Diag. Sht. No. 1351-2



Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: Florida

# DESCRIPTIVE REPORT

Hydrographic Sheet No. 3978

LOCALITY:

Florida Reef

1917

CHIEF OF PARTY:

E. H. Hawley

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

# HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Field No. 2
Register No. 3978

State . . . Florida

General locality . Florida Reefs

Locality . Rebecca Shoal L.H. to Tortugas

Chief of party . . J.H.Hawley

Surveyed by . . . Wire Drag Party No. 5

Date of survey . . May 14 to September 22, 1917

Scale . . . . . 1 : 40,000

Soundings in . . . Feet

Plane of reference . . Mean Low Water

Protracted by E.S.Walker F.E.Joekel B.P.Cohen . . Soundings in pencil by . J.H.H.

Inked by field party. . Verified by . P.L.J. . . Tracing by P.L.J.

Records accompanying sheet (check those forwarded):

Des. report, 3 Tide books, ..... Marigrams, 1 Boat sheets,

1 Sounding books, 7 Wire-drag books, ..... Photographs.

Data from other sources affecting sheet . . . . . .

Remarks:

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 583 ◆ 1

(1)

# PROGRESS CHART

SHOWING CONDITION OF RECORDS OF

Hydrographic Sheet No. _____ Field No (2) 3978

*Wire drag survey of* FLORIDA REEFS

*Scale* 1 to ~~40~~ 80,000 *Date of Survey* Apr. – Oct. 1917

*Surveyed by* U.H. Hawley – Party No. 5

| Day | DATE | Signaled angles compared | Distances entered | Distances checked | Length of upright entered | Length of upright checked | Correction entered | Correction checked | Drag depth entered | Drag depth checked | Reducers entered | Reducers checked | Effective depth entered | Effective depth checked | Effective depth diagram entered | Effective depth diagram checked | Positions plotted | Dragged strip traced | Tracing checked | Area subdivided | Subdivision checked | Transferred and inked | Compared with chart |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | May 14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| B | " 19 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| C | " 21 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| D | " 22 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| E | " 23 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| F | " 24 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| G | " 29 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| H | " 30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| I | June 8 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| K | " 11 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| L | " 12 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| M | " 13 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| N | " 14 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| O | " 15 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| P | " 16 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Q | " 20 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| R | " 21 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| S | " 22 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| T | " 28 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| U | " 27 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| V | " 30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| W | July 6 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| X | " 7 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Y | " 9 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Z | " 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |

This Progress Chart, checked to show the condition of the office work, should be forwarded to the office with the records.

11—6061

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 583

# PROGRESS CHART

SHOWING CONDITION OF RECORDS OF

Hydrographic Sheet No. ..... Field No. 2 3978

*Wire drag survey of* FLORIDA REEFS

*Scale* 1 to 40,000 *Date of Survey* Apr - Oct 1917

*Surveyed by* J. H. Hawley - Party No 5.

| Day | DATE | Signaled angles compared | Distances entered | Distances checked | Length of upright entered | Length of upright checked | Correction entered | Correction checked | Drag depth entered | Drag depth checked | Reducers entered | Reducers checked | Effective depth entered | Effective depth checked | Effective depth diagram entered | Effective depth diagram checked | Positions plotted | Dragged strip traced | Tracing checked | Area subdivided | Subdivision checked | Transferred and inked | Compared with chart |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A' | July 11 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| B' | " 12 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| C' | " 20 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| D' | " 21 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| E' | " 23 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| F' | " 24 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| G' | " 27 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| H' | " 28 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| J' | " 30 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| K' | " 31 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| L' | Aug. 1 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| M' | " 2 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| N' | " 3 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| O' | " 9 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| P' | " 10 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Q' | " 11 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| R' | " 13 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| S' | " 16 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| T' | " 17 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| U' | " 18 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| " | " 21 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| W' | " 27 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| X' | " 28 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Y' | Sept. 6 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| Z' | " 7 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |

This Progress Chart, checked to show the condition of the office work, should be forwarded to the office with the records.

11—6061

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 583f

(3)

# PROGRESS CHART

SHOWING CONDITION OF RECORDS OF

Hydrographic Sheet No. ..... Field No. 2 3978

*Wire drag survey of* FLORIDA REEFS

*Scale* 1 to 40,000 *Date of Survey* Apr.-Oct.- 1917.

*Surveyed by* J. H. Howley - Party No. 5

| Day | DATE | Signaled angles compared | Distances entered | Distances checked | Length of upright entered | Length of upright checked | Correction entered | Correction checked | Drag depth entered | Drag depth checked | Reducers entered | Reducers checked | Effective depth entered | Effective depth checked | Effective depth diagram entered | Effective depth diagram checked | Positions plotted | Dragged strip traced | Tracing checked | Area subdivided | Subdivision checked | Transferred and inked | Compared with chart |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A" | Sept 8 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| B" | Sept 11 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| C" | " 12 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| D" | " 21 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |
| E" | " 22 | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | | | |

This Progress Chart, checked to show the condition of the office work, should be forwarded to the office with the records.

11—6061

DESCRIPTIVE REPORT - SHEET (NO. 2) 3978

The area covered on this sheet extends between Rebecca Shoal and Dry Tortugas. It is carried north to a line extending approximately from Rebecca Shoal L.H. to East Key and south to the 20-fathom curve except to the southward of Tortugas where no signals were available to carry it beyond the 16-fathom curve.

The area indide the 10-fathom curve in the vicinity and south of Rebecca Shoal is dragged to a general maximum depth of 40 feet at mean low water. All other area is dragged to 50 feet at mean low water.

The only shoals found in this locality(17 in number) are in the vicinity of Rebecca Shaal.

It was necessary to use floating buoy signals to supplement the few available triangulation stations, for the control of this work.

These buoy signals were located by theodolite cuts or by sextant angles, as shown by the signal list accompanying this report, and were designated by single letters, beginning with A and proceeding through the alphabet in the order of their location.

Frequent drag tests to determine the drag depth were obtained during the course of the work, and a test of the towline base made at the beginning of the season showed that the length of towline adopted for computations is well within the limit of safety.

Respectfully,

J. H. Hawley

Chief of Party.

STATISTICS - HYDROGRAPHIC SHEET (NO. 2) 3978

| Date, 1917 | Letter | Length of Drag feet | Positions | Soundings | Miles, Statute |
|---|---|---|---|---|---|
| May 14 | A | 4,000 | 4 | -- | 1.4 |
| " 19 | B | 4,000 | 8 | -- | 1.5 |
| " 21 | C | 4,000 | 32 | -- | 9.2 |
| " 22 | D | 5,000 | 33 | -- | 9.0 |
| " 23 | E | 4,000 | 0 | 3 | 0.0 |
| " 24 | F | 4,000 | 32 | -- | 5.8 |
| " 29 | G | 4,000 | 42 | -- | 8.5 |
| " 30 | H | 5,000 | 41 | -- | 9.6 |
| June 8 | J | 1,500 | 32 | -- | 5.2 |
| " 11 | K | 4,000 | 32 | 1 | 7.6 |
| " 12 | L | 4,000 | 28 | 2 | 5.2 |
| " 13 | M | 5,000 | 21 | 2 | 4.5 |
| " 14 | N | 4,000 | 41 | 1 | 10.0 |
| " 15 | O | 12,000 | 33 | -- | 10.0 |
| " 16 | P | 12,000 | 18 | -- | 5.5 |
| " 20 | Q | 9,000 | 18 | -- | 6.0 |
| " 21 | R | 5,000 | 18 | -- | 5.1 |
| " 22 | S | 12,000 | 24 | -- | 10.2 |
| " 23 | T | 4,000 | 23 | 1 | 2.7 |
| " 25 | U | 5,000 | 27 | -- | 7.8 |
| " 30 | V | 5,500 | 31 | -- | 5.6 |
| July 6 | W | 12,000 | 31 | -- | 10.0 |
| " 7 | X | 4,000 | 22 | 2 | 3.2 |
| " 9 | Y | 4,000 | 31 | -- | 5.5 |
| " 10 | Z | 4,000 | 26 | -- | 4.4 |
| " 11 | A' | 5,000 | 26 | -- | 6.4 |
| " 12 | B' | 4,000 | 19 | -- | 3.0 |
| " 20 | C' | 5,000 | 22 | -- | 5.8 |
| " 21 | D' | 12,000 | 30 | -- | 7.5 |
| " 23 | E' | 4,000 | 32 | -- | 6.0 |
| " 24 | F' | 4,000 | 39 | -- | 6.0 |
| " 27 | G' | 5,000 | 42 | -- | 7.7 |
| " 28 | H' | 4,000 | 38 | -- | 6.5 |
| " 30 | J' | 5,000 | 44 | -- | 12.2 |
| " 31 | K' | 5,000 | 20 | -- | 4.6 |
| Aug. 1 | L' | 9,000 | 26 | -- | 9.8 |
| " 2 | M' | 9,000 | 27 | -- | 10.3 |
| " 3 | N' | 5,000 | 24 | -- | 6.5 |
| " 9 | O' | 4,000 | 22 | -- | 3.3 |
| " 10 | P' | 4,000 | 42 | -- | 7.3 |
| " 11 | Q' | 5,000 | 41 | -- | 7.0 |
| " 13 | R' | 5,000-4,000 | 29 | -- | 7.4 |
| " 16 | S' | 5,000 | 25 | -- | 4.5 |
| " 17 | T' | 5,000 | 31 | -- | 6.2 |
| " 18 | U' | 4,000 | 17 | 1 | 3.0 |
| " 21 | V' | 4,000 | 42 | 2 | 6.7 |
| " 27 | W' | 4,000 | 29 | 1 | 4.0 |
| " 28 | X' | 4,000 | 18 | 1 | 1.7 |
| Sept. 6 | Y' | 4,000 | 28 | 1 | 4.4 |
| " 7 | Z' | 2,800 | 15 | -- | 2.7 |
| " 8 | A" | 5,000 | 58 | -- | 9.1 |
| " 11 | B" | 9,000 | 24 | -- | 6.7 |
| " 12 | C" | 9,600 | 19 | -- | 5.7 |
| " 21 | D" | 5,000 | 38 | -- | 7.5 |
| " 22 | E" | 5,000 | 32 | -- | 6.6 |
| | | Total | 1547 | 18 | 339.6 |

HYDROGRAPHIC SHEET NO. 2) 3978

List of signals.

| Hydro. Name | How located. |
|---|---|
| Log | Tortugas L.H., triangulation |
| Tor | Garden Key L.H. " |
| Reb | Rebecca Shoal L.H. " |
| Main | Triangulation, J.H.H., 1917. |
| Hos | " " " " |
| East | " " " " |
| Bir | Hydro. signal. pg.59, vol. 1, W.D.record. |
| Nun | " " pg 59 vol 2 " |
| A, B, & D. | Buoy signals, theodolite cuts from Log and Reb |
| C | " signal, sextant cuts, pg. 59, vol. 1 |
| E | " " " angles pg. 58, vol 3 |
| F | " " " " pg. 59 vol 4 |
| G,H,J,K,L | " " " " pg. 59 vol 5 |
| M,O,P | " " " " pg. 59 vol 6 |
| Q,R,S | " " " " pg. 59 vol 7 |

Original: Vol. 1, Wire Drag Record.
Duplicate: Attach to sheet No. 2.

ADDRESS
U. S. COAST AND GEODETIC SURVEY
WASHINGTON, D. C.

REFER TO No.

# DEPARTMENT OF COMMERCE
## U. S. COAST AND GEODETIC SURVEY
## WASHINGTON

5-VEC

April 2, 1918.



Division of Hydrography & Topography:

Division of Charts:

Tidal reductions have been approved in
8 volumes of Wire-Drag and Sounding records

HYDROGRAPHIC SHEET 3978

Florida Reefs, Florida
J.H.Hawley in 1917.

Plane of reference is
Mean low water, reading

2.4 ft.on tide staff at
Fort Jefferson, Garden Key, Florida.

L. S. Sturdy

Acting Chief, Section of
Tides and Currents.

Hyd Sheet No. 3978

This work seems to have been carefully laid out and well executed. The ground has been well covered, most of the area being dragged to an approximate depth of fifty feet.

The splits which were developed by the verification were all marked on the sheet by the field party with the exception of one or two spots where the overlap appeared to be too small.

The records were clear and carefully kept, except that effective depth diagrams were omitted.

The plotting of the drag work by the field party was fairly well done. That part of the sheet plotted by Mr. E. S. Walker was very good.

R. L. Johnston