

## ITINERARIES OF THE WHEELER SURVEY NATURALISTS: HENRY WETHERBEE HENSHAW

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Some years ago I started to prepare detailed studies of the movement of the naturalists who had been assigned to the Wheeler Surveys west of the 100th meridian. Two of these studies have been published, for Theodore L. Mead (Brown, 1956) and for Ferdinand Bischoff (Brown, 1958). Having particular need for precise data about the wanderings of H. W. Henshaw<sup>2</sup> in connection with a study of the types of the butterfly names proposed by William Henry Edwards, I have gathered together my notes and put them in form for publication.

### EXPEDITION OF 1872

The official tally of specimens collected by the expedition of 1872 makes no mention of any butterflies collected. In matter of fact it suggests that practically all of the material gathered had been destroyed by a series of mishaps. The truth is that a great many of the specimens survived these and were turned over to specialists for study.

In a preliminary report for the field season of 1872 (Yarrow and Henshaw, 1874: 52-55), there is a good summary of the work done. During the latter half of July and the first week or so of August, Henshaw made a large collection of insects, especially Coleoptera. Other extensive collections were made at Fillmore, Beaver, Toquerville, and Meadow Creek. Unfortunately some bottles of specimens were lost on the trail from Shonesburgh to Toquerville. A fire at Sevier destroyed most of the Lepidoptera that had been collected.

The great bulk of the butterflies collected by the Wheeler Survey parties and labelled "So. Utah." came from the trek taken by Acting Assistant Surgeon H. C. Yarrow and his naturalist-assistant H. W. Henshaw from Provo to Washington and St. George, Utah, and return. Apparently each of these naturalists concentrated his efforts on certain groups of animals. Yarrow primarily collected vertebrates, other than birds. Henshaw divided his time between birds and insects.

The development of a trace and timetable for Henshaw was not difficult but was laborious. He made very precise records of the bird skins

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<sup>2</sup> An autobiography of Henshaw will be found in *Condor*, 21: 102-107, port., 165-171, port., 177-181, 217-222; 22: 3-10, 55-60, 95-101 (1919-1920).

he collected for Baird. By carefully going over these data and entering the field numbers and localities on a master calendar a reasonably complete record of Henshaw's travels was obtained.

Once the calendar was completed it became evident that numerous data in the register of specimens collected (Volume 5) were in error. These errors all can be attributed to misreading of the manuscript by the printer and proofreaders. The most frequent type of error is use of the wrong month for the collection date of a specimen. This caused certain field numbers to be out of place. When the field number was put into proper sequence the discrepancy in locality disappeared. Unless otherwise noted, all of the data in the following table is based upon specimens, their field number, and date and locality of collection. The exceptions are drawn from the first volume of the series, *The Geographical Report*, volume 1 (Wheeler, 1889). The *Zoological Report*, volume 5, was published much earlier (Henshaw, 1875).

From Dr. Yarrow's account for 1872 (5: 16-18) it is learned that the two naturalists worked together from the time the party formed around the middle of July in the vicinity of Salt Lake City until the parties moved out of Provo on the 10th of August. At that time Dr. Yarrow joined Lieutenant Hoxie's party and circled far westward into Nevada, thence into the southwestern part of Utah. Mr. Henshaw joined Lieutenant Wheeler's party and moved in a generally southwestward direction to a rendezvous with the Hoxie Party at Toquerville, Utah. From there on the two worked together until the party disbanded in December at Provo.

Apparently the two naturalists used a common series of field numbers for the time they were together in July. These range up to 151. This series was then continued by Yarrow for the rest of the season. Henshaw began an independent series on July 31st with his collection from Provo Canyon. The double series has caused some problems and confusion!

In a footnote (1889: 46) Wheeler outlined his travels during this field season. From it I gather that during the assembly period at Salt Lake City several excursions were made. Field numbers 1-11, for which I have no information, may apply to lost material collected during this period. From the camp near Salt Lake City Wheeler visited the mining districts about Parley's Park. Later he went to Little Cottonwood Canyon and returned via the heads of American Fork Canyon and Big Cottonwood Canyon. Then the entire party moved to Provo.

Wheeler's own itinerary outlines the main party travel until he broke away at St. George: "From camp near Salt Lake City to mining districts about Parley's Park and return; to Little Cottonwood Canyon and return,

via heads of American Fork and Big Cottonwood Canyon; thence to Provo, Utah; thence to Spanish Fork via Provo Valley and Canon and Strawberry Valley; thence to Thistle Valley via Spanish Fork; thence to Utah Lake Valley and circuit to Sam Pitch Valley via Nephi; thence to the eastward across the range and along flanks of Castle Valley and returning to Sam Pitch Valley (without trail); thence to Nephi via Gunnison; thence to Fillmore; thence to Beaver and Panquitch via Parowan; thence via Sevier Plateau and head of Virgin River Valley and Canon to Toquerville; then to Saint George; (all in Utah) . . ." (1889: 46).

Aug. 10, "left Provo and camped that night opposite the mouth of the South Fork of the Provo River" (1889: 46-47).

Aug. 13, "The route from Provo to Strawberry Valley follows Daniel's Creek to its source . . . thence . . . to the head of Strawberry Creek" (1889: 47).

Aug. 14, 15 and 16, "A partial rendezvous was made on Soldier's Fork of Spanish Creek, and the march continued to Sam Pitch Valley and camp made near a settlement called Wales." (1889: 48).

Aug. 25, "A detour to the eastward of the Sevier Valley was planned and a crossing made from near the source of Thistle Creek, about 1½ miles from which a summit is reached that either forms the immediate head or is in close proximity thereto of six streams, viz: Thistle Creek, Soldier's Fork, Strawberry Creek, White River, San Rafael, and Sam Pitch Creeks. The tortuous line of these several water divides was followed in a southeasterly direction until a trail, evidently leading in the direction of Castle Valley, was met and followed." (1889: 48).

According to Henshaw (1875: 134) the season officially opened on the 15th of July at Provo. Here he and Yarrow used field numbers from 12 to 151 between that date and the 30th. The numbers for the stay at Provo are not in sequence with the dates. It seems that the specimens for this period were numbered somewhat haphazardly. There are several obvious errors. A specimen of *Parus atricapillus septentrionalis* Harris bears a number 26 and is dated July 1, 1872. It probably was taken on August 1 of that year. A *Passerculus savanna alaudinus* Bonpland (no. 123 "July 20, 1872," Thistle Valley, Utah) probably was taken on August 23 at Thistle Valley where no. 124, the same species, was taken. Five specimens of *Carpodacus frontalis* (Say) numbers 21, 41, 42, 52, and 124 bearing dates between July 25 and August 2, 1872, are labelled "Washington, Utah." So far as I can learn the only visit to Washington, Utah, was made in October of that year. Four specimens of this finch were collected at Washington, Utah, on October 23, 1872.

The numbers for this station run from 322, 333 to 360 and all are Yarrow specimens. I believe that the "Washington" is in error and the five specimens noted hailed from the vicinity of Provo.

After Yarrow left to join Hoxie's party, Henshaw's numbers ran rather smoothly. The main party stayed at Provo until August 10th, and then started southwesterly toward the rendezvous at Toquerville. For the remaining period at Provo, Henshaw used his own series of numbers. The dates and locations of his collection there are given in Table I.

TABLE I

| Date            | Numbers   | Location                        |
|-----------------|-----------|---------------------------------|
| 24 July         |           | Provo, Utah                     |
| 31 July         | 119, 180  | Provo, Utah                     |
| "               | 5 to 10   | Provo Canyon                    |
| 1-3 August      | 11 to 49  | Provo                           |
| 9 August        | 61        | Hobble Canyon                   |
| "               | 62        | Provo                           |
| 11 August       | 64        | Wasatch Mountains, Provo Canyon |
| 12 August       | 69 to 74  | Daniel's Canyon                 |
| "               | 72        | Wasatch Mountains               |
| 13 August       | 80 to 82  | Strawberry Valley               |
| 16-17 August    | 95 to 103 | Wasatch Mountains               |
| 18 August       | 109       | Thistle                         |
| 20 August       | 112-115   | Fountain Green                  |
| "               | 123       | Thistle Valley                  |
| 22 August       | 122       | Fairview                        |
| 23 August       | 124       | Thistle Valley                  |
| 25 August       | 133       | Wasatch Mountains               |
| 5 September     | 141       | Gunnison                        |
| "               | 143-145   | Salina                          |
| 7-8 September   | 147-152   | Gunnison                        |
| 8 September     | 153       | Wasatch Mountains               |
| 10 September    | 154-160   | Grass Valley                    |
| 14 September    | 163-164   | Otter Creek                     |
| 15 September    | 165       | Harmony                         |
| 17-18 September | 167-181   | Panquitch                       |
| 19 September    | 184       | Otter Creek                     |
| 30 Sept.-2 Oct. | 188-211   | Rush Lake                       |
| 3 October       | 211-215   | Iron Springs                    |
| "               | 216-217   | Mormon Springs                  |
| 4-5 October     | 220-236   | Iron Springs                    |
| 5-6 October     | 237-252   | Iron City                       |
| 6 October       | 253-255   | Toquerville                     |
| 6-8 October     | 256-265   | Iron City                       |
| 9-10 October    | 266-269   | Harmony                         |
| 10 October      | 270-272   | Toquerville                     |
| "               | 273-275   | Washington                      |
| "               | 276-277   | Iron City                       |
| 11-12 October   | 280-282   | Harmony                         |
| 13-15 October   | 283-306   | Toquerville                     |

TABLE II

| Date           | Numbers          | Location    |
|----------------|------------------|-------------|
| 16-21 October  | 310-330 (ex 322) | Toquerville |
| 22-24 October  | 322, 333-360     | Washington  |
| 22 October     | 364              | St. George  |
| 26-27 October  | 363-369          | Cove Creek  |
| 28 October     | 370              | Pine Valley |
| "              | 371-373          | St. George  |
| 31 October     | 375              | Rush Lake   |
| "              | 376-378          | Beaver      |
| 3-11 November  | 379-397          | Beaver      |
| 12 November    | 389-401          | Pine Creek  |
| 13-15 November | 402-409          | Cove Creek  |
| 15-18 November | 410-426          | Fillmore    |
| 25 Nov.-3 Dec. | 429-491          | Provo       |

There are two numbers in this run that need comment. For No. 100 "Panguitch" 17 August, the locality is obviously incorrect, the number and date suggest Wasatch Mountains; and for No. 102 "Provo" 17 August, the locality probably is wrong, the date and number suggest Wasatch Mountains.

All of the field numbers refer to bird skins. The missing numbers were those for insect collections and a few for vertebrates other than birds.

From Toquerville through the rest of the season the two parties operated together under Lieutenant Hoxie. During this period the two naturalists worked more or less together but were at times separated. Yarrow's field numbers on the western circuit had run to 312. He seems to have joined in with Henshaw at Toquerville and the two, beginning October 16, used a common series of numbers, a continuation of Henshaw's series (Table II).

#### EXPEDITION OF 1873

In 1873, there were three divisions of the Wheeler Surveys in the field. The first of these, under the direct command of Lieutenant G. W. Wheeler, gathered at Santa Fe, New Mexico. The second was based at Salt Lake City, Utah, and under the command of Lieutenant R. L. Hoxie. The third met at Denver, Colorado, and was commanded by Lieutenant W. L. Marshall. The various parties took to the field around the first of June and disbanded in the first week of December.

H. W. Henshaw received permission to begin his work earlier in the season than did the others. He arrived in Denver early in May. The other two naturalists assigned to Lt. Marshall's division were botanists, John Wolf and Acting Assistant Surgeon J. T. Rothrock. Henshaw

operated almost independently and spent part of his time in the area covered by the Third Division and part of it in the region occupied by the First Division. His principal bases for operation were Denver and Fort Garland in Colorado, Fort Wingate, New Mexico, and Camp Apache, Arizona.

Throughout my study of Henshaw's travels I have found that the data from his bird skins are most reliable. He had been trained by S. F. Baird of the Smithsonian Institution to be very particular about labelling each skin with the date and locality of its capture. By compiling a calendar from these data I have recovered in some detail Henshaw's operation. In doing so I have discovered numerous errors in the listings published in the Zoology volume of the Survey in 1875. During the season of 1873, Henshaw used a little over 1,000 field numbers for his collections.

#### The Denver Collections

Henshaw arrived in Denver around the 5th of May and had anticipated moving immediately to Fort Garland in the San Luis Valley of Colorado. He was delayed in Denver until May 22nd awaiting arrival of his equipment that had been shipped to him from Boston. During the delay he collected in the immediate vicinity of Denver, expecting every day to be able to take off for Fort Garland. While in the Denver area Henshaw used about 123 numbers, the lowest number used at his next stop, Fort Garland, was 124. Henshaw's field numbers ran consecutively and were not restricted to bird skins.

There are three "Denver" specimens with field numbers in the Fort Garland series. These are 132, 150, 152 listed both in the "Observations" (Yarrow & Henshaw, 1874) and in the "Report" (Henshaw, 1875). In the "Report" there are four Fort Garland numbers credited to that station but given May dates instead of June dates (147, 231, 291, 347) and four Denver numbers and dates credited to "Ft. Garland" or "So. Colo." numbers 9, 20, 62, and 116. On p. 301 of the "Report" No. 119, *Cyanospiza amoena* (Say) is reported without locality. The date and number place it at Denver. The "Observations," p. 63, confirm this.

#### From Denver to Fort Garland

Henshaw states in the "Report" (1875: 134-5) that he stayed in Denver until the 22nd of May and arrived at Fort Garland on May 24th. To do this in 1873, he probably did as follows: travel by the recently opened railroad from Denver to Pueblo on the 22nd and on the same day take the south-bound stage to Walsenberg, staying the night of the 22nd-23rd at the crossing of the Huerfano River. I know of no stage

that crossed the mountains from Walsenberg to the San Luis Valley at this early date. By leaving Walsenberg on horseback Henshaw could in a day and a half of hard riding gotten to the Fort on the evening of the 24th. The distance is about fifty miles and the trail led over a 9,000-foot pass.

While at Fort Garland Henshaw made two collections at points some distance from the Fort. One of these was made at the Alkali Lakes that terminate the San Luis River in the northern part of the valley. These lakes are about 25 miles northwest of Fort Garland, a good day's ride away and favorite hunting place for the officers. The other was at the summer cavalry camp "on the Rio Grande about 90 miles northeast [sic] of Fort Garland." There is no Rio Grande northeast of Fort Garland. The error in direction appears in both the "Observations" (1874: 70), and the "Report" (1875: 136). The camp was west-northwest of the Fort near the present town of South Fork on the Rio Grande where it emerges from the mountains into the San Luis Valley. Henshaw also spent about a week in camp on the shoulder of Old Baldy, about 12 miles north of the Fort.

Henshaw used 305 field numbers at his Fort Garland base. Of these about 170 apply to bird skins, 20 to clutches of eggs, 13 for nests, and 21 for sterna. About 50 numbers apply to vertebrates other than birds and 50 to invertebrate collections. In general, the material other than ornithological is labelled "Fort Garland." A few of these are labelled from Rio Grande and Alkali Lakes. The following tabulation of dates, field numbers, and localities are as accurate as I have been able to compile (Table III).

I have seen no material that was collected by Henshaw from June 29 through July 1 inclusive. He probably spent this time packing his collections for shipment. He left Fort Garland on July 2, unencumbered, for a fast trip to Fort Wingate in New Mexico.

TABLE III

| Date            | Field Numbers | Locality                   |
|-----------------|---------------|----------------------------|
| 25 May-29 May   | 124-197       | vic. of Fort Garland       |
| 30 May-6 June   | 198-284       | field camp on Old Baldy    |
| 7 June          | 285-301       | Fort Garland               |
| 8 June-9 June   | 302-304       | en route to cavalry camp   |
| 10 June-16 June | 305-371       | Cavalry camp on Rio Grande |
| 17 June-18 June | 372-374       | en route to Fort Garland   |
| 19 June-20 June | 375-387       | vicinity of Fort Garland   |
| 21 June-23 June | 388-414       | Alkali Lakes               |
| 23 June-28 June | 416-428       | vicinity of Fort Garland   |

## Fort Garland to Fort Wingate

I have found no indication of how Henshaw traveled from Fort Garland to Fort Wingate. There were open to him several routes: via Walsenberg and stage lines to Santa Fe, then westward on horseback or with a supply train to Fort Wingate; directly south from Fort Garland via the old Spanish Road to Taos and Santa Fe and westward; directly to Fort Wingate via Chama, Pagosa Springs, and south from the vicinity of the present city of Durango. The third route would have been very risky for a lone horseman or a small party. I suspect that he took the old Spanish Road. He did no collecting en route so there is no clue afforded by specimens. He arrived at Fort Wingate on the 12th of July and there joined the Wheeler party. The chief naturalist for that party was C. G. Newberry, Acting Assistant Surgeon, who was a good geologist and general naturalist.

## Fort Wingate to Camp Apache

The Henshaw party delayed at Fort Wingate for several days and left for Camp Apache on July 19th. During the week of delay, Henshaw and Newberry made good use of their time. Henshaw's movement from Fort Wingate to Camp Apache can be traced through his specimens.

Comparison of this data with that published as the itinerary of the Wheeler party (1889: 58-74) shows clearly that Henshaw tended to travel in the van or even ahead of the main party. The account alluded to does assist in filling details of the route. From it we know that the main party followed the old wagon road from Fort Wingate to Camp Apache. I have used it and some knowledge of the region to make a trace of the probable route followed (Table IV).

TABLE IV

| Dates               | Field Numbers  | Locality                            |
|---------------------|----------------|-------------------------------------|
| 13 July-18 July     | 430-456        | vicinity of Fort Wingate, N. M.     |
| 19 July             | 457-462        | Nutria, N. M. (a Zuñi pueblo)       |
| 23 July-24 July     | 463-499, 502   | "El Morro," Inscription Rock, N. M. |
| 24 July             | 500-501        | Pescado, N. M.                      |
| 25 July             | 503-504        | Zuñi Pueblo, N. M.                  |
| 27 July             | 505 [-508?]    | Colorado Chiquito, Arizona          |
| 28 July-31 July     | no information |                                     |
| 1 August            | 509-513        | Cave Spring, Arizona                |
| 2 August-8 August   | 514-529 [533?] | Camp Apache, Arizona                |
| 8 August-12 August  | 534-568 [577?] | White Mountains, Ariz.              |
| 13 August-20 August | no information |                                     |
| 21 August-29 August | 578-653 [660?] | Camp Apache, Ariz.                  |



In the above tables I have placed certain field numbers in brackets with a question mark. I believe that these numbers belong with the date and locality noted and were assigned to collections, mostly insects, that I have not been able to trace. Very few of the entomologists who examined and reported upon the material collected bothered to record the field numbers associated with the specimens reported. Ulke, who reported on the Coleoptera, is an exception. Some of the numbers were applied to very mixed lots; 500 is a good example. This was a jar or can of alcoholic specimens and included fish, reptiles, and beetles. The only material that received particular care was the ornithological collection.

I have found no explanation of the hiatus of one week, 13th through 20th of August, during which Henshaw apparently did little or no collecting. He may have been completing preparation of his large collection, he may have been ill, or there may have been some other interruption of his work. The numbers between 568 and 578, which are missing from my records, probably were used on White Mountain insects. Apparently his "White Mountains" locality lay along the East Fork of the White River from Camp Apache to the high land of Baldy and Ord peaks.

#### Camp Apache to Camp Bowie

Wheeler's party of topographers returned from the White Mountains to Camp Apache on August 30th. On that day Henshaw, who had been at Camp Apache for at least a week and possibly a fortnight, left for the south. He was out a week and returned to Apache, finally heading for Camp Bowie on September 6th. He arrived at Camp Bowie, in what presently is Cochise County, on October 6th. He traveled at a leisurely pace and did extensive collecting en route. Number 653 is the last bird-skin number from Camp Apache. However, through the number series to the 750's many specimens are labelled "Apache." Other specimens in this block of 100 numbers show progressively greater distance south from Camp Apache until the Gila River was reached on the 10th of September. At least three others on this southbound party occasionally contributed a specimen to the Henshaw series—Magnet or Maquet, McGee, and Turner. They are not listed among the personnel of the expedition and probably were soldiers detailed to the party, or packers.

The party probably followed a route that more or less parallels the present highway from Fort Apache to the San Carlos Reservoir on the Gila River. They reached the river on the 14th of September and crossed it arriving at Camp Goodwin on the flanks of Mount Turnbull on the 17th. There is some confusion about the next fortnight. I suspect that

TABLE V

| Field Number | "Gila River"  | Camp Goodwin or Mount Turnbull |
|--------------|---------------|--------------------------------|
| 790          | 15.ix & 16.ix |                                |
| 791          |               |                                |
| 792          | 16.ix         | 17.ix (C. G.)                  |
| 793          | 16.ix & 17.ix |                                |
| 794          | 16.ix & 17.ix |                                |
| 795          | 16.ix         |                                |
| 796          | 16.ix         |                                |
| 797          | 16.ix         | 17. "viii" (M. T.)             |
| 798          | 16.ix         |                                |
| 799          |               | 17.ix (C. G.) & 19.ix (M. T.)  |
| 800          |               | 19.ix (M. T.)                  |
| "601" [801]  |               | 19.ix (C. G.)                  |
| 802          |               | 20.ix (C. G.)                  |

the party may have broken into two groups. There are firm dates and places on bird-skin labels that place members at distances that cannot be traveled in a day on horseback. Also there are duplications of field numbers (Table V).

It appears to me from the second set of duplicate numbers that begin with 890 that some of the "Camp Grant" records should be assigned to "Old Camp Grant" on the San Pedro River, near the present town of Feldman, Arizona. There is no question but the party visited the station now called Fort Grant, in the 1870's "Camp Grant," on the southwest flank of Mount Graham. There is a series of Mount Graham field numbers that immediately precedes the first "Camp Grant" number.

The route from Camp Goodwin and Mount Turnbull to Camp Grant skirted the Santa Teresa Mountains and ran between them and the massif of Mount Graham.

The duplicated field numbers at the end of the 800's are listed in Table VI.

All of this suggests that there was a scattering of Henshaw's party from the time it left the Gila to when it again gathered at Camp Bowie. The "San Pedro" specimens appear to have been collected by Maquet. (See Table VII.)

The single bird-skin from Camp Bowie has a proper locality and date but the field number is out of order.

Camp Bowie, Ariz., to Zuñi, N. M.

From Camp Bowie, Henshaw and his party struck north to the Gila River, via San Simon Valley, and reached the river in the vicinity of the present town of Solomonville. By the 14th of October, they reached

TABLE VI

| Field Number | "Camp Grant"           | "San Pedro"           |
|--------------|------------------------|-----------------------|
| 890          | 27.ix                  | 2.x                   |
| 891          | 27.ix                  | 2.x                   |
| 892          | 28.ix "Bowie"          | 2.x as "692"          |
| 893          |                        | .ix (mammal skin)     |
| 894          | 29.ix (2 spec.)        |                       |
| 895          | 29.ix (2, one "Bowie") |                       |
| 896          | 30.ix (2, one "Bowie") | 3.x                   |
| 897          | 30.ix (2, one "Bowie") | 3.x                   |
| 898          | 30.ix                  | 3.x                   |
| 899          |                        | 1.x & 3.x             |
| 900          |                        | 3.x                   |
| 901          |                        | 3.x (2 spec.)         |
| 902          |                        | 3.x                   |
| 903          |                        | ("x Apache" a mammal) |
| 904          |                        | 3.x                   |
| 905          |                        |                       |
| 906          |                        | 3.x "Gila R."         |
| 907          |                        | 3.x & 4.x             |

the mouth of the San Francisco River, a tributary of the Gila. Apparently they camped there a day or so. The route continued to follow the Gila River into New Mexico. They left the Gila at Mangas Creek and via it reached Fort Bayard, New Mexico, on 19th of October. The party stayed at Fort Bayard until the 22nd or 23rd then started for Zuñi. On the 24th they were in Silver City, N. M., and were back on the Gila River on the 25th. It is interesting to note that the specimens collected along the Gila before reaching Fort Bayard all are marked "Gila River, Ariza." and those collected after leaving the fort are marked "Gila River,

TABLE VII

| Dates           | Field Numbers | Locality   |
|-----------------|---------------|--|
| 1-4 September   | 661-699       | "nr. Apache"   |
| 5-7 September   | 700-716       | "So. of Apache"  |
| 8-12 September  | 717-765       | various distances "So. of Apache" and some Gila River labels |
| 14-16 September | 766-798*      | Gila River   |
| 17-19 September | 792-800*      | Canyons of Mt. Turnbull and Camp Goodwin                     |
| 20 September    | 801-802       | Camp Goodwin   |
| 21 September    | 803-811       | Mount Graham   |
| 22-30 September | 812-898*      | Camp Grant   |
| 1-4 October     | 899-[910?]    | "San Pedro"  |
| 6-9 October     | (933)         | Camp Bowie   |

\* overlapping series

TABLE VIII

| Dates          | Field Numbers* | Locality               |
|----------------|----------------|------------------------|
| 14-17 October  | 911-940        | Gila River             |
| 19-22 October  | 946-958        | Fort Bayard, N. M.     |
| 24 October     | 959-964        | Silver City, N. M.     |
| 25 Oct.-4 Nov. | 965-978        | Gila River, N. M.      |
| 5 November     | 980-993        | S. W. of Mogollon Mts. |
| 15 November    | 979            | Tulerosa, N. M.        |
| 19-20 November | 998-1,008      | Salt lakes so. of Zuñi |

\* The field numbers on this part of the trip are somewhat scrambled. It appears that what collecting was done was held for a few days before the material was logged and ticketed.

N. M." On the 5th of November Henshaw was crossing from the Gila to the San Francisco watershed via Duck Creek southwest of the Mogollon Mountains. Specimens from there are labelled "Mts. nr. Gila R., N. M.," or "Mts. source Gila R.," or "Mts. S.W. N. Mex." From here on the pace was increased and little collecting done. Tulerosa, New Mexico was reached on 15th of November, on the 19th the salt lakes south of Zuñi. Henshaw's last specimens for the season were taken at these lakes on the 19th and 20th of November. Henshaw arrived at Fort Wingate on November 27th and his season was closed for the year.

## LITERATURE CITED

- BROWN, F. M., 1956. Itineraries of the Wheeler Survey naturalists. 1871—Theodore L. Mead. *Lepid. News*, 9: 185-190.
1958. Itineraries of the Wheeler Survey naturalists. 1871—Ferdinand Bischoff. *Jour. New York Ent. Soc.*, 65: 219-234 [1957].
- HENSHAW, H. W., 1875. Report upon the United States Geographical Surveys west of the One Hundredth Meridian, etc., etc., Vol. 5, Zoology, Chapt. III, Birds: 132-507. (N. B. All other chapters were scanned for supporting information.)
- WHEELER, G. W., 1889. Report upon United States Geographical Surveys west of the One Hundredth Meridian, etc., etc. Vol. 1, Geographical Report, 780 pp; 38 plates, 3 maps. Washington, D. C.
- YARROW, H. C. & H. W. HENSHAW, 1874. Report upon ornithological specimens collected in 1871, 1872, and 1873. *Geogr. Surveys W. 100th Merid.*, Wash., D. C.