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THE
GOLDEN STATE

SCIENTIST.

A Monthly Journal Devoted to Zoology, Geology, Archaeology, Botany, Numismatics and Philately.

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E. M. HAIGHT,

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The Golden State Scientist.

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CALIFORNIA DIAMONDS.

For a period of more than thirty years the placer miners of California have occasionally picked up small diamonds. The hydraulic washings at Cherokee, Butte county, have been the most prolific. The diamonds are usually found by the miners when cleaning up their sluices or while washing off the bed rock, though in some few instances they have been picked up on the surface. As a general thing the gravel in which they occur is mixed with lava, ashes, or other volcanic matter; zircon, platinum, iridium, magnetite, etc., being associated with the diamonds. While many of these stones have been of good color, brilliant and perfect, none weighing over $3\frac{1}{2}$ carats have been found in the state. In size they have ranged usually from about half a carat down to stones of microscopic dimensions, the latter being numerous in a few localities. So far as known, \$500 is the highest price for which any California diamond in the rough has been sold, though large numbers have found purchasers at prices ranging from \$10 to \$50, and not a few at as much as \$100. The stones have been all colors, white, yellow, straw and rose, and many of good water. A few small diamonds have been found also in the placer diggings of Idaho, being of about the same quality and occurring under the

same conditions as in California. In neither region have diamonds been made the object of special search, those found having been picked up by miners while washing gravel for gold. Fragments of diamonds have been noticed in the tailings from the quartz mills, being the remains of stones which have been broken under the stamps.—*C. G. Yale, in "Precious Stones."*

THE RESURRECTION PLANT.

This singular plant is really one of the wonders of creation. Imagine a bunch of withered looking, curled up shoots, brown, stiff, and apparently dead, resembling a bird's nest. Place it in water, in half an hour what a transformation! The withered looking bunch has now opened and is transformed into a lovely patch of moss, entirely covering an ordinary plate. In its native habitat, when the dry season sets in, the plant curls up into a round ball and is wafted away by winds from place to place, sometimes for hundreds of miles, when at last it reaches a moist spot it gradually unfolds itself, makes new roots and thrives in its new found home. This sensitiveness to moisture is so great that even after the plant may seem dead it will open and close as if it were alive.—*F. M. Gilham's Catalogue.*

THE CABINET AS AN EDUCATOR.

BY FRANK E. FOSTER.

Comparatively few young people of today take an interest in a collection of relics and specimens of a geological and botanical nature, and yet I do not hesitate to say that as an educator in the scientific studies a better one cannot be found. A number of terms of close application to some good text book may give the student a medium understanding of the subject; but a cabinet containing a goodly number of specimens, and a full knowledge of the nature and formation, mayhap, is far preferable, I think, than a mere outline of the entire subject under consideration.

Though I have been a collector but a few years, yet the benefit I have obtained from my work in this line has helped me far more than the perusal and study of various works on the different sciences. My hobby, for I suppose each collector has one, is historical relics, and consequently my cabinet is, for a greater part, made up of specimens of that nature. This study of all studies, History, however, has been made more interesting, and my knowledge and understanding of it has been made clearer and more fascinating by my association with objects that had been utilized in the past—mayhap in war—perhaps in peace—with whose history I must necessarily be acquainted, to attach any interest thereto. This naturally starts one to thinking, and a desire to know more of the times that cluster around some particular object, is sure to spring up; and thus one goes on, step by step, until a good foundation of this study is formed, and all that is needed is the perusal of some standard history that deals more minutely with the subject, to give one a full knowledge of history. So it is with geology, botany, and even numismatics brings up events, places, persons, etc., as one studies the coins and medals of by-gone ages.

I have found my cabinet a most amiable teacher and would dislike very much to part with the knowledge I so easily and pleasantly acquired by daily association with it.—[Youth's Ledger.

Picotite, a chrome spinel, has been found in the basalt of Mt. Shasta, Cal.

APPROVAL SHEETS—THEIR USE AND ABUSE.

BY GENTE.

The system of sending out stamps on approval is practiced by nearly all dealers and has grown within a few years to enormous proportions. The majority of collectors prefer buying their stamps from sheets instead of from price lists, as in the sheet system they have the stamps before them and know what condition they are in before buying. This system also affords a large number of collectors a chance to get their stamps for nothing, by acting as agent in their locality for some dealer. The commission allowed on sales can be taken in either cash or stamps, many collectors preferring the latter. There are many abuses connected with the sheet system, and of these I desire to speak particularly.

One of the commonest methods practised by dishonest collectors is "substituting." After receiving a sheet he takes off some of the stamps, substituting others of less value in their place. To any who practice this I would say do not do it, as the dealer in ninety-nine cases out of a hundred will detect it, and you thus forfeit your self-esteem, in addition to the good opinion of the dealer, who, of all persons, detests the "substitute fiend" the most.

When you receive a sheet with unused stamps on don't send it back with the stamps "hammered down" and stuck all over. If you do, the dealer will have to waste much time in getting them off (often destroying a stamp), and then their value as unused stamps is gone, the gum being off the back. In many cases I have had to put a sheet in a vessel of water to soak, in order to get the stamps off, something that would not happen if collectors would only exercise care and judgment. Stamps should never be "hammered down," and nothing so pains a true philatelist as to see a beautiful stamp glued to a page.

Collectors should never mark or write on sheets, as dealers expect to use them again, which they cannot do if they are covered with pencil marks. Always fold the sheets as they were originally folded, and in returning use the printed envelope sent by nearly all dealers.

These few hints, I trust will prove of benefit to the readers, and if they will only be guided by the instructions given, much of the evil that now falls to the lot of a dealer will be abated.—[Youths Ledger.

THE GOLDEN STATE SCIENTIST

Entered at the post-office as matter of the second class.

HOW THE PLATYPUS BREEDS.

This question is now satisfactorily settled. The platypus lays eggs, and Mr. Caldwell, Natural History Fellow of Caius College, Cambridge, has been credited with the honor of the discovery. Mr. Caldwell, though not responsible to any scientific body in this country, was nevertheless good enough to appear before the members of the Linnean Society of Sidney, and verify his discovery. He exhibited the eggshells, made a statement, and answered all questions put to him. The eggs were round rather than oval, the shells hard and of a calcareous composition. Mr. Caldwell dissected over 600 female specimens before getting one with an egg in it. The female in which the egg was found had layed an egg just shortly before she was caught, and the embryologist, who had suffered so many disappointments from a similar cause, feared that he was to be again doomed to disappointment; but such, however, was not the case, for on dissection another egg was found, and then, and not till then, was this vexed question decided. It is no exaggeration to say that this is one of the most notable and scientific discoveries of the nineteenth century. Students to the philosophy of Dar-

win are quite alive to the importance of this discovery, and it has been hailed with delight by Professor Mosely and many other eminent scientists. The platypus (*Ornithorhynchus*) has bridged the hiatus that hitherto existed between birds and mammals; in other words, the most important of Darwin's "missing links" has been discovered, and the chain of connection between reptiles and man is now very nearly complete. Much credit is due Professor Liversidge, of the Sydney University, for the promptitude with which he cabled the discovery to the Royal Society, then sitting at Montreal; and I am personally much indebted to that gentleman for kindness in furnishing me with Mr. Caldwell's address and forwarding him my letters. I shall be very thankful to your correspondent, "Platypus," if he will forward me those spirit specimens of platypus eggs to the Australian Museum, Sydney. During my absence from Sydney Mr. Ramsey has kindly promised to take charge of all specimens that may arrive for me at the museum. *Australian Exchange.*

The platypus, commonly known as the duck-bill, is found in Van Diemen's Land and Australia. In its bill-like jaws, its spurs, its monotrematous character, its non-placental development, and its anatomy, it appears to be a connecting link between birds and animals. *Ea.*

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Dont forget to read our premium offer, which appears on another page. We have a large quantity of natural history specimens and curiosities on hand which we will list as soon as possible, and you may be sure of getting something you want for sending us subscriptions.

We sometimes receive long lists of specimens from parties who want us to add the prices

that we will pay. We are too busy to do this for a possible trade. If you have anything to sell state your lowest cash price. A frank seller knows his prices and will state them.

GODDESS OF NATURAL HISTORY.

In the national museum at Washington is a well preserved fragment of a mosaic from the ruined temple of Astarte at Carthage. This goddess may perhaps be called the patron deity of museums since, one of the earliest, possibly the earliest, of reference to the preservation of specimens of natural history is connected with her name, and with a still more ancient temple dedicated to her. When Hanno the Carthaginian sailed down the coast of Africa somewhere about 500 before Christ, he discovered and killed certain large apes, supposed to have been Gorillas. According to the records of his voyage these were flayed, the skins brought back to Carthage, and there deposited in the temple of Astarte. Here they remained for some 350 years, or until the city was captured by the Romans. Evidently the old Carthaginian taxidermists must have used an excellent article of arsenical soap.—Natural Science Bulletin.

SILVER SWORD.

This strange plant is found but in one place in the world, and that is in the Hawaiian or Sandwich Islands, near the Tropic of Cancer in the Pacific Ocean. It looks like a blade of grass, but is covered with a kind of down of a beautiful silvery white. Hence the name. It grows wherever it can find soil. A great many of these blades grow on a head resembling a cabbage. The wild goats which inhabit the mountainous districts obtain their scanty existence upon it and only upon the sides of the precipices and out of the reach of these creatures can it be found. It is therefore a rare plant, even in its native country, as it is a very dangerous undertaking to try to procure it. It grows on the volcanoes and in fact in any crevice where the rich volcanic soil accumulates.—Naturalists Journal.

The Indian farmers on Pyramid Lake, Nev., thresh their wheat by hand and winnow it in baskets just as the Egyptians did three thousand years ago.

CHUCKWILLS WIDOW.

Anthrostomus Carolinensis.

The Chuckwills widow is one of our rare summer residents; arriving about the first week in May, perhaps sooner in extreme cases in other localities.

I can always mark its arrival by its plaintive note, which can be heard just as the sun sinks behind the horizon, and is kept up alternately till a late hour. The sound of its note is exactly similar to its name only the "Chuck" being rather short. Its nesting place is generally on oak ridges. Its nest is nothing more than a slight depression in the ground near an old decayed log or bush. Both the male and female are hardly discernable from the Whippoorwill both in color and size only the former being a size larger.

I relate here a few incidents of one of my collecting trips last summer, which I hope will be interesting to my fellow collectors.

On May 25th I was out collecting and come upon a nest of the above species. At the time I thought I had found my desired treasure; but to my great disappointment I soon observed two little downy creatures of a light brownish color that had just rolled out of the shell; I did not know at the time exactly what to do, but meditating a few moments upon the subject a new plan entered my mind: I concluded to destroy the young and watch the parent birds. I watched the place where they had their previous nest daily for about a fortnight. So on the aforesaid date (June 7) about 12 o'clock m., I started to the locality in which I had found the previous nest. It was only 500 yards from my father's residence so I was soon upon the

spot. I searched in every nook and corner until at last I thought it was all in vain, so I retraced my footsteps towards home; but just as I turned I espied the male perched on a decayed log. I knew the female must be near, so I commenced to search again in every direction, and as I neared a small swamp I came upon the female. As soon as she flew I rushed to the spot and to my great delight I descried my long sought for treasure—a set of two of the most beautiful specimens of oology.

It was one of the happiest events of my collecting life as far as I have experienced. Their color is of a clear crystal white, marked over the entire surface with blotches of dark purplish brown and light lavender, with occasional marking of umber. Taking it altogether, I think that the eggs of the foregoing species are the most beautiful I ever saw. They depart for their southern home about the last week in August; the exact date I am unable to say.

D. L. FOXHALL, Oxford. N. C.

There is a species of ant in Texas which makes honey equal to any that is produced by bees. The little insects store the honey, as they gather it, in a pouch about the size of a small pea that is attached to their bodies. When this pouch is full, they march into the cells of their subterranean habitations, and there unload.—*Milwaukee Naturalist.*

We shall depend on you all to make this monthly interesting and will gladly publish any contributions relating to natural history, coins, stamps, etc., that you may send us.

· CHINESE MONEY.

It is only the present dynasty, the *Ta Ts'ing* Mandchu, who issued a regular and efficient mintage. From the time of the Ming dynasty the year-names have been reduced to one for each reign, so that the legend was henceforth the same for the whole mintage of a ruler.

Regularity in standard is now fairly secured in the issues from the mint of the Board of Finance in the capital, which are the pattern for the provincial mints; but the shrinking of the cool metal, when frequently repeated by the casting from moulds made from pieces and not from the pattern, produces sometimes a sensible difference, which is certainly not disadvantageous to some of the mint masters. The authorized proportion of the alloys was, till 1722, copper, 50; zinc, $41\frac{1}{2}$; lead, $6\frac{1}{2}$; tin, 2; after that time the composition consisted of equal parts of copper and zinc. The obverse bears the name of the reign, read from top to bottom, and the words *tung pao*, or "current money," from right to left. On the reverse the name of the mint in Chinese, or in Mandchu and Chinese, or in Mandchu only. There has been only one dark period in the present mintage, which for the time sunk to the lowest level during the great Taiping rebellion. The supply of the copper mines was stopped, and it was necessary to cast iron money, the worst of its kind that ever was made.

Silver circulates generally, cast in ingots, in shape rudely resembling shoes, and for that reason called shoe-silver, with the exception of two unsuccessful (because counterfeited) attempts in 1835 and 1856 to cast silver dollars; the government never issued silver money. In Fukkien province and Formosa island in 1855, a large issue of native dollars was made to pay the troops on that island; the legend was, Pure silver for current use from the Tchang tchon commissariat (weight) seven mace two candareens. At Shanghai, in 1856, the taels, or dollars, were of the same weight and purity (417.4 grs. troy); and besides the inscription in Chinese and in Mandchu, they had an effigy of the god of longevity on the head, and a tripod on the tail to authenticate the official origin. Gold, cast in ingots, also circulates by weight.

Private individuals have sometimes caused silver to be cast as money; but they are generally satisfied to make, with European appliances, imitations of the Mexican and old Spanish dollars which are in currency; these, as they pass from hand to hand, are punched with the seal or stamp of the owner by way of indorsement; and when the marks are so numerous that there is no room left on the coin for more, they are melted.

PROF. LA COUPERIE,
In *Keystone S. and C. Gazette.*

A ROAD-BED OF SALT.

In the Colorado desert, near Idaho, there is a large bed of rock salt, and the Southern Pacific R. R. in laying the track to the salt bed have been obliged to grade the road for twelve hundred feet with blocks of these beautiful crystals. This is the only instance where a railroad's road-bed is laid and ballasted on salt. The sea which once rolled over this place dried up, and left a vast bed of salt nearly fifty miles long. The supply is inexhaustible, and the quality excellent. Grasshoppers and centipedes of gigantic size have been pickled in this chloride of sodium, and after a lapse of many centuries they are to-day in full size and perfection of shape.—*Agassiz Companion.*

THE ORIGIN OF SALT.

This world was once a haze of fluid light, as the poets and the men of science agree in informing us. As soon as it began to cool down a little, the heavier materials sank toward the center, while the lighter, now represented by the ocean and the atmosphere, floated in a gaseous condition on the outside. But the great envelope of vapor thus produced did not consist merely of the constituents of the air and water; many other gases and vapors mingled with them, as they still do to a far less extent in our existing atmosphere. By and by, as the cooling and condensing process continued, the water settled down from the condition of steam into one of a liquid at a dull red heat. As it condensed it carried down with it a great many other substances, held in solution, whose component elements had previously existed in the primitive gaseous atmosphere. Thus the early ocean which covered the whole earth was in all probability not only very salt, but also very thick with other mineral matters close up to the point of saturation. It was full of lime and raw flints and sulphates and many other miscellaneous bodies. Moreover, it was not only just as salt as at the present day, but even a great deal saltier. For from that time to this evaporation has been constantly going on in certain shallow, isolated areas, laying down great beds of gypsum and then of salt, which still remain in the solid condition, while the water has happened in a slightly different way with the lime and flint which have been separated from the water chiefly by living an-

imals, and afterwards deposited on the bottom of the ocean in immense layers, as limestone, chalk, sandstone and clay. Thus it turns out that in the end all our sources of salt supply are alike ultimately derived from the briny ocean. Whether we dig it out as solid rock salt from the open quarries of the Punjab, or pumped up from brine wells sunk into the triassic rocks of Cheshire, or evaporate it direct in the salt pans of England and the shallow salines of the Mediterranean shore, it is still at bottom essentially sea salt. However distant the connection may seem, our salt is always in the last resort obtained from the material held in solution in some ancient or modern sea. Even the saline springs of Canada and the northern states of America, where the wapita love to congregate, and the noble hunter lurks in the thicket to murder them unperceived, derive their saltiness, as an able Canadian geologist has shown, from the thinly scattered salts still retained among the sediment of that very archaic sea whose precipitates form the earliest known life-bearing rocks. To the Homeric Greek, as to Mr. Dick Swiveller, the ocean was always the briny; to modern science, on the other hand, (which neither of those worthies would probably have appreciated at its own valuation,) the briny is always the oceanic. The fossil food which we find to-day on all our dinner tables date back its origin primarily to the first seas that ever covered the surface of our planet, and secondarily to the great rock deposits of the dried up triassic inland sea. And yet even our men of science habitually described that ancient mineral as common salt.—*Cornhill Magazine*.

THE SENSITIVE PLANT.

The sensitive plant is a name commonly given to very delicate species of the MINOSA—on account of the peculiar phenomena which is exhibited in their pinnæ or leaves and stalk when touched or shaken. All species of the minosa possess this singular property to a greater or less degree, but is more particularly noticeable in the half-shrubby, herbaceous plants, indigenous to our western prairies and also to the llanos of Brazil, where the stems are prickly, and some of the species possess small heads of beautiful rose-colored flowers. This plant is one of the most peculiar plants found in nature, and upon being approached in its wild state, lifts its head, seems to look at you very appealingly, and then drops suddenly, shrinking back in great alarm, its leaves and stem appearing to wilt under your raptured gaze. After you have passed on, the earth having ceased its vibrations, the plant raises its head, quivering and trembling, as if not fully recovered from its shock, and in a few moments it is all right again.—*Naturalist's Companion.*

SINGING SANDS.

For ages the wild Arab had known that there was the mystery of music among the sands of Jabel Nakous or the "Mountain of the Bell," about three miles from the gulf of Suez. Jabel Nakous and one other locality, in the neighbor-

hood of Cabul, were the only places known where the glistening sands sang their evening hymn, until Hugh Miller, author of "The Old Red Sandstone," etc., in his "Cruise of the Betsey," gave an account of a third locality which he himself discovered.

Miller says: "It seemed less wonderful that there should be music in the granite of Memnon, than in the loose Oolitic sand of the Bay of Laig. As we marched over the drier tracts, an incessant *wooo, wooo wooo* rose from the surface that might be heard in the calm some twenty or thirty yards away, and was easily evoked by the foot."

And now a locality on the shores of Massachusetts has been found where the sand have a similar musical tendency.

Not to be outdone in anything, the sands on the shores of San Diego have a music of their own equal in sweetness to the singing sands of all other localities, presenting the beautiful phenomenon that ever since it was first observed has given rise to more or less superstitions.—*West American Scientist.*

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