

the perfection of this cicatrix as a firm cement. Yet in one case still living such a hole made at the end of the first whorl was in a few days covered over by a thin hard sheet completely healing the wound in the shell, though as yet too brittle to be of great protection.

ON THE SONORAN SIDE OF THE GULF

BY H. N. LOWE

(Concluded from Page 4)

One afternoon without a breath of wind, a heavy ground swell set in, and by night quite a blow from the southwest. By next day the rocks were swept clean of the olive green algae and the *Trivia* and *Crassispira* had to seek refuge under the rocks. The sand beach for miles was covered with acres of algae at high tide line.

The second afternoon after the storm, I was walking the beach about two miles from camp. Just beyond the acres of algae which contained only an occasional stranded *Aplysia californica*, oozing out its purple dye, there was a narrow strip of tide wash, not over fifty yards in extent, of fragments of ascidians, sponges, and corallines, in this I took about forty fine living specimens of a *Lamellaria* unknown to me; different colored animal from *L. diegensis* and higher spired shell than *L. stearnsi*. The mantle entirely covered the thin translucent shell and could only be removed by cutting across the back with a safety-razor blade.

As I expected, this was a chance of a lifetime, for next afternoon tide all had been either taken back into the sea or ground to fragments in the sand after the storm, for several miles this beach was almost unrecognizable; the rock ledges which had teemed with sea life were covered deep with sand and the intervening places where the sand had been were left bare showing the underlying fossiliferous rock.

One afternoon just as the tide was starting out, we heard a great commotion near the shore. It was a huge school of several thousand *corbina* (a game fish about three feet in length), pursuing a vast number of sardines, anchovies, &c. The pursuers drove their prey into our little cove, where they simply went

wild feeding on the small fish as they jumped out of the water in every direction. All the native population rushed down to the beach, simply walked into the water and caught with their hands in a few minutes all they could use for several days. Phil took a dozen fine fish in a short time. One of the dogs decided he wanted to be a fisherman too, so he swam out and brought in unaided seven large fish which he dragged up to tide line, shook and bit them until dead and then went back for more.

In half an hour the fun was all over, for the large fish headed out into the gulf once more to continue the pursuit of their prey. They kept within sight and sound of our camp for two days thereafter. Thousands of the small fish were stranded among the rocks by the rapidly falling tide. The corbina when freshly caught are one of the finest and most delicately flavored game fish in the world, but the fishermen claim do not ship well. The fish trucks with a load of ice usually arrive about sundown so the *pescaderos* could start out early next morning to locate a school of tortuava. While we were there, the fish brought in were all males or "macheros" as the native called them, and are somewhat smaller than the females and have a narrow head.

The fishing fleet usually returned in the late afternoon with their catch, which was quickly taken to the sand beach where heads were severed with one blow from a heavy ax; they were then drawn and washed clean ready to be weighed and packed in ice for their five hundred mile run to San Pedro, California, for general distribution.

An export duty is charged in kilograms by Mexico and an import in pounds by the U. S. A.; so they literally get them "going and coming" and with the high cost of transportation and the low selling price of fish the poor *pescaderos* fared rather badly. Some days the boats returned absolutely empty. However, one day shortly before the full moon, we watched them clean, weigh and pack in ice ten tons of fish on the beach by moonlight.

The sea birds at Punta Peñaseo swarmed in unnumbered thousands, pelicans, terns and sea gulls, the latter feeding all day on the fish heads and offal, seemingly never satisfied. The boobies and tropic birds were said to be nesting on Georges Island, a bird rock about twenty-five miles south of us, so we saw nothing of them at Punta Peñasco.

Although we had few cloudy days when we could see it raining on the Pinacates off to the north and on the San Pedro Martyrs in Lower California, not a drop fell in our camp. On three nights however there were heavy dews when everything would be dripping in the morning. I suppose those are times when all the little furry inhabitants of the desert have a real drink of water.

When our daily catch of small birds, pack rats, pocket mice, kangaroo rats, gophers, &c., was extra good, the natives came over in the afternoon to admire the "Pajaritos" and watch Mr. Huey prepare the skins of the "ratoneitos." I think Mr. Huey prepared about one hundred and eighty-six mammal skins, including one very beautiful skunk, and some ninety interesting and very beautiful land birds. No shore birds were taken. But when they saw the snake charmer draw a harmless gopher snake out of his bed one morning, that was the last straw. A snake was a snake to them whether a rattler or some nonpoisonous variety. At this time of the year the snakes and lizards were few and far between, although in hot weather there are myriads of them.

Besides fish and clams on our bill-of-fare we had one mess of quail, also one each of rabbit and wild duck and on one occasion we tried octopi (boiled and then fried), which proved a very savory dish, much favored in most foreign countries.

I had three good mornings of dredging, about two miles off shore in six to ten fathoms, mostly broken shell bottom. By some chance each time came on a Sunday morning. Either the tide was too low to be missed for shore work, the boats were all out fishing or the weather unfavorable. The dredgings netted some very excellent results in small material, several things I had before taken and may prove to be new species.

After three delightful and profitable weeks at Punto Peñasco, the last day proved to be the only really, disagreeable one. A gusty northwest wind blew all day, and sand was in everything. The wind gradually abated after sun down and by the aid of a glorious full moon we packed our camp outfit and started on our homeward trek at 7:30 in the evening.

The worst spots through the sand hills had been newly brushed,

(owing to an assessment of five pesos per truck to which we gladly contributed); two fish trucks which had been broken down in the road had been repaired and taken away; our load was over a thousand pounds lighter than when we came out. We let out half the air pressure in our tires and we had learned considerable about desert driving through soft sand. At any rate we started out with an absolutely cool motor and went through those sand hills afflying, mostly in second year, shifting only a few times into low gear.

After we were safely out of the sand hills, we made a camp in the open desert and slept till morning. The full moon made all the fantastic desert vegetation visible as well as the distant mountains. We drove all the following night and arrived in San Diego at three a. m. after a most successful and enjoyable expedition.

LAND AND FRESHWATER SHELLS FROM THE VICINITY OF YAKIMA, WASHINGTON

BY WALTER J. EYERDAM

I had intended to publish the following list several years ago but did not take time to do so before. During the winters of the years 1924, 1925 and 1927, in the months of February and March, I often made short excursions in and around Yakima in search of shells.

The best collecting was had below Yakima and nearly as far as Union Gap, especially in debris left by freshets and in the little ponds and swamps. Irrigation ditches and wet meadows were also prolific with some of the freshwater shells and *Succinea*. Several trips were made to the Rattlesnake Hills and other mountains but not a single specimen of mollusk was found except at the bases of some of the mountains. I believe that, after the intensive searches made on numerous occasions in the vicinity of Yakima, very few more species can be added to the list. The dry hills, which are mostly of disintegrated lava seem to be very poor in shells.

Practically all my collecting was done in the month of Febru-



Lowe, H N. 1934. "On the Sonoran side of the Gulf (concluded)." *The Nautilus* 48, 43–46.

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