### **PROCEEDINGS**

OF THE

# Cotteswold Naturalists' FIELD CLUB

For 1881—1882

President,

SIR WILLIAM V. GUISE, BART., F.L.S., F.G.S.

Vice Pregidents.

T. B. Ll. BAKER, Esq., F.S.S.
THOMAS WRIGHT, M.D., F.R.S.E., F.G.S.
WILLIAM C. LUCY, F.G.S.

Ponorary Secretary.

WILLIAM HENRY PAINE, M.D., F.G.S., F.M.S.

#### Contents.

The President's Address at the Annual Meeting, at Gloucester, 1881.

The Cannington Park Limestone. By HANDEL COSSHAM.

On a Section of Strata exposed in a Railway Cutting at Morse, near Drybrook. By EDWARD WETHERED, F.G.S., F.C.S.

On the Minerals of Gloucestershire, with part of the adjacent Counties of Somerset and Worcestershire. Compiled by Mr. W. C. Lucy. Also List of Derived Rocks found in the Northern Drift Gravel over the same area. By Mr. W. C. Lucy.

On the Pisolite and the Basement Beds of the Inferior Oolite of the Cotteswolds. By E. WITCHELL, F.G.S.

I.—On a New Species of Star Fish, from the Forest Marble, Wilts. II.—On a New Species of Brittle Star, from the Coral Rag of Weymouth. III.—On a New Astacamorphous Crustacean, from the Middle Coral Reef of Leckhampton Hill. By Dr. Thos. WRIGHT, F.R.S., F.G.S., &c.

The President's Address at the Annual Meeting, at Gloucester, 1882.

## **PROCEEDINGS**

OF THE

## COTTESWOLD NATURALISTS'

## FIELD CLUB

**VOLUME VIII** 

PRINTED BY JOHN BELLOWS, GLOUCESTER
1886

## **CONTENTS**

	PAGE
THE PRESIDENT'S ADDRESS at the Annual Meeting at Gloucester	1
The Cannington Park Limestone. By Handel Cossham	20
On a Section of Strata exposed in a Railway Cutting, at Morse, near Drybrook. By Edward Wethered, F.G.S., F.C.S	24
On the Minerals of Gloucestershire, with part of the adjacent Counties of Somerset and Worcestershire. Compiled by W. C. Lucy.  Also a List of Derived Rocks found in the Northern Drift Gravel over the same area. By W. C. Lucy	30
On the Pisolite and the Basement Beds of the Inferior Oolite of the Cotteswolds. By E. WITCHELL, F.G.S.	35
I. On a New Species of Star Fish, from the Forest Marble Wilts.  II. On a New Species of Brittle Star, from the Coral Rag of Weymouth. III. On a New Astacamouphous Crustacean, from the Middle Coral Reef of Leckhampton Hill. By Dr Thomas Wright, F.R.S., F.G.S., &c	56
The President's Address at the Annual Meeting, at Gloucester, 1882	60
Some Notes on the Occurrence at Elmore of the Garganey Teal (Querquedula circia. Linn.)	64
The President's Address at the Annual Meeting, at Gloucester, 1883	89
On the Occurrence of the Mineral Vivianite in the Cotteswolds. By FREDERICK SMITHE, L.L.D., F.G.S.	112
On the Terrace Gravels of Auchnasheen, Ross-shire. By W. C. Lucy, F.G.S	118
On an Ancient Jar, filled with Mercury, found in a Cliff near the Seashore, at Fetlar, one of the Shetland Islands. By Thos. WRIGHT, F.R.S., L. & E., F.G.S., Lond.	121
On the Green Colouring Matter of Animals, and Researches in Symbioses.	
By Professor Allen Harker, F.L.S	126
Hock Crib, Fretherne. By W. C. Lucy, F.G.S.	131

I	PAGE
The President's Address at the Annual Meeting, at Gloucester, 1884	135
On Randwick Long Barrow. By G. B. WITTS, C.E	156
Some Remarks on a Boring for Water near Birdlip. By W. C. Lucy, F.G.S.	161
On the Occurrence of Spores of Plants in the Lower Limestone Shales of the Forest of Dean Coalfield. By EDWARD WETHERED, F.G.S., F.C.S	168
On the Occurrence of the Palmate Newt near Stroud. By C. A. WITCHELL	174
On a Remarkable Exposure of the Kellaway's Rock, in a recent Cutting near Circnester. By Professor Allen Harker, F.L.S	176
Notes on the Breeding of Fishes. By Francis Day, F.L.S., F.Z.S .	188
On Sinking a Well in the Lower Lias, at Gloucester. By W. C. Lucy, F.G.S	211
The PRESIDENT'S ADDRESS at the Annual Meeting, at Gloucester, 1885	223
On a Discovery in the Kingswood Coalfield. By HANDEL COSSHAM, F.G.S	246
On the Southerndown, Dunraven, and Bridgend Beds. By W. C. Lucy, F.G.S	254
On the Forest Marble and Upper Beds of the Great Oolite, between Nailsworth and Wotton-under-Edge. By E. WITCHELL, F.G.S  (See Corrigendum below.)	265
On the Structure and Formation of certain English and American Coals. By E. Wethered, F.G.S., F.C.S.	281
Notes on the Breeding of Salmonida. By Francis Day, F.L.S., F.Z.S.	301

#### CORRIGENDUM.

Vol. VII, Pl. IV, fig 4, pp. 274 and 279—For Nerinæa Simplex, read "N. Calcarea." It appears that the name N. Simplex was given to another species by Deslongchamps, in 1849.

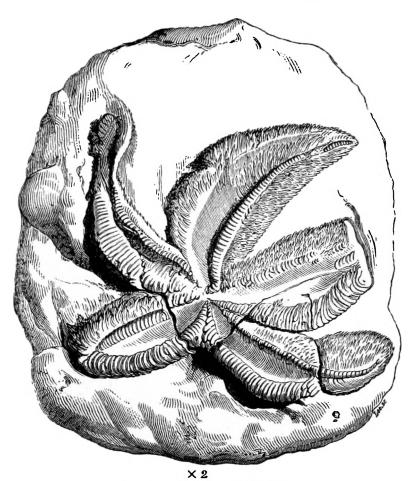
On a New Species of Star Fish, from the Forest Marble, Wilts. By Dr. Thos. Wright, F.R.S., F.G.S., &c.

#### Genus.—Uraster—Agassiz, 1835.

Body, stellate; rays, five, moderately long, cylindrical or lanceolate, deeply cleft on the under side, fringed below with rows of small, and laterally with larger spines. Skeleton composed of small irregularly-shaped and femur-like ossicula, articulated together in a reteform manner. Upper surface of the body studded with blunt or pointed spines, scattered or grouped together in tufts, and arranged more or less regularly in longitudinal rows. Ambulacral avenues wide, composed internally of two rows of long femur-like bones, spaced out for the four series of tentacula. Anal opening small, sub-central, madreporiform body simple. This genus first appeared in the Lias, and ranged onward through the Jurassic, Cretaceous, and Tertiary periods into our existing seas.

#### URASTER SPINIGERA.-Wright, nov. sp.

Diagnosis.—Rays, five, short, broad, curved and pelatoidal; ambulacral areas wide; margins bordered by a series of small ossicles, which form beaded ridges on each side of the ambulacral spaces. The ossicles support numerous small, short, blunt spines which lie in profusion on the sides of the rays; similar spines appear to have clothed the dorsal surface and are seen "in situ" in the twisted portion of one of the rays, as delineated in the subjoined figure, drawn by the late Mr. C. R. Bone, and enlarged two diameters.



URASTER SPINIGERA, Wright.

Dimensions.—Diameter of the disk, one half-inch; length of each ray, one inch; breadth of a ray at its widest part, four-tenths of an inch.

Description.—This beautiful little Star-fish was collected from the Forest Marble, near Road, Wilts, by Dr. H. F. Parsons, who forwarded it to me for description and figuring. The specimen came into my hands in a very bad state, but by carefully backing up the rock with plaster of Paris, I have given it sufficient support to enable me to develop a considerable portion of its anatomy.

The disk was small in proportion to the width of the rays and the diameter of the Star-fish. The rows of small ossicles which bound the margins of the wide ambulacral areas form an important character in this species. These bones are longest near the oral aperture, and gradually diminish towards the end of the rays. They form a beaded structure of considerable strength, which supported a great number of small, short, stout spines; these appear to have passed round the sides of the rays and covered the dorsal surface. A few of the spines are seen in the twisted part, which exposes a portion of the upper surface. This spinous condition of the tegumentary membrane has suggested the specific name which I have given to this new Jurassic Star-fish.

The small ossicles which occupied the central portion of the ambulacral areas are absent, and there remains only the vacant spaces they at one time filled in (see figure.)

Affinities and Differences.—This organism differs so much from the other fossil species of the Genus Uraster that it may probably prove to be the type of a new genus when more details are learned anent the anatomy of the skeleton, by the discovery of additional materials to work upon. In the meantime I have grouped it with the Urasters, to which it is so closely related by general characters, whilst it differs in some others, as for example, in the presence of the beaded ridge formed by the ossicles which bound and limit the ambulacral areas.

Locality and Stratigraphical Position.—This specimen was obtained from one of the shaly beds of Forest Marble, near Road, Wilts. It appears to be rare, as I can find no record of any other Star-fish having ever been found in the fossiliferous beds of that locality.

The above drawing was very carefully made on wood, by the late eminent artist Mr. C. R. Bone, and engraved by Mr. Lee. It represents the fossil enlarged two diameters, in order to exhibit the minute details of the anatomy of this species.