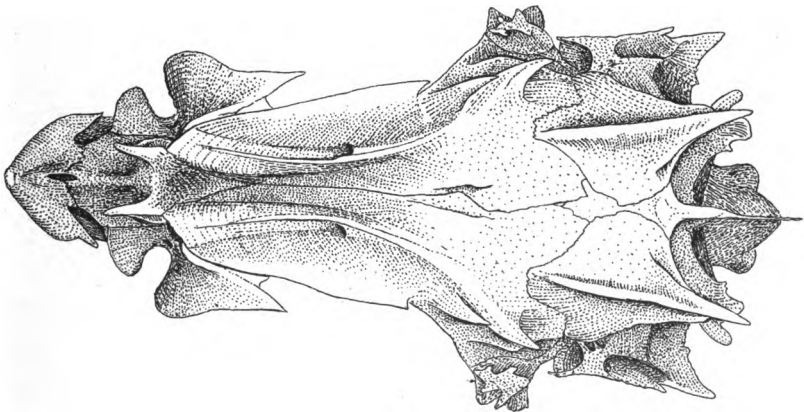
21. SEBASTODES CHLOROSTICTUS



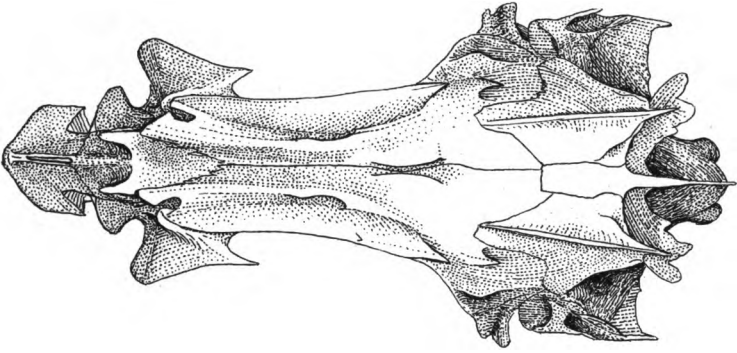
19. SEBASTODES RUBERRIMUS



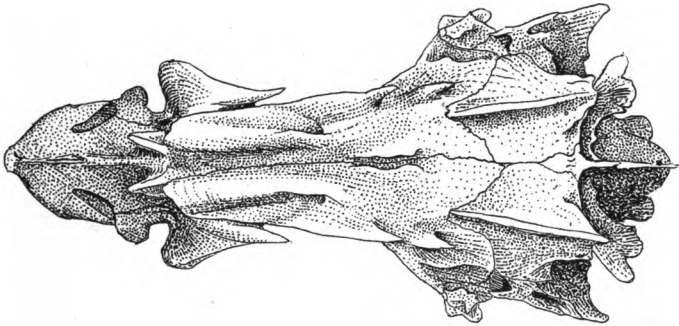
20. SEBASTODES ROSACEUS



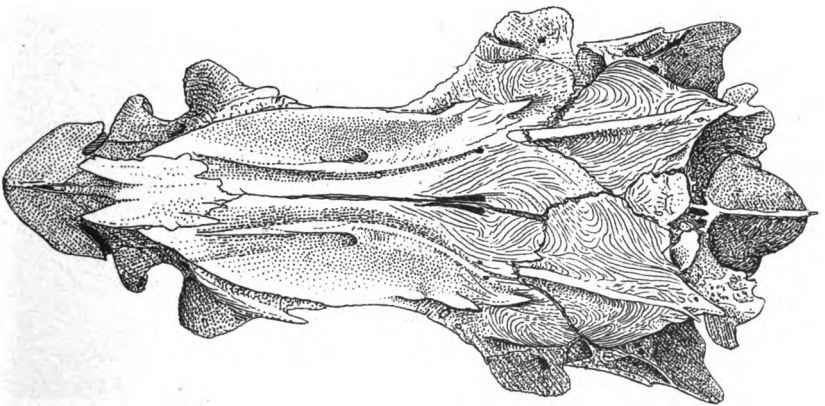
21. SEBASTODES CHLOROSTICTUS



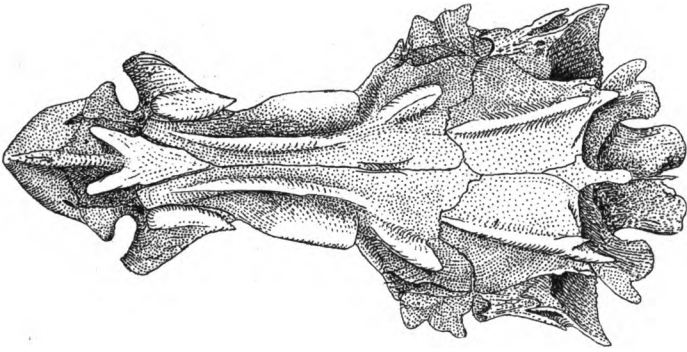
22. SEBASTODES ELONGATUS



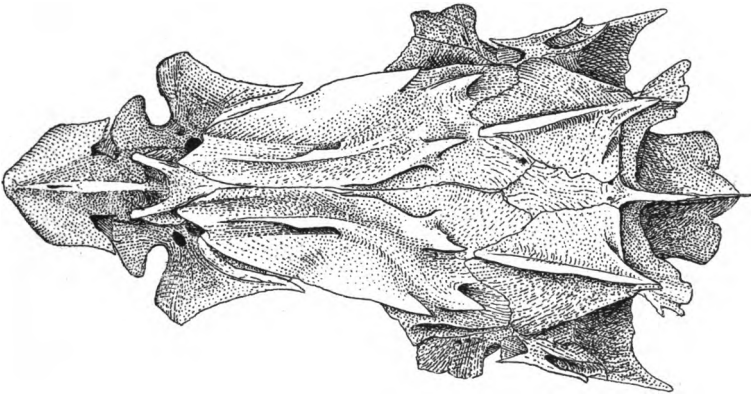
23. SEBASTODES RUBRIVINCTUS



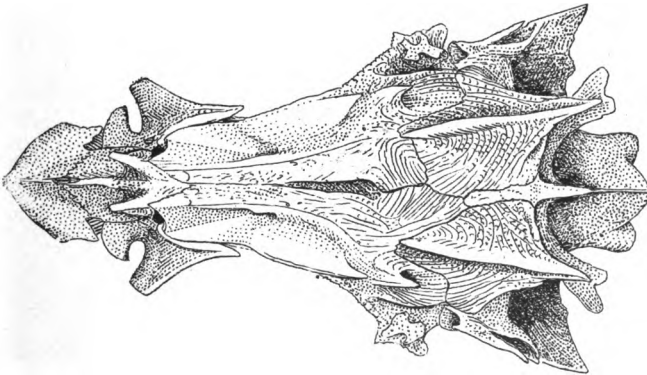
24. SEBASTODES LEVIS



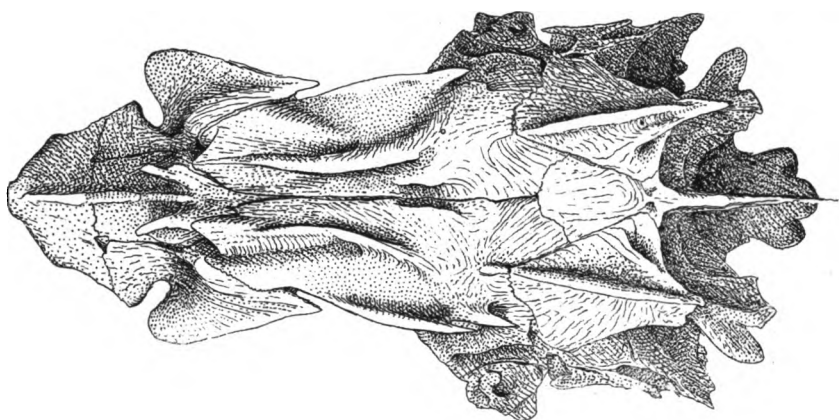
25. SEBASTODES SERRICEPS



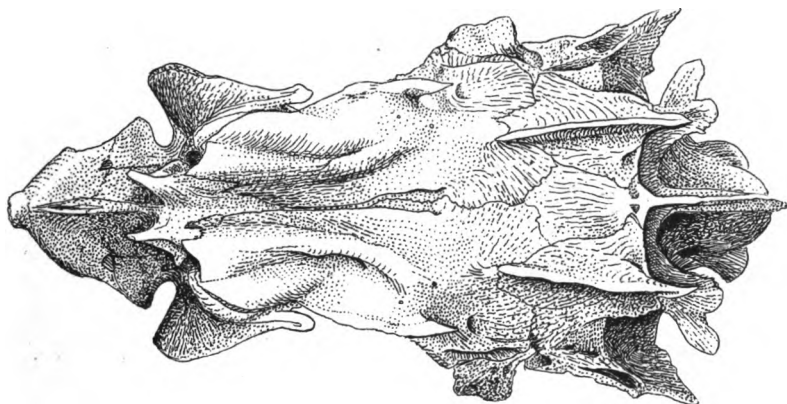
26. SEBASTODES AURICULATUS



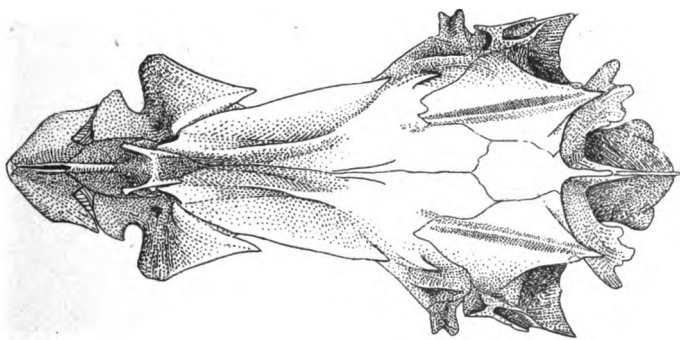
27. SEBASTODES RASTRELLIGER



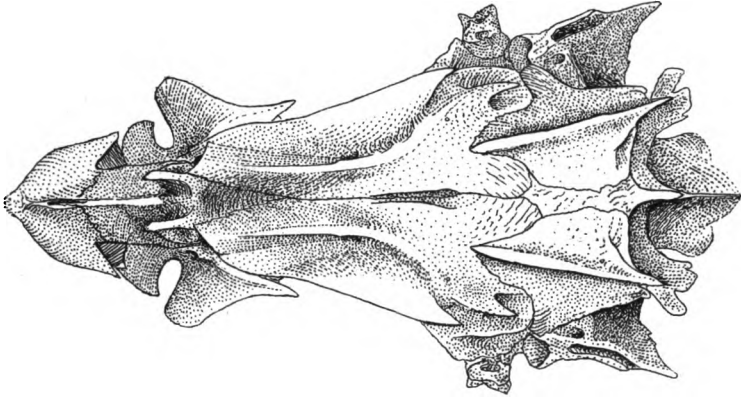
28. SEBASTODES VEXILLARIS



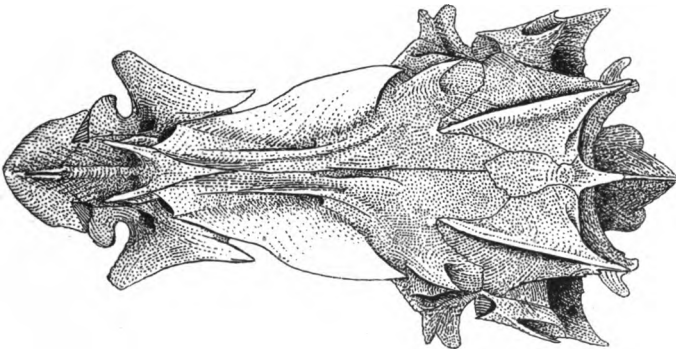
29. SEBASTODES VEXILLARIS



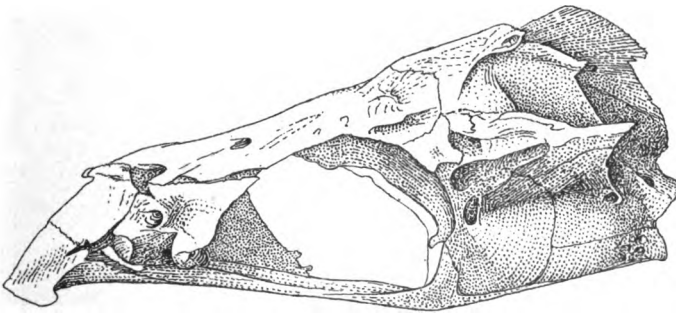
30. SEBASTODES MALIGER



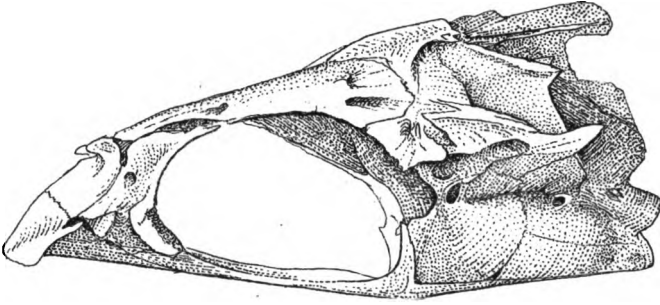
31. SEBASTODES MALIGER



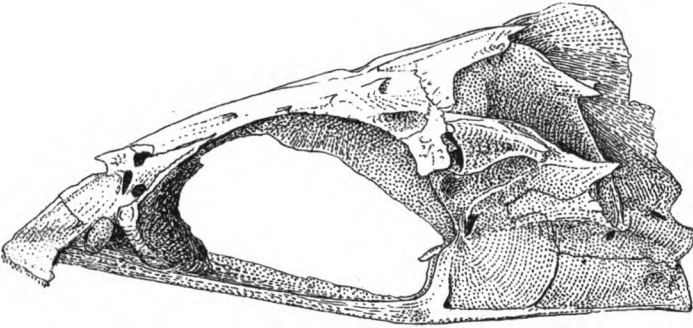
32. SEBASTODES NEBULOSUS



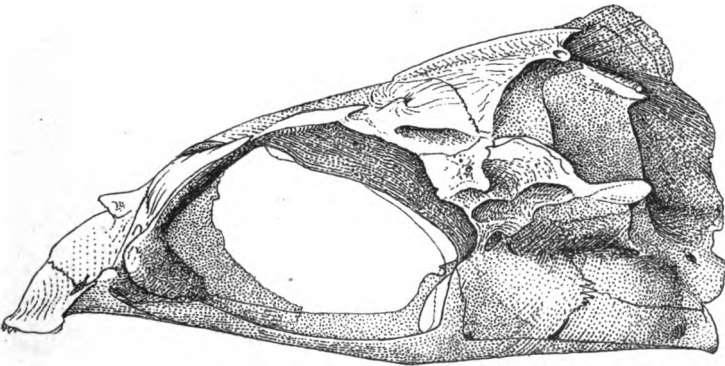
33. SEBASTODES PAUCISPINIS



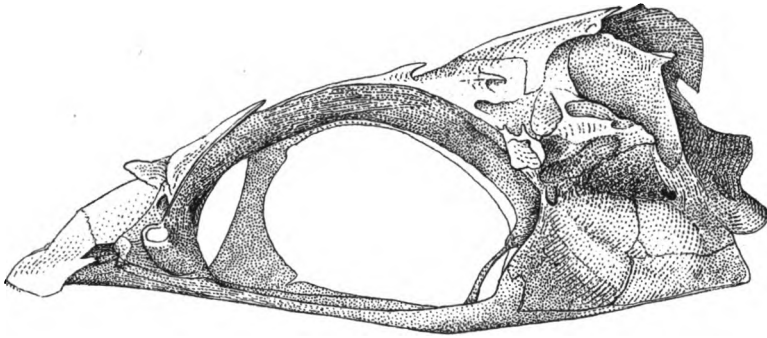
34. SEBASTODES FLAVIDUS



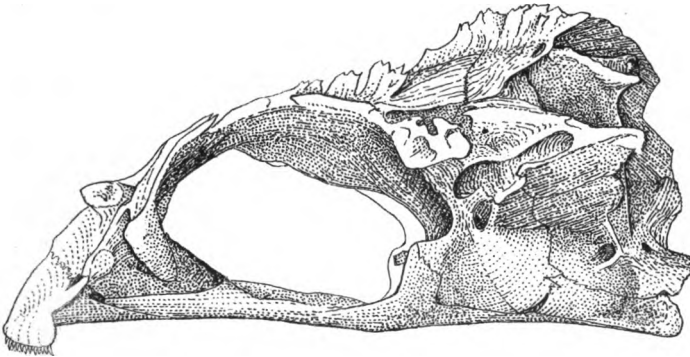
35. SEBASTODES MINIATUS



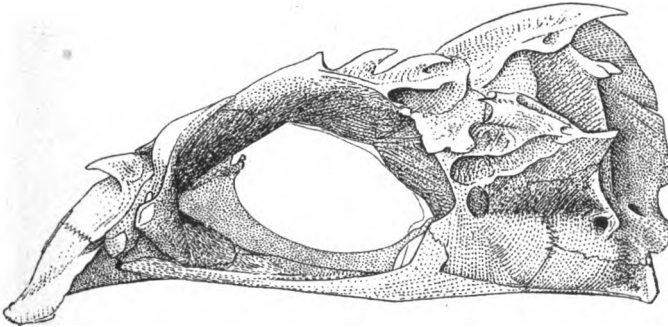
36. SEBASTODES ATROVIRENS



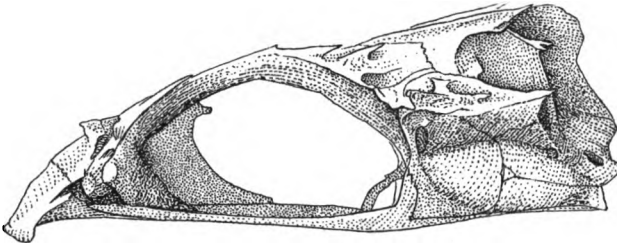
37. SEBASTODES SAXICOLA



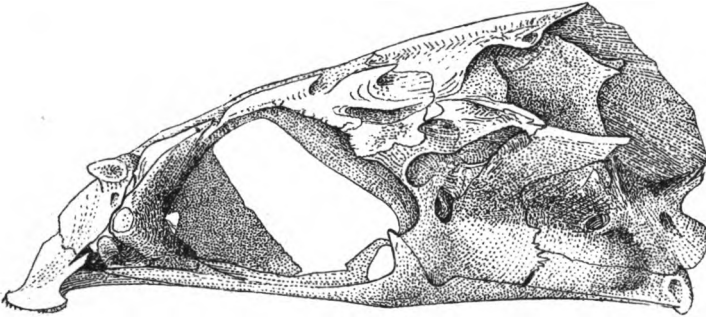
38. SEBASTODES RUBERRIMUS



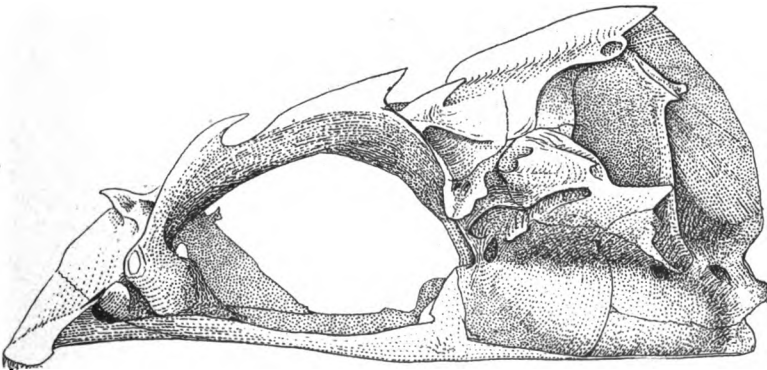
39. SEBASTODES CHLOROSTICTUS



40. SEBASTODES ELONGATUS



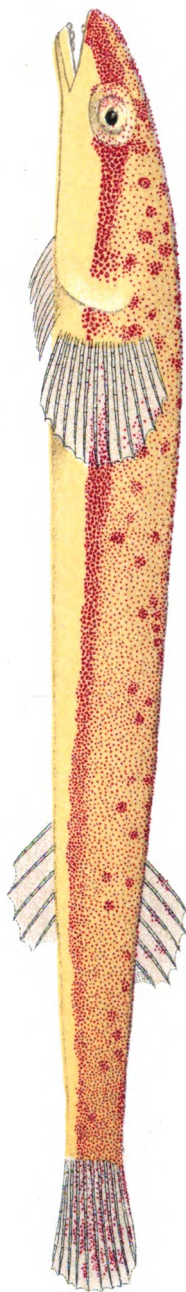
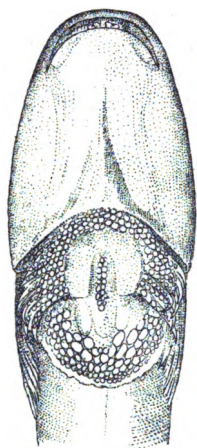
41. SEBASTODES RASTRELLIGER



42. SEBASTODES NEBULOSUS

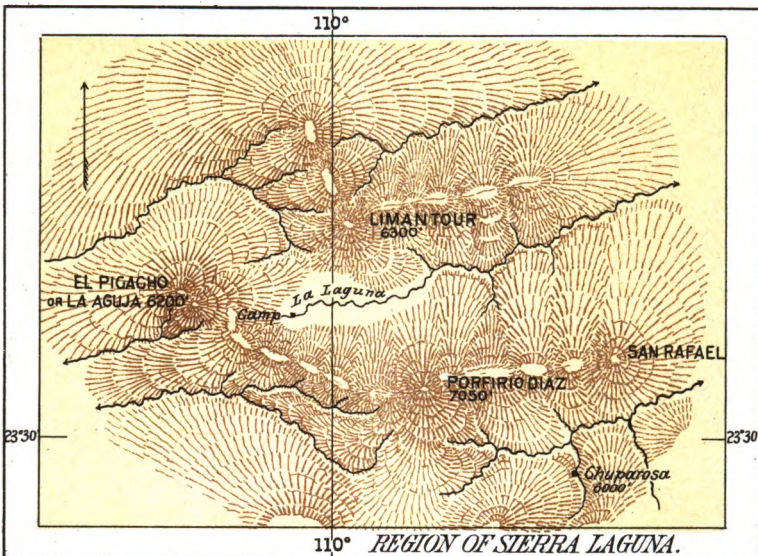
Anna L. Brown, Del.

GOBIESOX MUSCARUM

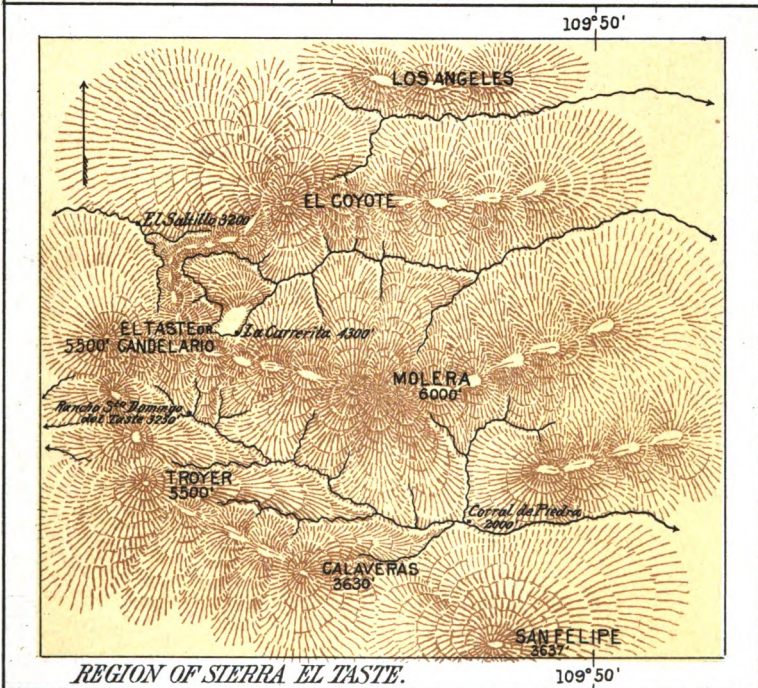


LITH. BOUTON & ASS. LOS

PHOTO-LITH. BRITTON & KEY S.F. CAL.



110° REGION OF SIERRA LAGUNA.

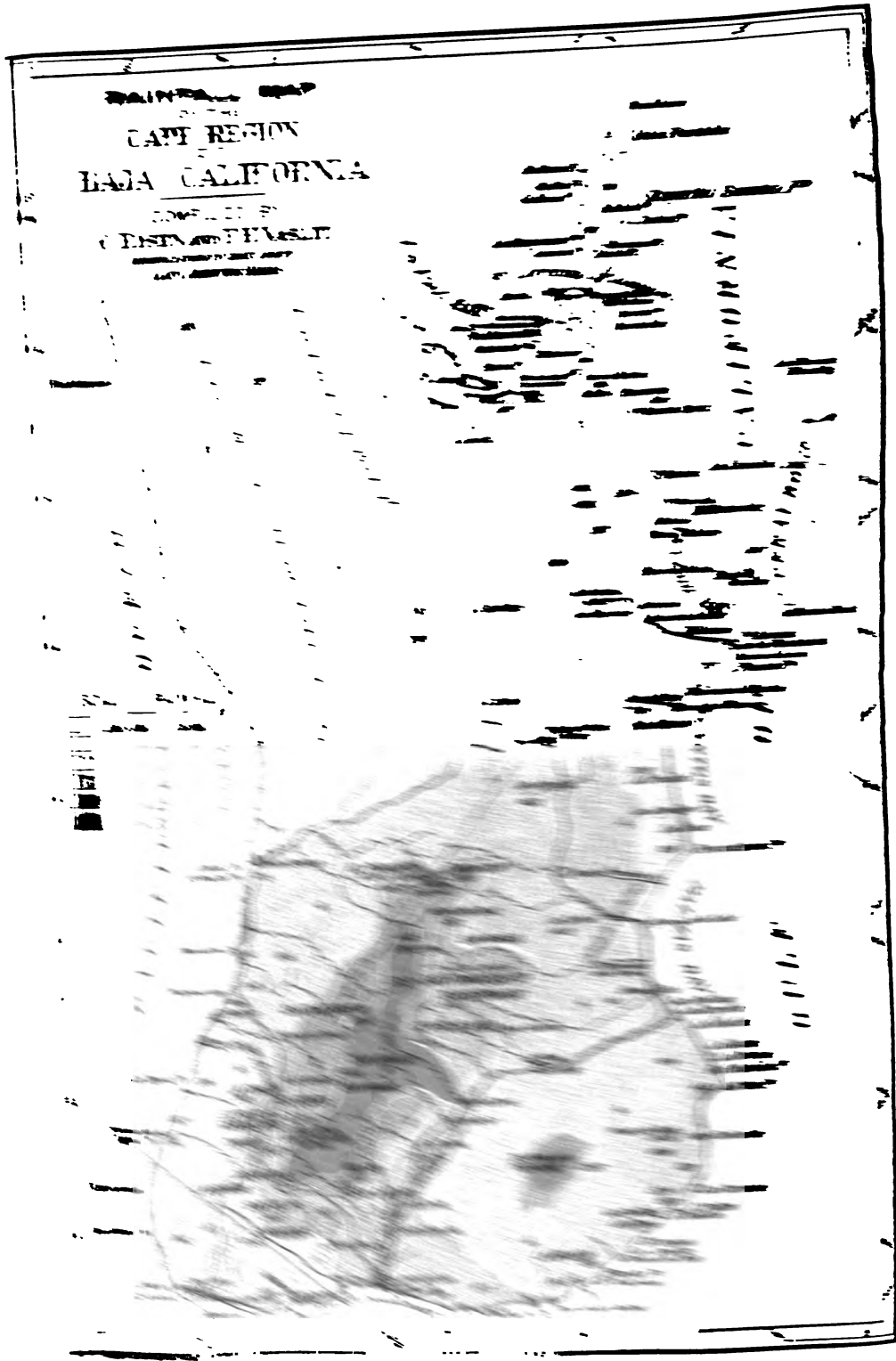


REGION OF SIERRA EL TASE.

PHOTO. LITH. BRITTON & REY, S.F.

15A
i

RAILROAD MAP
OF THE
CAPITOL REGION
BADA CALIFORNIA
COMPILED BY
C. DISTANCE
PUBLISHED BY THE
RAILROAD COMMISSION

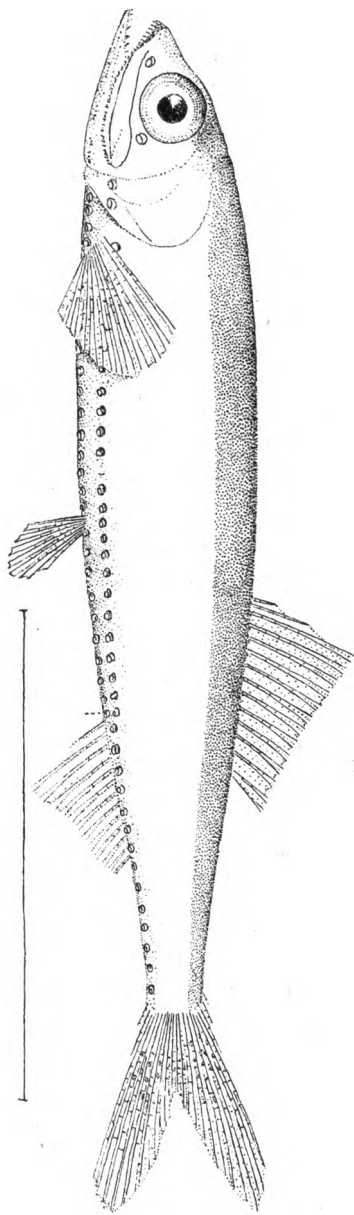


COMPILED BY
G. EISEN AND F. H. VASLIT
NOMENCLATURE OF COAST LINE BY
CAPT. JOHN VON HELMS



COMPILED BY
G. EISEN AND F. H. VASLIT
NOMENCLATURE OF COAST LINE BY
CAPT. JOHN VON HELMS

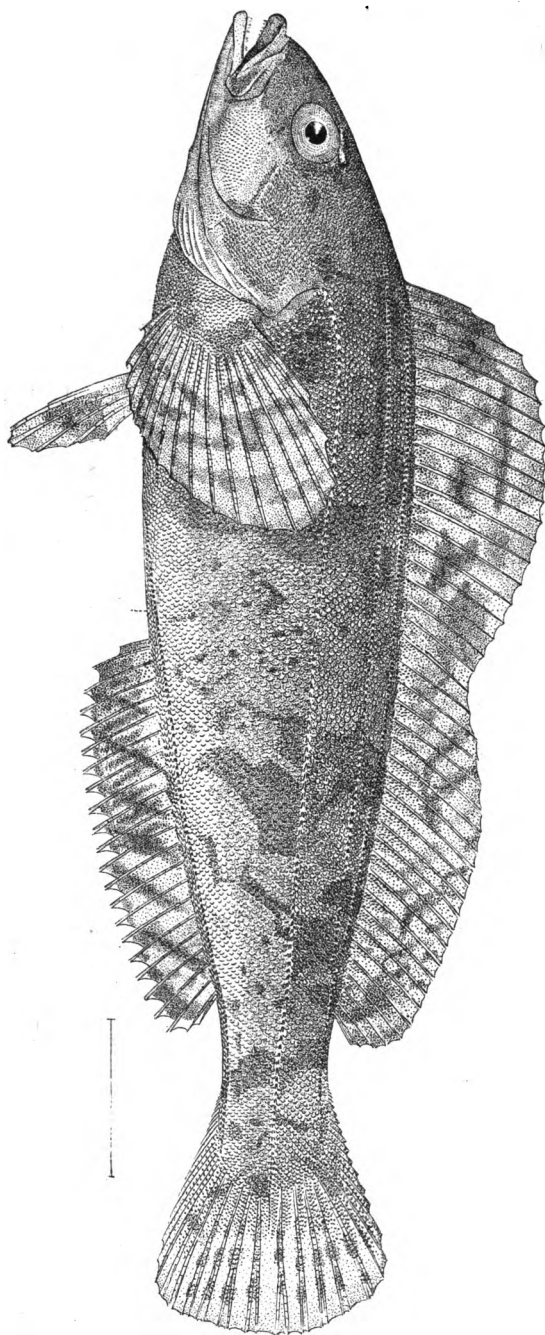




ZALARGES NIMBARIUS

ANNA L. BROWN DEL.

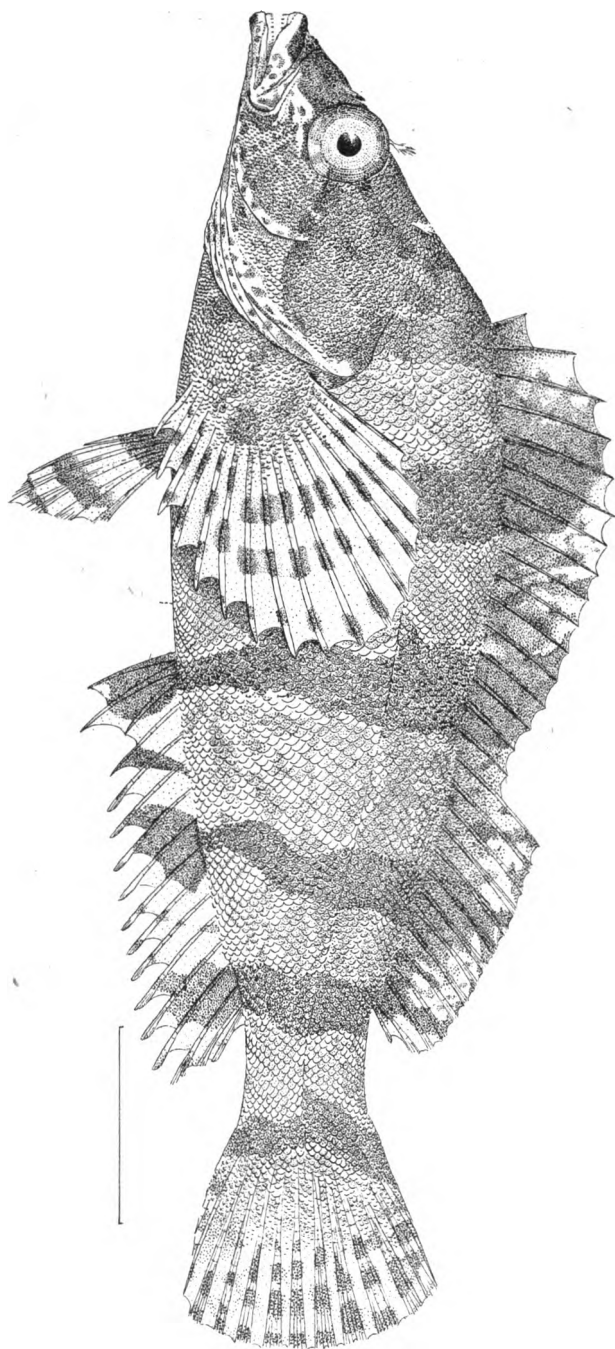
LITH. BRITTON & REY, SF.



HEXAGRAMMUS OTAKII

ANDR. L. BROWN, DEL.

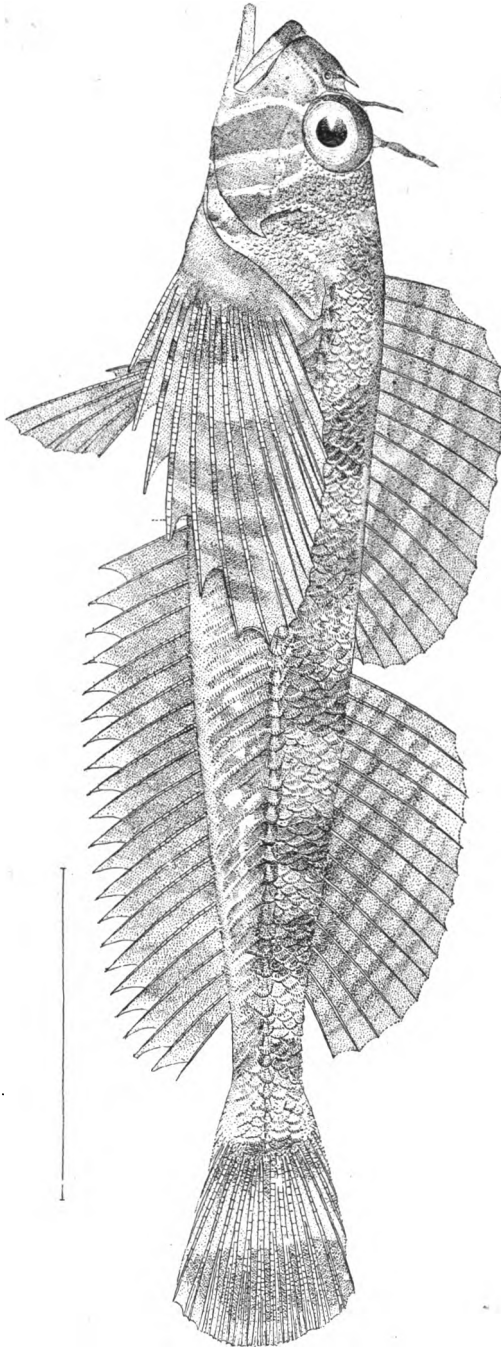
LITH. BRITTON & REY, S.F.



OXYLEBIUS PICTUS

ANNA L. BROWN, DEL.

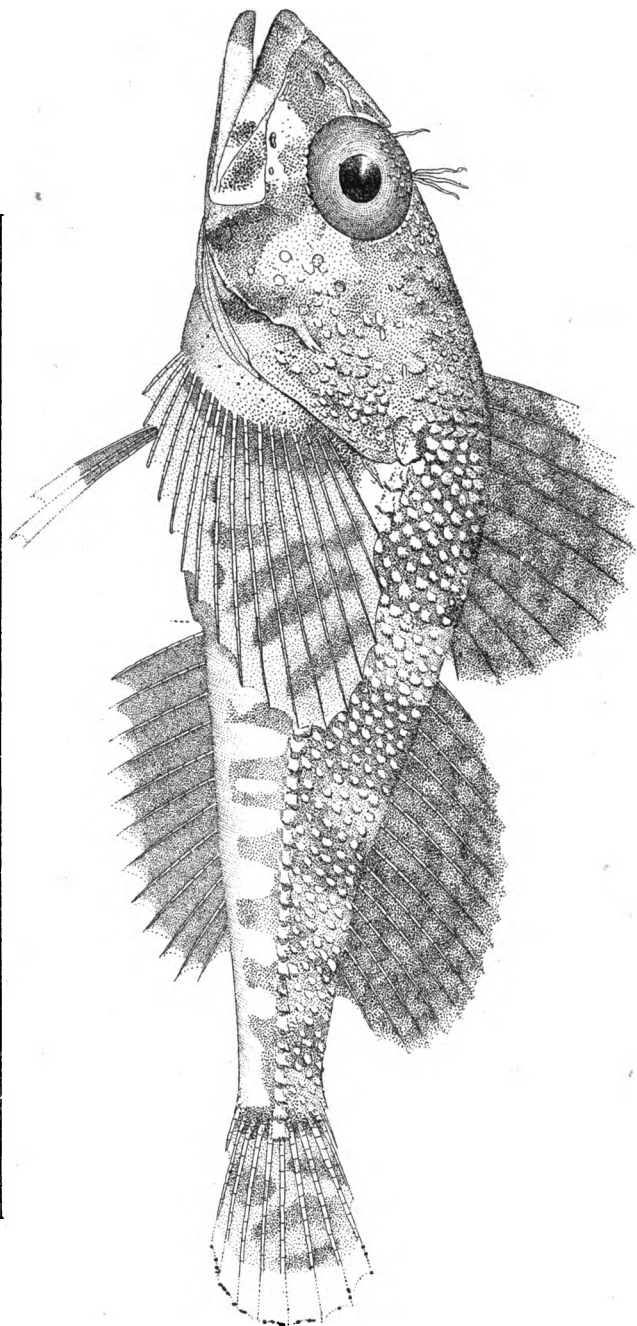
LITH. BRITTON & REY, S.F.



ANNA L. BROWN, DEL.

JORDANIA ZONOPE

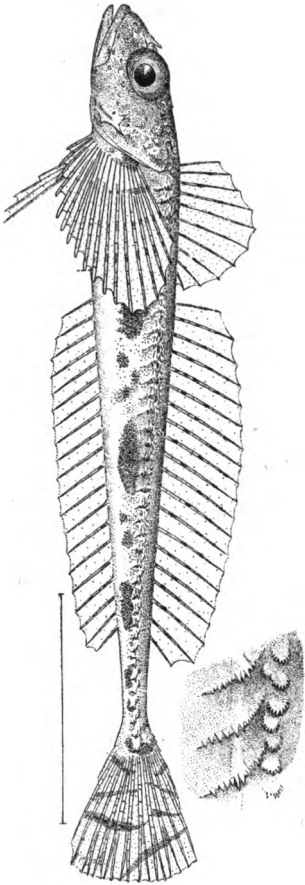
LITH. BRITTON & REED, S.F.



RUSCARIUS MEANYI

ANNA L. BROWN, DEL.

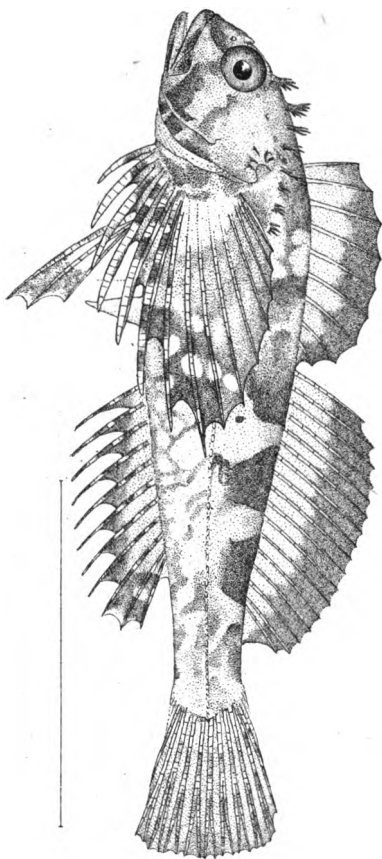
LITH. BRITTON & PERRY, SR.

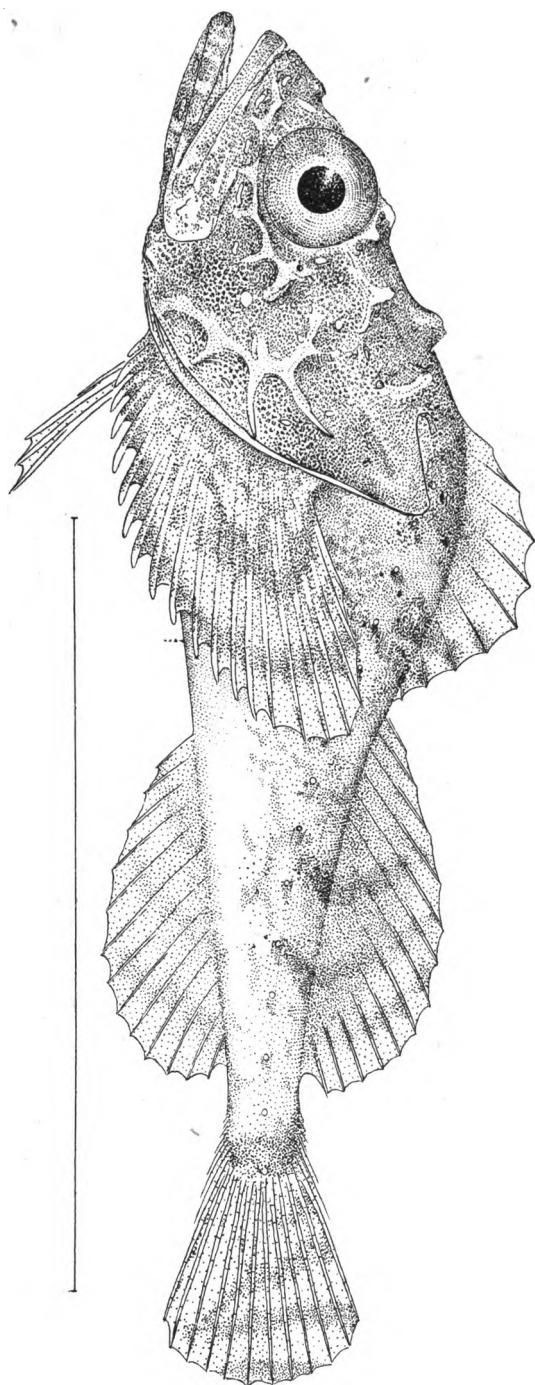


ANDREA L. BROWN, DEL.

RADULINUS ASPRELLUS

LITH. BRITTON & MEYER, S.F.

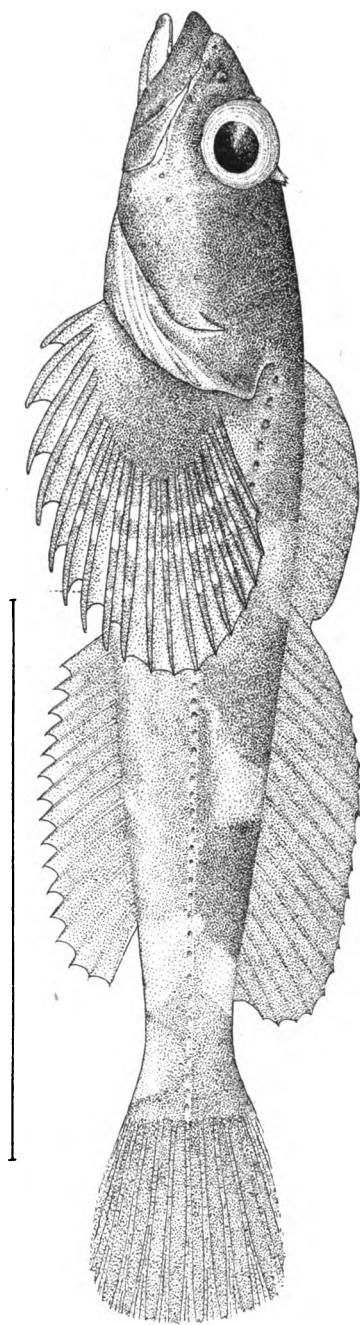




DASYCOTTUS SETIGER

ANDERSON DEL.

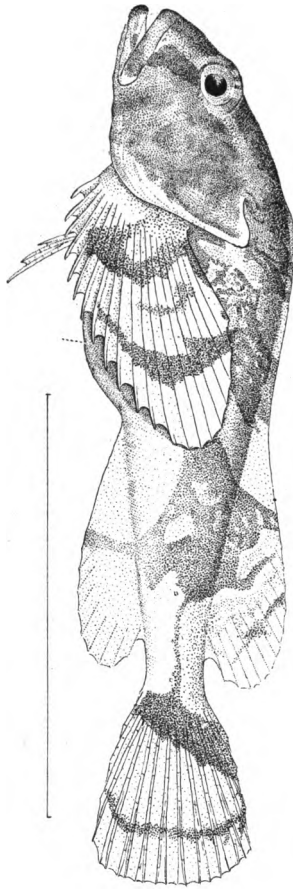
LITH. BRITTON & REY. S.F.



ASCELICHTHYS RHODORUS

ANNA L. BROWN, DEL.

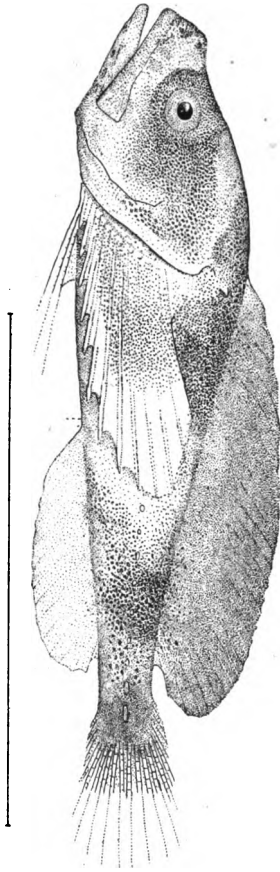
LITH. BRITTON & REY, SF.



PSYCHROLUTES ZEBRA

ANDREA L. BROWN, DEL.

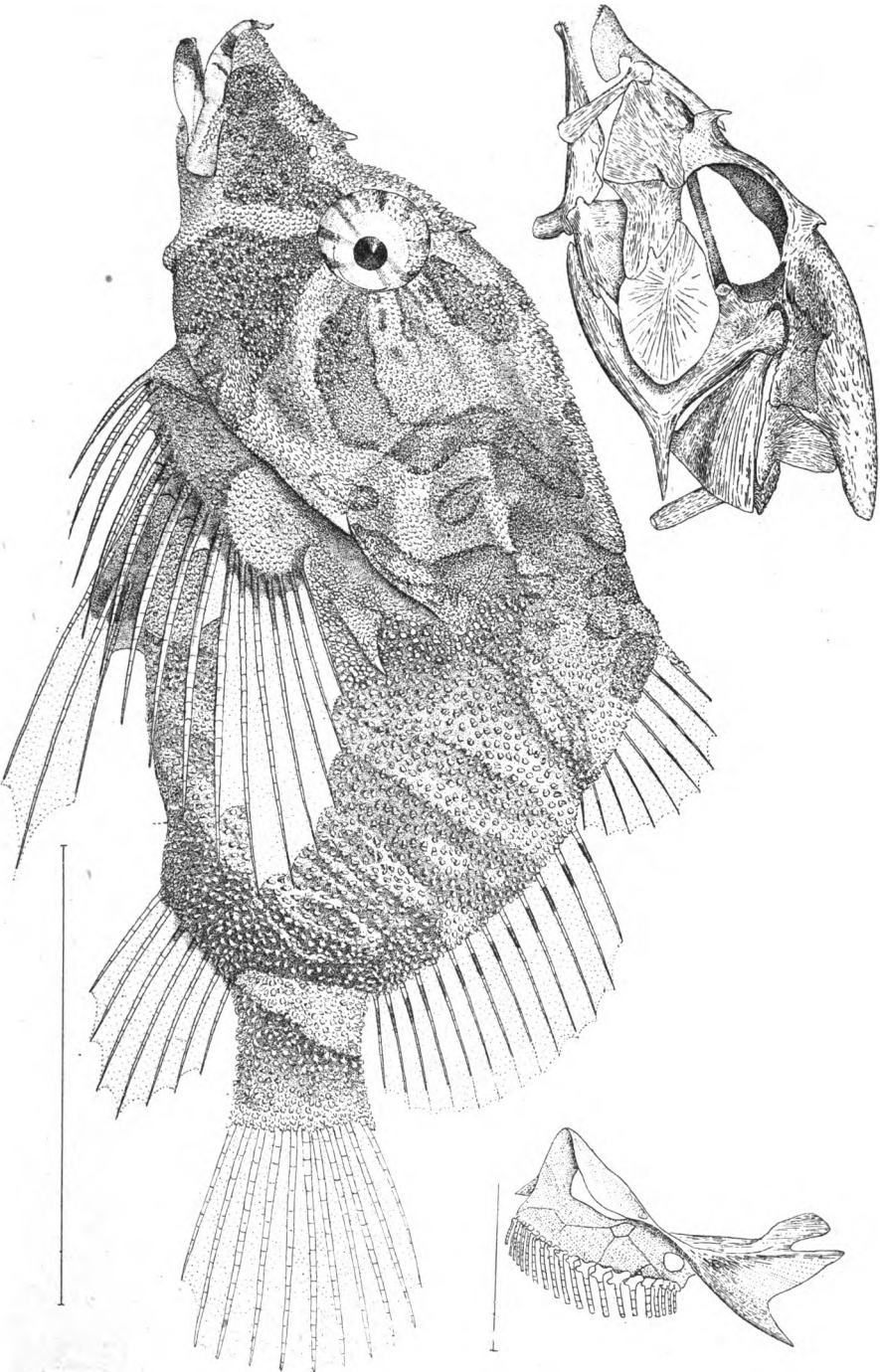
LITH. BRITTON & FISK, SF.



GILBERTINA SIGALUTES

ANNA L. BROWN, DEL.

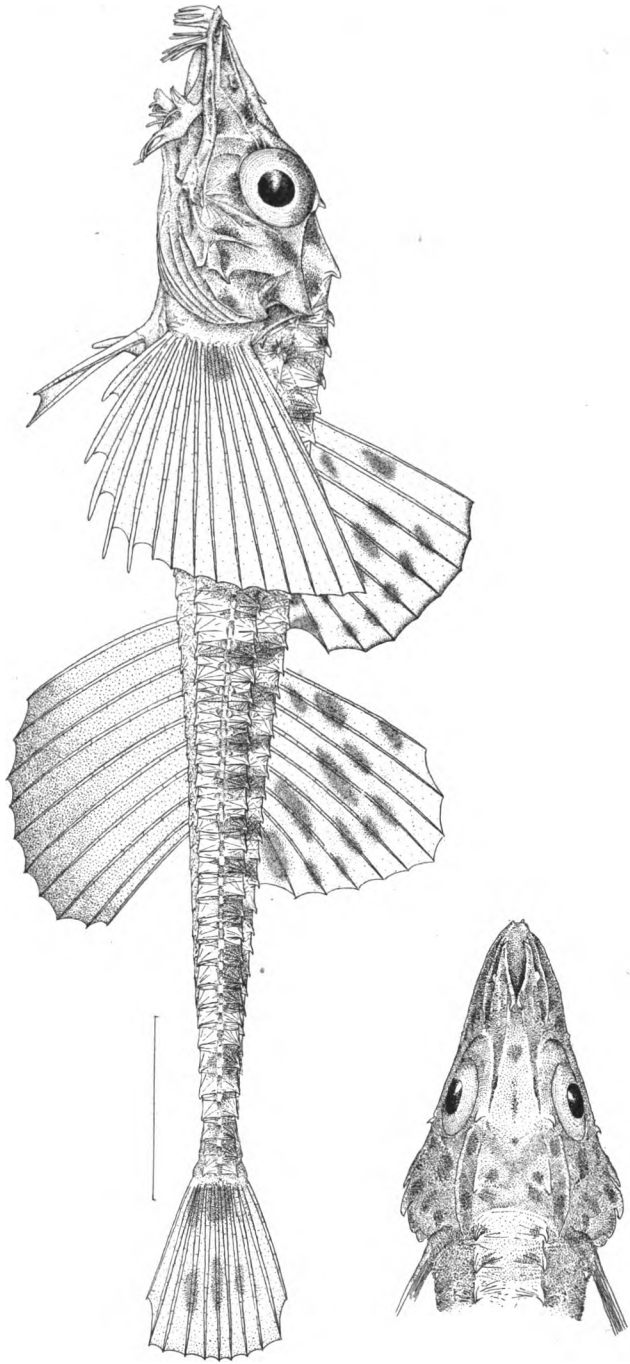
LITH. BRITTON & BRY, S.F.



RHAMPHOCOTTUS RICHARDSONI

ANNA L. BROWN, DEL.

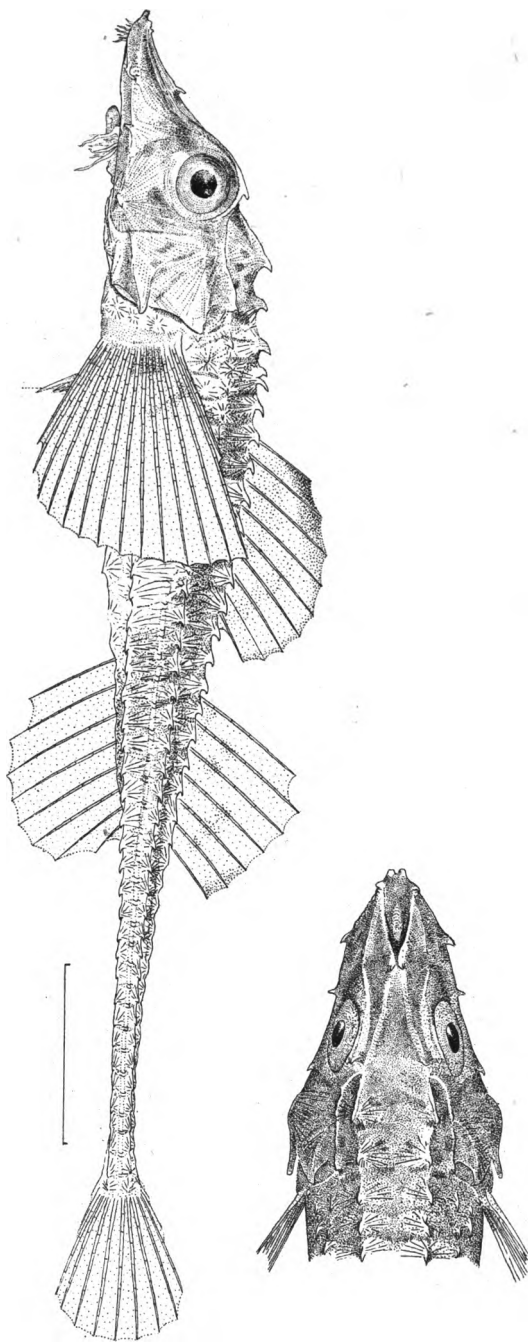
LITH. BRITTON & REY, S.F.



PODOTHECUS ACCIPITER

ANNA L. BROWN, DEL.

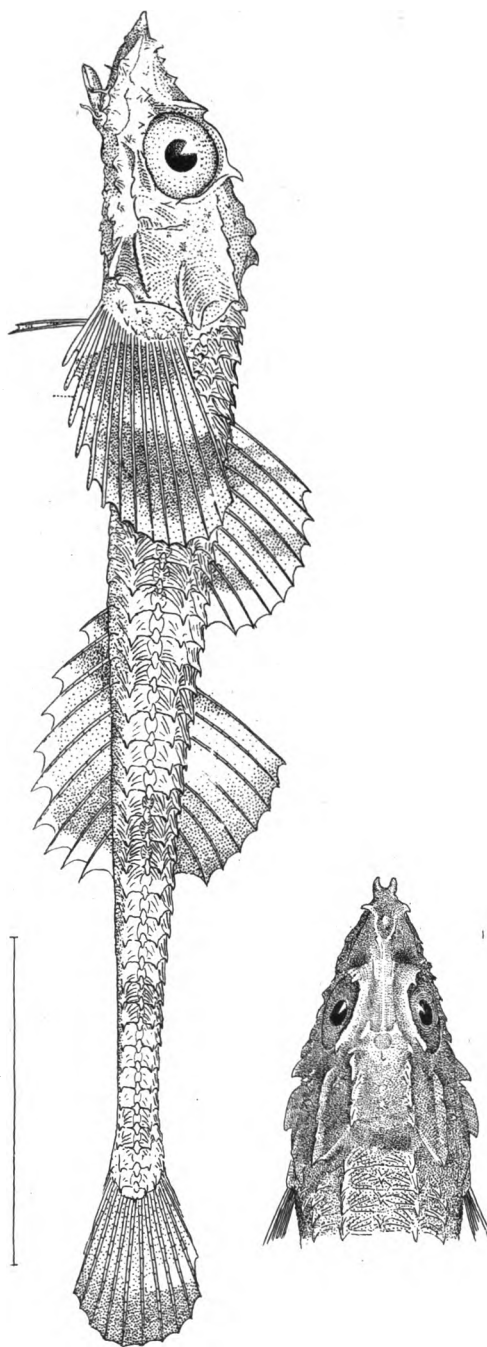
LITH. BRITTON & RAY, S.F.



PODOTHECUS VETERNUS

ANDREA L. BROWN, DEL.

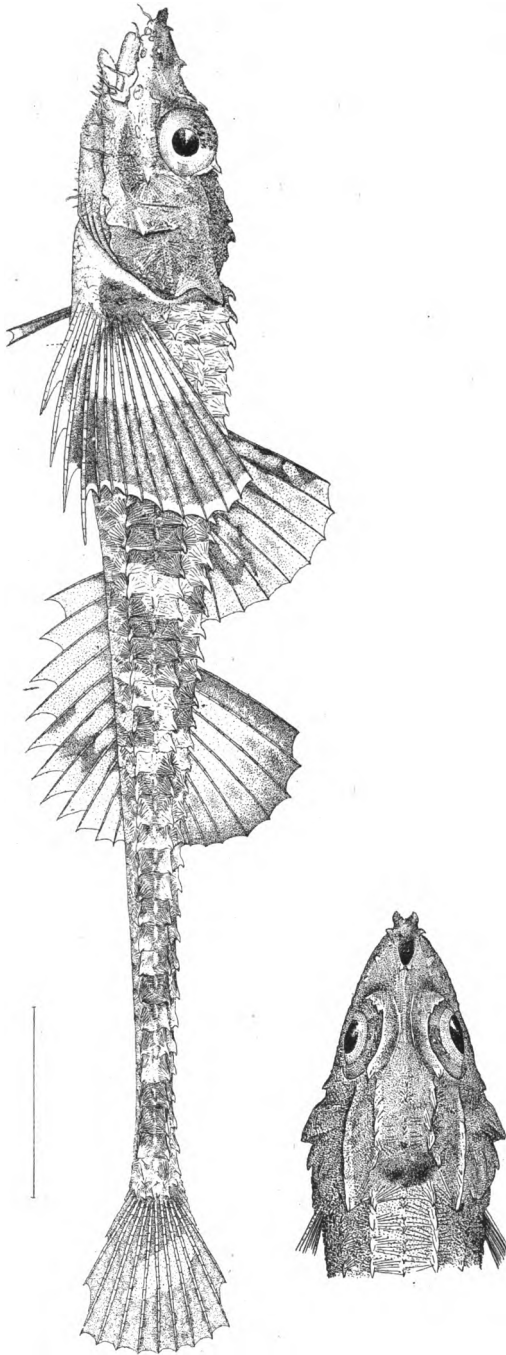
LITH. BURTON & FRY, SF.



STELGIS VULSUS

ANNA L. BROWN, DEL.

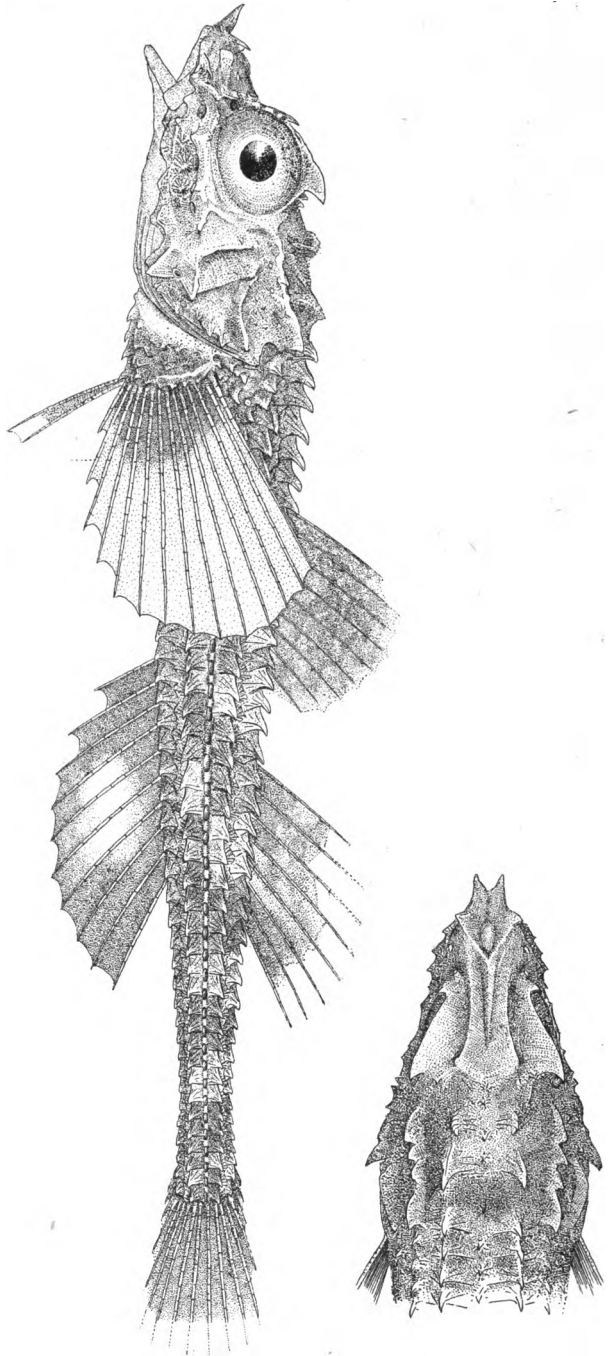
LITH. BRITTON & BRY, S.F.



AVERRUNCUS EMMELANE

ANNA L. BROWN, DEL.

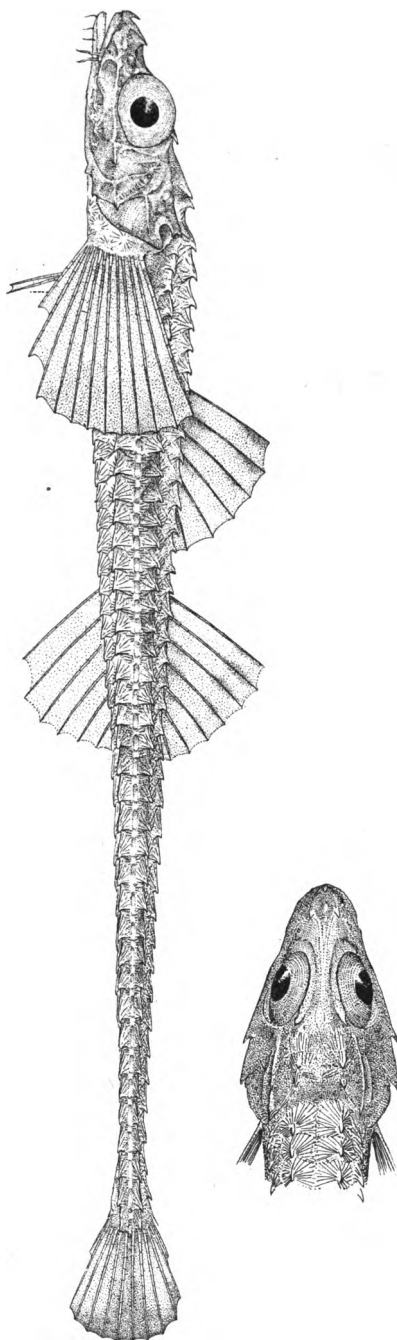
LITH. BRITTON & ROY, SF.



XYSTES AXINOPHRYS

ANNA L. FERGUSON, DEL.

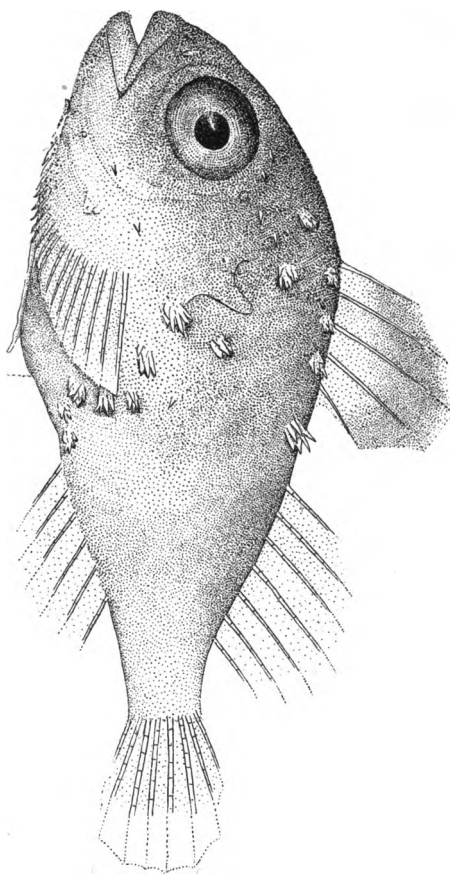
LITH. BRITTON & REY, S.F.



ANDREA L. BROWN, DEL.

XENOCHIRUS TRIACANTHUS

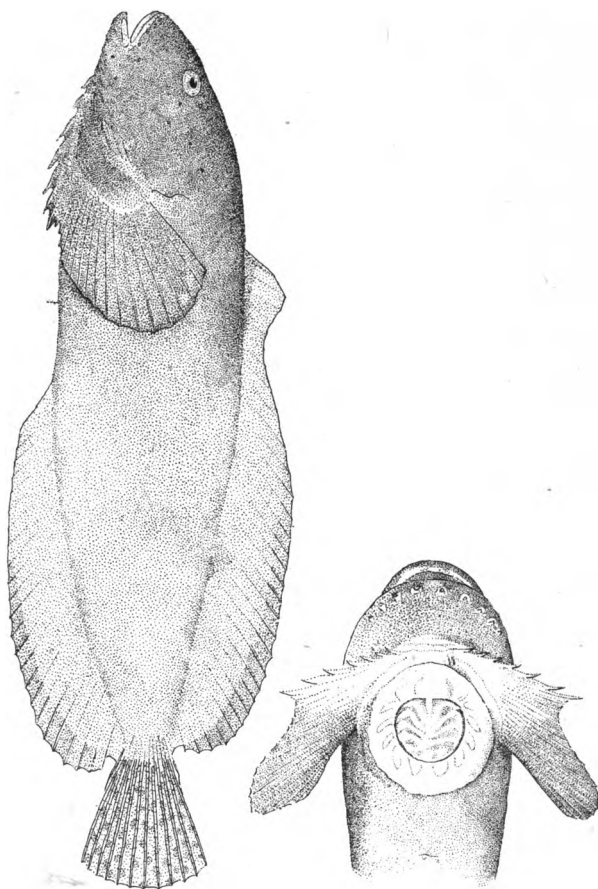
LITH. BRITTON & REY, S.F.



ANNA L. BROWN, DEL.

LETHOTREMUS VINOLENTUS

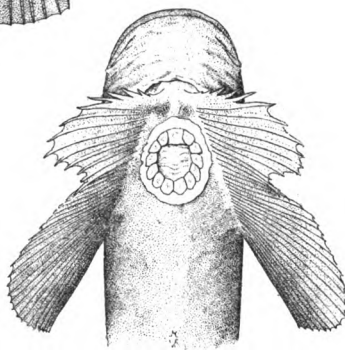
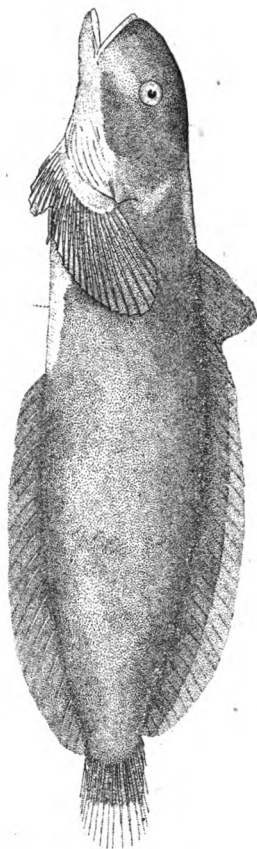
L. T. BRITTON & RAY, SAN



NEOLIPARIS GREENI



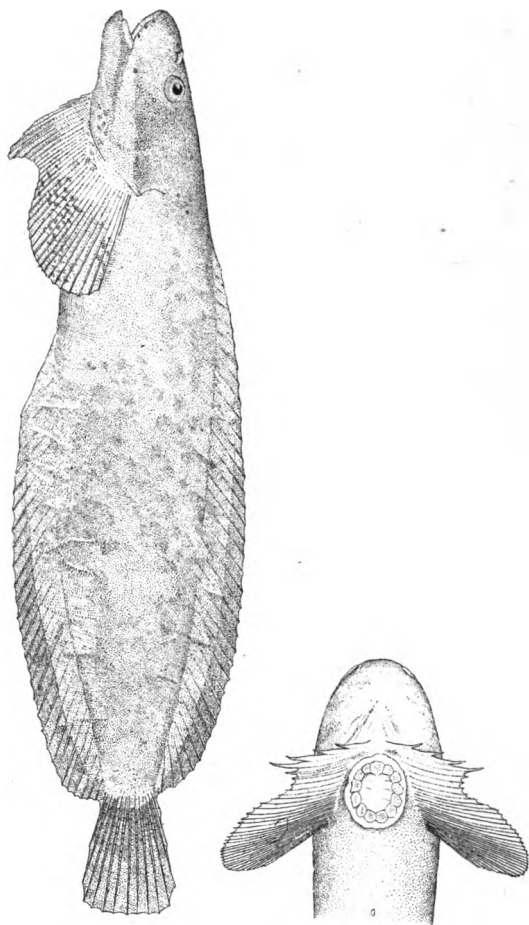
NEOLIPARIS FLORÆ



NEOLIPARIS GREENI

ANNA L. BROWN DEL.

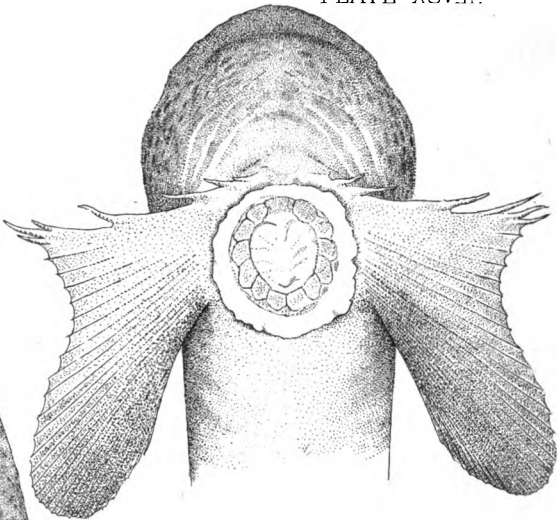
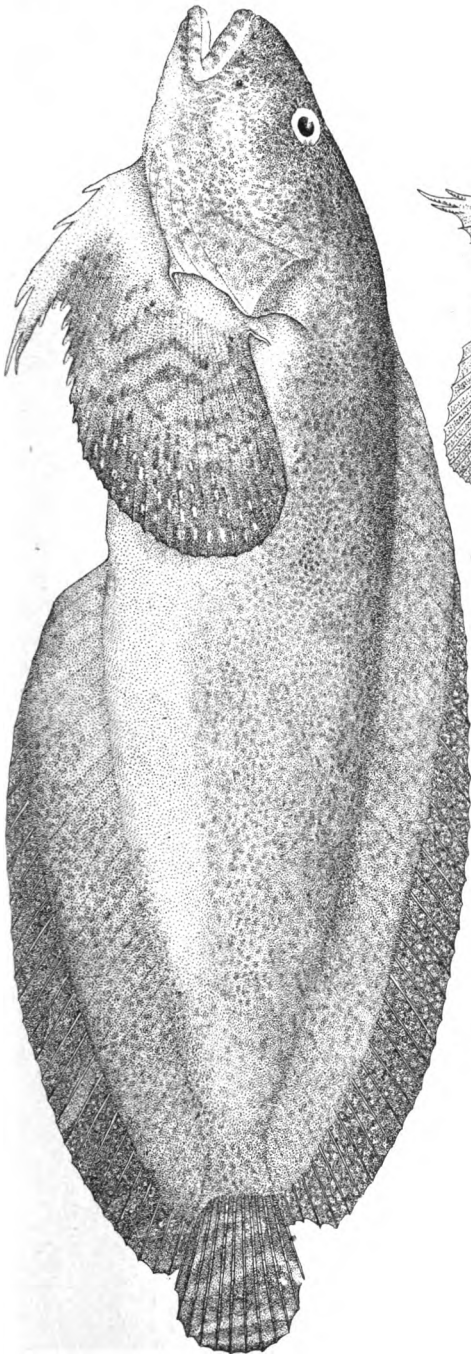
LITH. BRITTON & ROY, SF.



ANNA L. BROWN, DEL.

LIPARIS CYCLOPUS

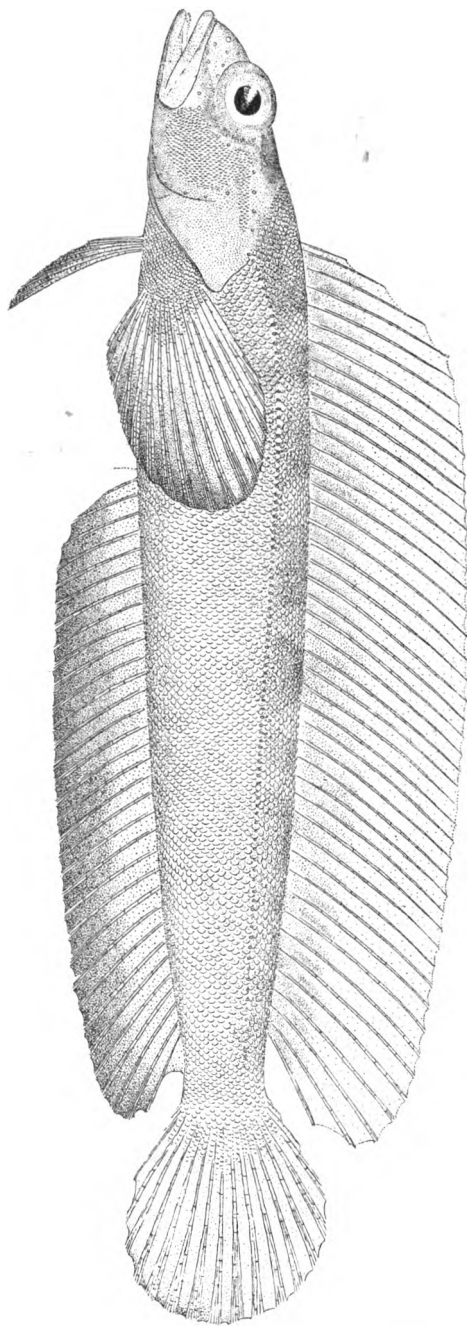
LITH. BRITTON & REY, SF.

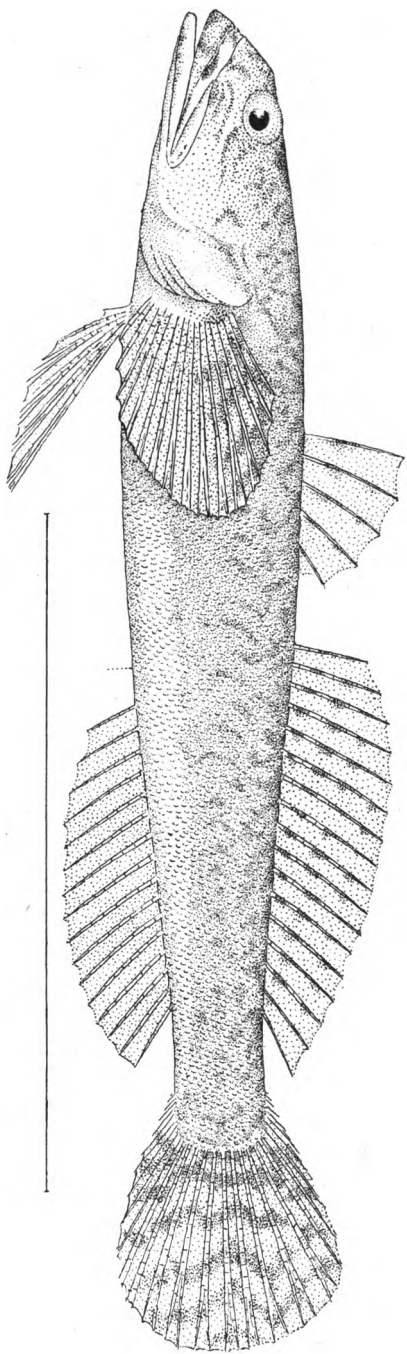


ANNA L. BROWN, DEL.

LIPARIS DENNYI

LITH. BRITTON & REY, SF.

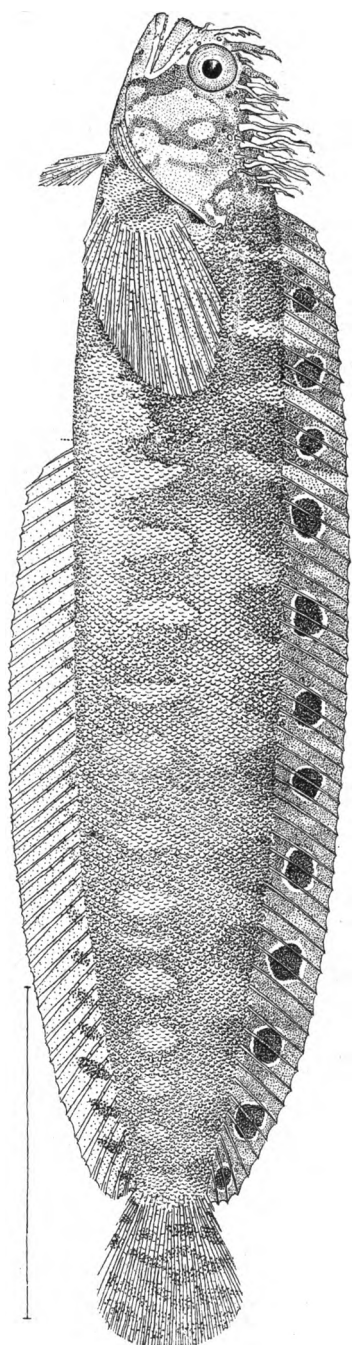




CLEVELANDIA IOS

ANNA L. BROWN, DEL.

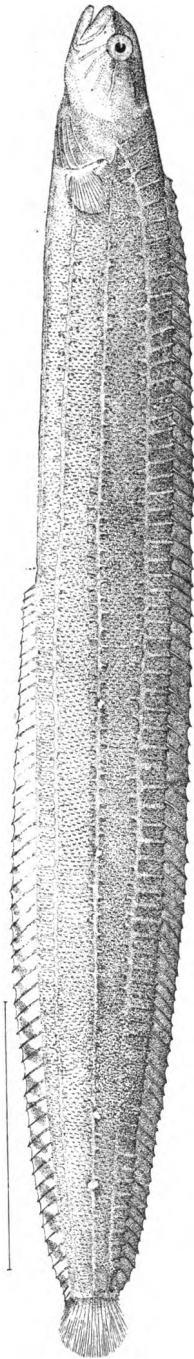
LITH. BRITTON & HEY, SF.



BRYOSTEMMA NUGATOR

ANNA L. E. BROWN, DEL.

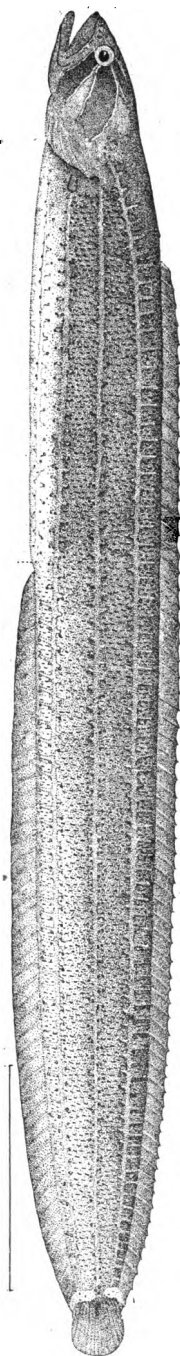
LITH. BRITTON & PASTY, N.Y.



XIPHISTES ULVAE

ANNA L. BROWN, DEL.

LITH. BRITTON & REY, SF.



XIPHIDION RUPESTRE

ANNA L. BROWN, DEL.

LITH. BRITTON & REY, SF.



SCYTALINA CERDALE

ANNA L. BROWN, DEL.

LITH. BRIT. MUSEUM, LONDON



3 2044 103 225 314

Date Due

~~JAN 1971~~

