represented in a coloured plate. Of the Mollusca, the Gymnobranchs are described by Dr. H. A. Meyer. The number of species met with is but twenty-three; there is not much that is noteworthy in the list, but that "singular and gaudy animal" of Montagu, *Thecacera pennigera*, so rare on the British coasts, was met with. The list of the Brachiopods, Lamellibranchs, and Gasteropods is a very elaborate one, drawn up quite after the fashion of our British Association Dredging Reports; the locality, depth in fathoms, and nature of the ground in which each species was found is given, and a sketch of its geographical distribution is added. The greatest depth reached was about 365 fathoms. *Crania anomala* and *Terebratulina caput-serpentis* appear to have been met with in quite shallow water; *Malletia* (*Voldia*) *obtusa*, Sars., *Kelliella abyssicola*, Sars., and other deep-sea species were met with at depths of from 50 to 360 fathoms. The following species are described as new:—*Lacuna vestita*, off Yarmouth; *Laëocochlis pommeraniæ*, nov. gen. et sp.; *Fusus mœbii*, and *Lathyrus albellus*. These three latter species are figured.

Article IX., by Dr. Möbius, describes the Copepoda and Cladocera. *Euchæta carinata*, sp. n., is described and figured. The remaining orders of Crustacea are described by Metzger. We note the appearance in the North Sea of an Erichthus form, thus indicating the presence of a Squilla. *Galathea Andrewsii*, Kin., is placed as a synonym of *G. intermedia*, Lilljb.; *Thia polita*, *Nika edulis*, *Bythocaris simplicirostris*, and other interesting forms, were met with. *Sergestes Meyeri*, *Byblis crassicornis*, and *Dulichia monocantha* are described and figured as new.

The list of fish taken is most meagre, containing but thirty-two species.

The meteorological investigations of Prof. Karsten are exceedingly interesting, and records are appended as to the temperatures of the sea at various depths.

Dr. Hensen appends a Report on the Fisheries of the German Coast, in which we find elaborate statistics of the number of fishing-stations, of the fishermen, and the amount of assistance given to them. The off-shore fishermen are distinguished from the deep-sea trawlers. The number of fishermen on the German coasts is 17,195, with say 8,130 boats; the number of English fishermen, is given as 134,000, with 36,000 boats. In France, the number is 73,757 men, with 16,819 boats; in Italy, 60,000 men and 18,000 boats; in Austria, 7,196 men and 1,852 boats. These numbers are based on reports dating between 1871 and 1874.

A portion of the Report is devoted to the subject of the possibility of estimating the take of fish. According to the official return of the German Treasury on the import and export of fish during 1873, it would appear that these equalled on—

	m.
River fish and cray-fish	342,000
Sea fish in general	3,150,000
Herrings	27,798,000
Shell fish	387,000
Caviar	973,000
Total ...	32,650,000

This portion of the Report of the North Sea Commission ought to be studied by all those interested in our own fisheries. E. P. W.

OUR BOOK SHELF

Eighth Annual Report of the Noxious, Beneficial, and other Insects of the State of Missouri. By Charles V. Riley, State Entomologist.

THE perusal of Mr. Riley's yearly reports is one of the pleasures to which the entomologist looks forward with undiminishing eagerness. Each succeeding volume throws open to the student of science fresh fields of discovery in the realms of both nature and art. Mr. Riley's ready appreciation of the practically useful in invention, accompanied by that quick discernment which enables him at once to reject or rectify what is useless or cumbersome, renders him especially fitted for the responsible position which he occupies.

The report now before us is devoted to the consideration of five noxious insects, and one innoxious—the Colorado Beetle, the Canker-worm, the Army-worm, the Rocky Mountain Locust, the Grape Phylloxera, and the Yucca-borer, the greater space being given to the third and fourth of the above-mentioned species, in consequence of the ravages which they have committed in Missouri during the past year.

In the chapter on the Canker-worm an illustrated description is given of a very simple and ingenious contrivance (p. 20) for arresting the progress of the insect at the time of oviposition; it consists of a circle of tin which surrounds the trunk of the imperilled tree at a few inches distance, and which is held in position by a circle of muslin attached to the tin at its lower edge, and drawn closely round the trunk, with a cord, at the top; the tin is then covered with a mixture of castor oil and kerosene on its inner surface, which forms an effectual barrier to the insects.

Other interesting inventions are described; and not only are careful figures prepared of the noxious species in all stages, but also of their natural enemies; so that it is the agriculturist's own fault if he fails to distinguish between his friends and foes.

The Report concludes with the life-history of the Yucca-borer (*Megathymus yuccæ*), an insect hitherto referred to the moths, but which Mr. Riley determines to be a butterfly. Judging by the figure of the adult larva it might be questioned whether the insect is not as nearly related to the moths; it has the aspect of a *Sphinx* larva with the wrinkled and (apparently) shining character and general coloration of a *Cossus*;[1] the pupa bears out the resemblance; the rapidity of its flight quite accords with what is notoriously the character of a Hawk-moth, and the form of its antennæ in no way militates against such an affinity; still it must in fairness be admitted that Mr. Riley adduces much evidence in favour of the Rhopulocerous character of the species, the value of which cannot be contradicted until we can bring forward proofs that some undoubted moth possesses the same structural peculiarities. A. G. B.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*]

Optical Experiments

1. Fold a sheet of writing-paper into a tube whose diameter is about 3 cm. Keeping both eyes open, look through[2] the tube with one eye, and look at the hand with the other, the hand being placed close by the tube. An extraordinary phenomenon will be observed. A hole the size of the tube will appear cut through the hand, through which objects are distinctly visible. That part of the tube between the eye and hand will appear

[1] Mr. Riley notes its resemblance to this genus (p. 177).

[2] It is necessary to focus the eye upon any object seen *through* the tube. —ED.