



S-W 516.2

WES

8344

BOUND 1938

HARVARD UNIVERSITY.



LIBRARY

OF THE

MUSEUM OF COMPARATIVE ZOÖLOGY

---

12,423

EXCHANGE





OCT 2 1890

12, 423.

# The West American Scientist.

VOL. V, No. 1.

SEPTEMBER, 1888.

WHOLE No. 39.

PRICE: 10 cents; Annual Subscription, \$1.00; Life Subscription, \$10.00.

Published monthly by C. R. ORCUTT, Editor and Proprietor, San Diego, Calif.

## Le Naturaliste Canadien

32-page, 8-in., illustrated monthly.

**\$2.00 A YEAR.**

The only publication in the French Language, on Natural History on this continent.

It is actually pursuing a revision of Hymenoptera with descriptions of several new species and the history of Hemiptera of the Province of Quebec.

Address, **L'Abbe Provancher, Capbrouge, Q., Canada.**

## INDIAN MOCCASINS

BEAUTIFULLY BEADED, NOISELESS FOR hunting, valuable as curiosities and relics, and as presents, comfortable for the sick-room, and other home wear, soft and warm for tired feet and invalids. Ladies' and gents' sizes, \$2.00 per pair, postpaid.

G. G. MEAD, Ferris, Wyoming.

## CLASSIFIED ADVERTISEMENTS.

A TWO LINE CLASSIFIED ADVERTISEMENT, only 25 cents a month; \$3.00 a year payable in advance. Each additional line, 10 cents a month, \$1.00 a year. Must be acceptable and paid in advance. Copy of paper free to each advertiser each month while advertising continues.

### BOOKS.

SCIENTIFIC BOOKS AND MAGAZINES FURNISHED by C. R. Orcutt, San Diego, Cal. Old Books wanted in exchange.

TALMAGE'S SERMONS (14) TO THE WOMEN OF America, with practical hints to men, 10 cents. The Gospel Herald, 333 Day-street, Princeton, N. J.

### SHELLS.

MY PRICE LIST OF LAND SHELLS FOR 10 cents. Over 500 varieties. C. R. Orcutt, San Diego, Cal.

### SEEDS.

C. R. ORCUTT, SAN DIEGO, CALIFORNIA, Collector and importer of all kinds of tree, shrub and flower seeds. Californian seeds, bulbs and plants a specialty; also ferns and rare cacti.

### MINERALS.

A LARGE STOCK OF FINE AMERICAN AND foreign minerals, Western minerals and fossils a specialty. Lists in preparation. C. R. Orcutt, San Diego, California.

## Pacific Coast Steamship Company

The Elegant and Thoroughly Equipped Steamers of this Company sail in Sight of Land the whole distance from San Diego to Alaska.

### Leave San Diego:

CITY OF PUEBLA—September 8, 15, 22, and 29.

SANTA ROSA—September 4, 11, 17 and 24.

### Leave San Francisco:

CITY OF PUEBLA—September 3, 5, 19 and 27—at 8 A. M.

SANTA ROSA—September 1, 9, 14, 22 and 28—at 2 P. M.

Freights received for all points North and East, from 7 A. M. to 5 P. M., every day except sailing days and Sundays.

For further information apply at the Company's offices at the wharf, foot of Fifth street.

**J. H. SIMPSON, Local Agent.**

Every Student of Nature should Subscribe for

## 'THE SWISS CROSS'

Organ of the Agassiz Association; Edited by the president, Harlan H. Ballard. Beautifully illustrated, simple, popular in style, reliable and accurate.

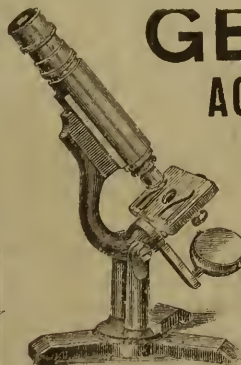
**\$1.50 a Year. Issued Monthly.**

With this magazine, \$2.00 a year.

Address, **WEST AMERICAN SCIENTIST, San Diego, California.**

FLORA OF SOUTHERN AND LOWER CALIFORNIA. A Check-List of the flowering plants, ferns, lichens and marine algæ. By C. R. ORCUTT. Price, 25 cents.

SAN DIEGO. CLIMATE, TOPOGRAPHY, PRODUCTS, etc. By DOUGLAS GUNN. 78 pp, with map, 25 cents.



## GET THE NEW ACME No 5 MICROSCOPE

Complete, with high-class lenses, 1 in. and 1-5 in. \$28.00.

Send for complete catalogue B, and sample of The Microscopical Bulletin.

**JAMES W. QUEEN & CO.** Makers of the Acme Microscopes, 924 Chestnut St., Phila.

# **E. M. HAIGHT'S BARGAIN LIST.**

**Box 24, Riverside, Cal.**

TERMS—Cash with order, and if in amount less than 25 cents, add 4 cents extra for packing and return postage.

## **BIRDS' EGGS.**

Eggs are all perfect, one hole, side blown. The figures in parenthesis indicate the number of eggs in a set. All others are single.

Western Grebe 25c; Tufted Puffin (1) 75c; Pigeon Guillemot 25c; Western Gull (3) 15c; American Herring Gull (3) 15c; Laughing Gull (3) 10c; Common Tern (3) 4c; Black Skimmer 8c; Farallone Cormorant (3) 50c; Brandt's Cormorant (3-4) 25c; Baird's Cormorant (3) 25c; Roseate Spoonbill 50c; Snowy Heron 8c; Louisiana Heron (3-4) 8c; Green Heron (4) 5c; Black crowned Night Heron 8c; Yellow-crowned Night Heron (3-4) 20c; Clapper Rail 5c; Purple Gallmule 15c; Coot 5c; Willet 20c; Spotted Sandpiper 5c; Killdeer 10c; Wilson's Plover 15c; California Quail 5c; Valley Quail 5c; Prairie Hen 10c; Mourning Dove (2) 2c; Zenaida Dove 50c; Swainson's Hawk 50c; Sparrow Hawk 15c; Barn Owl (4-5) 15c; California Screech Owl 40c; Burrowing Owl (5-6) 15c; Road Runner 15c; Nuttall's Woodpecker 75c; Flicker 4c; Red-shafted Flicker 5c; Scissor-tailed Fly Catcher 8c; Kingbird (3-4) 3c; Arkansas Kingbird 5c; Cassin's Kingbird (3) 20c; Ash-throated Fly Catcher 15c; Phoebe 3c; Black Phoebe 10c; Baird's Fly Catcher 15c; Ruddy Horned Lark 20c; Green Jay 65c; Crow 5c; Cowbird (1) 3c; Red-winged Blackbird (4) 2c; Bi-colored Blackbird 4c; Tri-colored Blackbird 10c; Meadow Lark 8c; Western Meadow Lark 5c; Arizona Hooded Oriole 40c; Orchard Oriole 4c; Bullock's Oriole (4-5) 8c; Brewer's Blackbird 4c; Purple Grackle 4c; Bronzed Grackle 4c; Boat-tailed Grackle 4c; Crimson House Finch (4-5) 4c; Goldfinch 5c; Green-backed Goldfinch 10c; Lawrence's Goldfinch 15c; Western Lark Sparrow 8c; Chipping Sparrow 2c; Field Sparrow 3c; Bell's Sparrow 75c; Song Sparrow (4 5-6) 2c; Heerman's Sparrow 8c; Samuel's Song Sparrow 5c; Spurred Towhee 15c; California Towhee (4) 5c; Cardinal Grosbeak (3) 4c; Rose-breasted Grosbeak 10c; Black-headed Grosbeak 10c; Purple Martin 10c; Cliff Swallow 2c; Barn Swallow 2 cents; Bank Swallow 4c; Phanopepla 40c; White rumped Shrike 4c; Warbling Vireo 10c; Bell's Vireo 8c; Mocking Bird (4) 4c; Cat Bird 2c; Brown Thrasher 2c; California Thrasher 15c; Cactus Wren 8c; Rock Wren 40c; House Wren 4c; Parkman's Wren, 4c; Plain Titmouse, 25c; Bush Tit 10c; California Bush Tit 15c; Yellow-headed Tit 40c; Robin 3c; Blue Bird 2c; Western Blue Bird 8c; English Sparrow 4c.

## **CURIOSITIES:**

Alligator Teeth 5c; Buffalo Teeth 10c; Bird's Wings (3 varieties named) 5c (15 varieties named) 25c; Crazy Weed Pods 3 for 5c; Cactus Wood, 5 to 25c; Sycamore Tree Balls, 3 for 5c; California Ground Squirrel Tails 10c; Chinese Chopsticks, per pair, 8c; Chinese Game Cards, 3 for 5c; Chinese Slow Matches 5c; Chinese Game Stones, 2 for 5c; Chinese Coins (very old) 5c; Chilacothé Bean Pods (large and curious) 15c; Coral (small white branching) 5c; California Live Oak Tree Acorns, 3 for 5c; California Live Oak Tree Balls 5 to 10c; Clear Quartz 5c; Gold-Dust Sand (S A) per package, 10c; Horse-shoe Crabs 3 to 10c; Hawk Moth Cocoons 10c; Horned Toads, stuffed, 50c; Indian Arrow-Heads 5 to 25c; Japanese Paper Napkins 2 for 5c; Liver Beans 5 to 10c; Money Cowry Shells 2 for 5c; Pampas Grass Plumes, each, 15c, 2 for 25c, 5 for 50c, 12 for \$1; Porcupine Quills, per doz. 5c; Petrified Wood, very fine, 5c to \$1; Sand Tubes 5c; Skate's Eggs 5c; Shark's Eggs 15c; Sea Urchins, Atlantic, 10c; Sea Urchins, Pacific, 5 to 10c; Mud Wasp Nests 5 to 25c; Star Fish, small Atlantic, 5c.

## **MINERALS.**

Vermaculite on Quartz, 5c to \$1.25; Idocrase, 5 to 60c; Garnet (Alumin) 5 to 60c; Asmanite, 5 to 25c; Tin Ore (Cassiterite) 5 to 70c; Calcite 5c to \$1.00; Dufrenite 5 to 80c; Obsidian, jet black, 5 to 30c; Petrified Wood, very fine, 5c to \$1.

## **SPECIAL OFFERS.**

All parties sending me \$1 for a year's subscription to this magazine will be given 50 cents worth of any of the above specimens as a premium. All ordering specimens from any of my lists amounting to \$1.25 will receive this magazine free for one year. Send 2c stamp for Price Lists. None Free.

E. M. HAIGHT, Collecting Naturalist,  
Riverside, California

P. O. Box 24.

4190

## THE OPEN COURT.

Published Weekly at 169 LaSalle Street,  
Chicago, Ills.

A Journal devoted to Science, Philosophy & Morals.  
Send for Free Sample Copy.

Price \$2.00 a Year.

P. O. Drawer F.

## BOOK CHAT!

Brentano's, Publishers, 5 Union Square, N. Y.

Book Chat contains monthly a complete index to the periodical literature of the world. Indispensable to Botanists, Conchologists, Geologists and Scientists generally. \$1 a year; 10c. for a single copy.

—THE—

## AMERICAN GEOLOGIST!

IS A MAGAZINE

Devoted to Geology and Allied Sciences--the only one in America--published by a number of Professional Geologists distributed over the central part of the United States. Three Dollars a Year.

Address THE AMERICAN GEOLOGIST,  
Minneapolis, Minn.

—THE—

## CALIFORNIA FLORIST:-

ONLY \$1 00 A YEAR.

An Illustrated Monthly Journal for Florists, Nurserymen, Seedsmen and Amateurs, with departments of Home Recreation, Vegetable Gardening and Popular Science. Sample Copies 10c. Address

FLORIST PUBLISHING Co., Santa Barbara, Cal.

## FOR 50 CENTS.

We will send you for one year

—THE—

## CONCHOLOGISTS' EXCHANGE

The Only Shell Paper in America.

16 Pages Monthly, and full of the Latest  
and Best Shell News.

And the following Handsome Premiums:

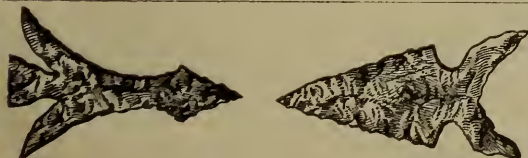
A neat box of Choice Land Shells, Fresh-Water Shells, or Marine Shells, or Berlin H. Wright's New Check List of North American Fresh Water Bivalves, or D. D. Baldwin's Land Shells of Hawaii.

Don't wait, but send 50 cts. NOW to

WM. D. AVERELL,

PUBLISHER,

Chestnut Hill, Philadelphia, Pa.



100 VARIETIES of Beaded Buckskin and War Relics of the Sioux of Dakota, Apaches, Pueblos and Navajoes of New Mexico. A large stock of Oregon and other States' Stone Relics of all kinds. All the leading Minerals and Fossils of the Black Hills and Dakota Bad Lands. Wholesale and retail. Send for large, illustrated catalogue.

L. W. STILWELL, Deadwood, D. T.

"The finest periodical of the kind in the world."

—Boston Herald.

## GARDEN AND FOREST.

An Illustrated Weekly Journal of Horticulture, Landscape Art and Forestry, conducted by Prof. C. S. Sargent of Harvard College. Single numbers 10 cents, \$4 00 a year.

Agents wanted in every town and village of the United States. GARDEN & FOREST PUB. Co., Tribune Building, New York.

## SEEDS! BULBS! PLANTS!

CURRIE BROS.,

—SEEDSMEN AND FLORISTS—

MILWAUKEE, WIS.

## ALL FOR 25 CENTS.

A fine Indian Arrow-head, Piece of Pottery, Starfish, Sea-urchin, Shark's Egg, 3 minerals, Chinese Coins, 14-page price-list of curiosities, etc., copy of COMMON SENSE, a 16-page magazine for collectors 35c per year.

F. A. THOMAS, Publisher,  
Mexico, New York.

THE GEOLOGISTS' GAZETTE is the best 25c paper published for collectors of natural history specimens. Send for free sample copy. It will please you. GAZETTE PUBLISHING COMPANY, Elkader, Iowa.

## SHELLS OF THE COLORADO DESERT

\$1.00 for valve of Anodonta Californiensis and specimens of Physa humerosa, Amnicola longinque, and Tryonias.

C. R. ORCUTT,  
San Diego, Cal.

## WEST COAST SHELLS

By PROF. JOSIAH KEEP. Beautifully illustrated, with Key, Biographical Index, Glossary, Check List, Etc. 230 pages, handsomely bound in cloth; nearly 200 illustrations. The frontispiece is a hand-painted engraving of the rare and beautiful Surcula Carpen-teriana. Price \$1.85 by mail. With the WEST AMERICAN SCIENTIST one year \$2 50.

C. R. ORCUTT, San Diego, Cal.

SHELLS, MINERALS AND FOSSILS, SEEDS, Bulbs and Plants. C. R. ORCUTT, San Diego, California.

THE YOUNG MEN'S JOURNAL—An original Magazine. 50 cents a year. THE YOUNG MEN'S JOURNAL, San Diego, Cal.

LAND SHELLS -- Price-list of over 500 species for 10c. C. R. ORCUTT, San Diego, Cal.

## THE MUSEUM.

An illustrated magazine for Young Naturalists and Collectors, containing articles by eminent Scientists. 25 sets (consisting of the only four numbers published) still on hand. These will be sold for 40 cents per set; original price 15 cents per number.

Address

E. A. BARBER,

Box 2118, West Chester, Penn'a.

# Horstford's

## ACID PHOSPHATE

Prepared according to the directions of PROF. E. N. HORSFORD,

ESPECIALLY RECOMMENDED FOR

**Dyspepsia, Nervousness, Exhaustion, Headache, Tired Brain,**

And all Diseases arising from Indigestion and Nervous Exhaustion.

—○—  
This is not a compound "patent medicine," but a preparation of the phosphates and phosphoric acid in the form required by the system.

It aids digestion without injury, and is a beneficial food and tonic for the brain and nerves.

It makes a delicious drink with water and sugar only, and agrees with such stimulants as are necessary to take.

DR. E. W. HILL, Glens Falls, N. Y., says: "An excellent remedy for a tonic Dyspepsia, nervous and general debility, or any low state of the system."

DR. D. A. STEWART, Winona, Minn., says: "Entire satisfaction in cases of perverted digestion, loss of nerve-power, mal-nutrition and kindred ailments."

DR. G. H. LEACH, Cairo, Ill., says: "Of great power in dyspepsia and nervous prostration."



Descriptive Pamphlet Free.

Rumford Chemical Works, Providence, R. I.

**Beware of Substitutes and Imitations**



# THE WEST AMERICAN SCIENTIST.

VOL. V

SEPTEMBER, 1888.

No. 39

## FOSSIL BOTANY—V.

As we look back in geological time, the progress of life seems to diminish in intensity and rapidity of succession. We have seen that during the older tertiary (eocene) time, our present continents were alternately raised above, and engulfed beneath the oceans of the respective epochs, and during these alternations many of the large terrestrial animals, together with the larger forms of vegetable growth, must have, in a greater or lesser degree, been destroyed. This seems also to have been the case during the later cretaceous, hence, the rocks formed by deposits following these great changes are comparatively barren of important organic remains, and so far as California is concerned, the lines of demarkation between the rocks of the latter cretaceous, and the lower or earlier tertiary, are so poorly defined as to leave much doubt among geologists, as to where the one ends and the other begins, much of the deposits of these times having been made in deep still waters.

But now, as we turn and adjust our geological telescope to the dim uncertainty of the older eocene, and the latter cretaceous, we look beyond the time of the first appearance of the gigantic congeners of the elephant, rhinoceros, tapir, sivatherium, hippopotamus, zeuzlodon and hosts of other strange and long extinct animals, to the period anterior to the incoming of the higher orders of animals among which man takes his place to the age of the great reptiles, when the land was occupied by the dinosaurs, the elephants of their time.

Some of these huge reptiles, as for instance the Hadrosaurus of New Jersey, when erect upon its tripod, formed by its hind legs and tail, stood more than twenty feet in height, and browsed upon the trees and vegetation of its time, while the still larger Megalosaurus, which preceded it, was a terror to its animal contemporaries. Imagine a Ceteosaurus with a height of ten feet, and a length of forty or fifty feet.

As we are looking beyond the age of birds, we see bird-like reptiles. some of them with teeth and tails like reptiles, with the trunk, wings and feathers of the perching birds.

The dry land was covered with trees and plants, many of which are easily referable to existing genera and types, such as the willow, sycamore, poplar, various conifers and cycads, while others, which at first sight resemble the finest and most beautiful

forest trees and shrubs of the present day, prove upon closer study to be entirely different in character, some of them combining in one species, characteristics of several widely separated families of plants. A further study of the fossil plants of our continent will doubtless, give many valuable facts in relation to the history of the derivation or evolution of forms of plant life.

The study of vegetable paleontology or fossil botany is rapidly coming to the front. While formerly it occupied a very subordinate position, if, in fact, it had any position at all, we now find its importance as one of the means for unravelling the history of past ages admitted by all geologists. Thirty years ago only about eighteen species of land plants were known to science as having been found in the rocks of North America, whereas now, more than one thousand species have been described. It has proven itself to be one of the essentials of geology, and instead of America being subordinate to Europe in its development of plant life, it is now admitted that America took the lead, and that instead of American vegetation having been derived from the old world, the old is and was indebted to the new world, for its growth of forests and plants.

The fossil flora of North America has a recognizable and acknowledged character of its own, and has furnished land plants of a period antedating the appearance of their prototypes in the European formations.

Fossil botany as a science is yet in its infancy, and it is impossible to predict the importance it may attain in the economy of scientific investigation. It is a documentary history of past ages, which will eventually furnish the student with facts of more than sufficient value and interest to fully recompense him for the time spent in desciphering its pages. *Lorenzo G. Yates.*

---

### *FISHING ON THE COLORADO DESERT.*

In the latter part of June the editor crossed the Colorado Desert, and most unexpectedly had the pleasure of not only fishing but of catching fish from several springs found on the route. The Indian or Fish Springs consist of several large pools ten to twenty feet across, situated at the eastern base of the San Jacinto range of mountains, on the Colorado Desert, and about fifteen miles southeast of Salton, a Southern Pacific railway station east of Indio. The pools are only a few feet deep, though one or two are reported to be 'without bottom,' and are surrounded and shaded by 'tules.' A similar spring was found about six miles north of Salton, on the opposite side of the desert at the base of the Chuckawalla or Lizard mountains. An analysis of the water of this, the Dos Palmas spring, gives slight traces of alum, soda and sulphur, and shows that considerable salt is held in solution, but it is not too salt for use. The taste of the water from the two localities is identical, and the temperature the same—I should

judge not under 100°F. These springs are all below the present sea level about 100 feet I should judge, from the fact that Salton, lying in the depression between the two localities, is reported to be 250 feet below sea level from actual measurements.

And now the reader can imagine the editor fishing—first with a tin drinking cup, and later with a dip net made from an old barley sack. Bits of cracker floating on the surface of the quiet pool, enticed the brilliant little fish in great numbers to sport about the mouth of the fatal net, and from thence into the jar of alcohol was a brief journey. These fish were equally abundant in the little stream running from the spring, that is perhaps six inches across, scarcely an inch deep in places, and these fish (the largest scarcely two inches long, resembling young carp) I found swimming up and down this brooklet, one fin in the mud, another in the air.

I was informed that some years ago some Chinamen caught a mess of quite large fish (a foot or more in length) from the Dos Palmas spring, but no satisfactory evidence could be obtained and none certainly remain even if they ever existed. The Indians account for the presence of these little fish in the springs, by saying that 'they fell in a shower of rain from the sky.' Their survival is certainly most interesting when we consider that the desert, now covered with sub fossil fresh water shells (with a few marine forms intermixed), must once have been a great inland lake or an estuary of the sea constantly fed by large volumes of fresh water.

Four specimens from the Dos Palmas spring were submitted to Prof. and Mrs. Eigenmann, who kindly furnish the following description.

THE EDITOR.

CYPRINODON CALIFORNIENSIS, GIRARD.

These fishes are probably the *Cyprinodon Californiensis*, Girard, as species hitherto known from the types only, which were imperfectly described, hence we add a description of our specimens:

Head  $3\frac{1}{4}$ — $3\frac{1}{6}$  ( $3\frac{3}{4}$ —4 in. total; depth 2.9— $2\frac{1}{2}$  (2.35—3); D. 11; A. 11; Lat. 1. 25—27; tr. 10—11.

Form and color of *C. gibbosus*. Head flat above, the profile steep, depressed over the eyes. Back greatly arched. Eye 3.15— $3\frac{1}{2}$  in the head, 1.25 in the interorbital. Mouth small oblique; intermaxillary spine prominent when the intermaxillaries are protracted.

Exposed portion of the humeral scale not twice as large as the exposed portion of any other scale. Intestinal canal twice the entire length. Origin of dorsal equidistant from tip of snout and base of caudal or slightly nearer base of caudal. Highest dorsal ray of male  $1\frac{1}{3}$  in the head; of the female 1.35. Caudal slightly emarginate.

Highest anal ray little shorter than the highest dorsal ray; ventrals in the female and in young inserted in front of the

dorsal, under third dorsal ray in the adult male. Pectorals variable, not near extending to the ventrals or to their middle.

*Color in spirits:* Male with an indistinct dusky band from eye to middle of base of caudal; all parts except top of head and membrane of the caudal thickly punctate; top of head dark olive; caudal membrane transparent; all the fins more or less distinctly margined with dusky; a black bar at base of caudal.

*Color in life:* (from Mr. Orcutt's notes) Back bright metallic blue, a diamond-shaped olivaceous-green spot between the eyes; lower parts light blue or bluish; caudal brown; all the fins margined with black. Female: Top of head and ante-dorsal region dark; traces of dark lines between two series of scales on the upper part of sides. Lower half of sides with conspicuous alternate light and dark cross bars and spots. Caudal rays with brown dots; inter radial membrane with a single series of similar dots; dorsal of the smaller specimen with a blackish spot on the middle of the last rays, margined in front and below by a transparent area; a black bar at base of caudal. Ventral surface plain silvery.

*Carl H. and Rosa S. Eigenmann.*

---

### *LIFE IN THE CHUCKAWALLA MOUNTAINS.*

The Chuckawalla mountains form a portion of the Colorado Desert, occupying the northeastern part of San Diego county, Cal. They are most appropriately named the Chuckawalla or Lizard mountains, for lizards certainly there predominate in the animal kingdom both in variety and numbers—possibly it would not be desirable to lead a long life in any other form. No snakes were seen during a week's stay in July this year, but probably a longer sojourn would have resulted in as great a variety as I should have cared for in that line. Several species of rattlesnakes as well as various harmless snakes are said to reside in these mountains, but they did not call on me. A single 'side winder' rattlesnake was found on the plain near the railroad station as I was about to depart, but he was not anxious for a further acquaintance—neither was I.

Mountain sheep, deer and antelope are said to abound among these mountains, but I only had a glimpse of a mountain sheep; one meal of venison was enjoyed—thanks to an Indian's skill in hunting. Several beautiful pairs of mountain sheep horns were also seen, but no opportunity presented for stealing them.

Around a few old Indian and prospecting camps I was tantalized with finding fragments of the shell of the dry land tortoise, but no sign of one in the flesh rewarding my search in all my wanderings. Fish transplanted from the Dos Palmas spring seemed to be doing well in the spring at the mining camp.

Coyotes, jack rabbits and cotton tails were not rare, considering the number of acres they must require for support. A flock of young quail near the camp during my stay are worthy of mention. Few other birds were observed, but a few bats and night

hawks sailed around us evenings, catching what few insects they could that I had not caught during the day—altogether I believe they were more successful, certainly more persevering than myself. Bees were noticed in great numbers on the *Dalea* bushes that were covered with their indigo blue blossoms at the time (early in July).

The last Indian had disappeared from these hills (we met him going toward San Bernardino); four weary mules, a dog, and half a dozen examples of the genus *Homo*, complete my monograph on the life in the Chuckawallas—no, I forgot, the mosquito is worthy of respect.

*C. R. Orcutt.*

[P. S. The prospector's long-eared friend, the patient burro, wants to be remembered. He eagerly devoured every word in the *Young Men's Journal* — paper and all.]

---

*NOTES ON THE FLORA OF CUSTER COUNTY,  
COLORADO — I.*

The present notes are offered as a slight indication of the nature of the flora of the eastern slope of the Sangre de Cristo range, at altitudes varying from 7,500 to 13,000 feet, in Southern Colorado. It was once suggested (I forget by whom) that it would be of great value to students of geographical distribution if botanists in different localities would publish lists of the most abundant plants in their immediate neighborhoods, say, for the sake of uniformity in the lists, the twenty commonest species. Now when one comes to study the published records, it becomes exceedingly difficult to ascertain what are the characteristic species of a given country, because the tendency has always been to record only or chiefly the rarities, making, perhaps, the most fuss over a plant which is properly speaking only an alien and purely accidental. I would, therefore, repeat the suggestion, never yet properly carried out, that botanists in various parts of the country should send lists of their most abundant plants, and I am sure, with the consent of the Editor, very valuable contributions to our knowledge of geographical distribution might thus be made. But now to proceed to our Custer county flora:

*Clematis douglasii*, Hook. This curious plant is very abundant about and below the lower limit of pines, mostly growing in open ground. It commences to flower about the end of April, and continues throughout the summer. A variety, *rosea*, in which the purple color of the flower is replaced by crimson, occurs, but is extremely rare.

*Anemone patens* var. *nuttalliana*, Gray. This most lovely flower is the first of the year, commencing to flower at the beginning of April, and affording throughout that month a sumptuous repast for the numerous bees (*Halictus*, *Andrena*, &c.) which visit it continually. This *Anemone*, like the *Clematis*, has an occasional var. *rosea*, in which pale pink takes the place of lilac on the

flowers. Some flowers, also, are nearly white, but I never yet met with a genuine albino.

*Ranunculus cymbalaria*, Pursh. This must not be forgotten in an enumeration of the characteristic plants, since it is very abundant by roadside ditches, taking the place occupied in Europe by the handsomer *R. ficaria*.

*Aquilegia cœrulea*, James. Found under the spruce trees at a considerable elevation in August, its pale blue blossoms being a most noticeable feature in this region. A fungus, *Æcidium aquilegiæ* Pers., was found parasitic upon it.

*Aconitum columbianum*, Nutt. Very frequent amidst the rank vegetation by creeks, a tall and noticeable plant.

*Berberis repens*, Lindl. Grows under the pines near their lower limit, and upwards. Commences to flower about the first of May.

*Argemone platyceras* L. & O. This conspicuous white flowered poppy, with its yellow juice, is the first flower that strikes the eye on arrival, since it grows abundantly up to about 7,700 feet in the low land traversed by the railway. I also found it in Arapahoe, Douglas, and Fremont counties.

*Corydalis aurea* var. *occidentalis*, Gray. Abundant and conspicuous in May at about 8,200 feet and upwards. I also found it in Gunnison county.

*Viola cucullata*, Ait. Frequent in damp places by creeks.

*Viola delphinifolia*, Nutt. In some abundance by Willow Creek; this appears to be the first record for Southern Colorado. The cut leaves of this plant are very curious.

*Viola canina*, var. *sylvestris*, Regel. In the woods above 8,400 feet. I met with this species also in Eagle and Summit counties.

*Viola canadensis*, Linn. Locally abundant, the tall growth and white flowers readily distinguishing it from any other species of violet.

*Viola nuttallii*, Pursh. Growing in sand on a dry bank, the roots striking down deeply. Most of the violets prefer shade and moisture, but this species expands its yellow flowers in the full rays of the sun.

*Malvastrum coccineum*, Gray. Abundant on the prairie, commencing to flower early in June. It is apparently a common plant in suitable localities throughout the State. I found it also in Fremont, Chaffee, Summit, Eagle, Garfield, Mesa, Delta and Montrose counties, and it is recorded for El Paso county.

*Geranium fremontii*, Torr. Frequent by creeks. Some of the Colorado Geraniums appear to run almost too close together to be separated as species.

*T. D. A. Cockerell.*

WEST CLIFF, CUSTER Co. COLO.

---

COL. JAMES STEVENSON.

Col. James Stevenson, the well-known ethnologist, died on the 24th of July at the Gilsey House, New York, of heart disease.

Col. Stevenson's health had been failing for some time, and he left Washington some weeks before his death for Gloucester, Mass., to spend the summer. As he found himself still losing instead of gaining ground, he went to New York to place himself in the hands of a physician. He was accompanied on his trip by his wife and his father-in-law, Mr. A. H. Evans. Col. Stevenson was born in Maysville, Ky., in 1840. When a boy he evinced a fancy for frontier life, and at an early age he joined the staff of Prof. Hayden, chief of the Geological Survey. He spent several winters among the Blackfeet and Sioux Indians, and remained with Prof. Hayden until the war broke out, when he served on the staff of Gen. Fitz John Porter. After the war Col. Stevenson returned to the Geological Survey. In 1875 he surveyed and located for the first time the head-waters of the Snake River, and was the first white man to make the ascent of the Great Teton Mountain. When Major Powell took charge of the survey he was appointed its chief of staff. Subsequently he was detailed for ethnological work for the Smithsonian Institution and explored the cliff dwellings of Arizona, studying the habits, customs and religious myths of the Navajo, Zuni and other Indian tribes. In 1872 Col. Stevenson married a daughter of Mr. Alexander H. Evans. The high altitudes in which Col. Stevenson was forced to carry on a great part of his work weakened the walls of his heart, so that for months past its action has been seriously impaired. The funeral took place on the following Thursday, and was largely attended by his scientific and other friends.

---

*EDITORIAL.*

An index to the first four volumes of this magazine is in preparation, and will be issued when ready in the place of our July and August numbers, which we have not published. Our subscribers will receive twelve numbers for a year's subscription, exclusive of the index.

We shall have more to say regarding the results of our three weeks' vacation in June and July on the Colorado Desert (with the thermometer at only 144°). What with catching fish out of hot water, gathering living and fossil shells, sketching Indian paintings and carvings on the rocks, examining the rich mines of gold and silver, opals, salt, etc., and noting the botanical and other aspects of a section of the county new to us we were well occupied.

The completion of the series of articles on cacti is indefinitely postponed, as we have lost nearly all the illustrations we had in stock (including over fifty varieties of cacti) by fire in May. Our museum and residence has been changed, having just moved to North J Street, near 24th, where our friends and correspondents are invited to call. Our business office is now at 961 Fourth Street, on the Plaza. Help us to make Vol. V of this magazine better than any previous one.

## NOTES AND NEWS.

The meteorite which fell in Okhausk in the province of Perin, Russia, in August last, is, according to M. A. Pavloff, one of the largest yet known. Its weight before it was broken was about 1,100 pounds. This meteorite contains particles of unoxidized nickel iron, consequently we must classify it with the sporado-siderites and its spherical mineral aggregates bring it under the heading of chondrodites.

It is probably not generally known that the quicksand is composed chiefly of small particles of mica mixed with water. The mica is very smooth and the fragments slip upon each other, so that any heavy body which displaces them will sink until a solid bottom is reached.

According to the recent investigation of Geiger, Cuno, Penka, and Schraeder, the primitive seat of the Aryans is not to be sought in Central Asia, but in northern and northeastern Europe, and especially in Finland and in some of the territories belonging before to the ancient Republic of Poland. The only argument for deriving the proto-Aryans from Central Asia was the belief that Sanskrit comes the nearest to the primitive Aryan speech. But the Lithuanian, a language of the inhabitants of the northern part of ancient Poland, represents a more primitive form of Aryan speech than Sanskrit, hence the arguments of Max Müller, Pott, Lassen and others in favor of Central Asia must be overthrown in favor of Northern Europe.

Dr. C. C. Parry and wife expect to return to their home in Davenport, Iowa, for the winter.

## PUBLISHER'S NOTES.

THE OLD CURIOSITY SHOP again changes hands, E. M. Haight, of Riverside, Cal., paying the price asked by C. R. Orcutt.

THE YOUTH'S COMPANION has just finished publishing a serial by J. T. Trowbridge, "Biding his Time." During the current year this favorite weekly for young people has given twelve pages nearly every week.

HORTICULTURE BY IRRIGATION is the title of an excellent little book of 140 pages, 8vo., illustrated, by A. E. Gipson, Greeley, Colorado, President of the Colorado State Horticultural and Forestry Association (price, paper, 50c., cloth, 75c.). The information and practical hints it contains will save those inexperienced in western ways from making mistakes and failures, and it is a valuable handbook for those experienced as well. It will prove of especial value to those who have taken up timber claims.

PICTORIAL GUIDE TO THE MAMMOTH CAVE OF KENTUCKY, by A. D. Binkerd, M. D., Cochran, Ind., 8vo., 112 pages, illustrated, price, 25c., has just been received from the author, who writes that he intends to visit San Diego, and perhaps make its his home.

THE WESTERN NATURALIST of Madison, Wisconsin, has been sold by Frank A. Carr, to the editor of THE WEST AMERICAN SCIENTIST. Mr. Carr expects to travel in Central America, and has engaged to contribute to the successor of his magazine.

THE CALIFORNIA CACKLER is an excellent monthly for the poultryman, well illustrated and carefully edited, entertaining and instructive.

A timely article in the July CENTURY is 'Disease Germs and How to Combat Them.' It is accompanied by a frontispiece portrait of Pasteur, who has made disinfection and fermentation a longer study than hydrophobia, although it is with the latter that his name is more intimately associated in the public mind.



**JOSEPH GILLOTT'S**  
**Steel Pens**  
 FOR ARTISTIC USE in fine drawing,  
 Nos. 659 (Crowquill), 290 and 291.  
 FOR FINE WRITING,  
 Nos. 303 and Ladies', 170.  
 FOR BROAD WRITING,  
 Nos. 294, 389 and Stub Point, 849.  
 FOR GENERAL WRITING,  
 Nos. 332, 404, 390 and 604.  
 Joseph Gillott & Sons, 91 John St., N. Y.  
 HENRY HOE, SOLE AGENT,  
 Sold by ALL DEALERS throughout the World.  
 Gold Medal Paris Exposition, 1878.

A. WENTSCHER,  
 GENERAL COMMISSION  
 FORWARDING AND SHIPPING.  
 San Diego, Cal.

**ARE YOU FOND OF USING TOOLS OR**  
 Tinkering? If So send One Dollar for THE  
 UNIVERSAL TINKER AND AMATEUR'S ASSIST-  
 ANT. Tells Amateurs about turning and lathe work,  
 Painting, Staining, Book Binding, French Polishing,  
 Wood Finishing, Fretwork, Amateur Printing, the  
 Magic Lantern, etc. Single copies 10 cts. Address  
 HODGSON & BARWOOD, 294 Broadway, New  
 York, N. Y.

**IT WILL PLEASE** YOUR  
 BOY  
 or girl and your neighbor's boy or girl to receive a  
 paper "all their own." Try sending them the

**YOUNG IDEA**

The best low-priced juvenile magazine published; 12  
 pages, 36 columns, monthly, illustrated, only 50 cts.  
 a year; sample free. Address THE YOUNG IDEA,  
 Grant C. Whitney, publisher, Belvidere, Ill.

**FREE** **\$85** solid GOLD WATCH **FREE**  
 Sold for \$100 un-  
 til lately. Best \$85  
 watch in the world. Per-  
 fect time-  
 keeper. Warranted. Heavy  
 solid Gold Hunting Cases.  
 Elegant and magnificent.  
 Both ladies' and gents' sizes  
 with works and cases of  
 equal value. **ONE PERSON**  
 in each locality can secure one  
**FREE**. How is this possible?  
 We answer—we want one per-  
 son in each locality, to keep in



their homes, and show to those who call, a complete line of our  
 valuable and very useful **HOUSEHOLD SAMPLES**.  
 These samples, as well as the watch, we send free, and after you  
 have kept them in your home for 2 months and shown them  
 to those who may have called, they become your own property;  
 it is possible to make this great offer, sending the **SOLID**  
**GOLD** watch and **COSTLY** samples free, as the showing of  
 the samples in any locality, always results in a large trade for  
 us; after our samples have been in a locality for a month or two  
 we usually get from **\$1000** to **\$5000** in trade from the  
 surrounding country. This, the most wonderful offer ever  
 known, is made in order that our samples may be placed at once  
 where they can be seen, all over America. Write at once, and  
 make sure of the chance. Reader it will be hardly any trouble  
 for you to show the samples to those who may call at your home  
 and your reward will be most satisfactory. A postal card on  
 which to write costs but 1 cent and after you know all, if you  
 do not care to go further, why no harm is done. But if you do  
 send your address at once, you can secure **FREE** one of the  
 best solid gold watches in the world and our large line of  
**COSTLY** SAMPLES. We pay all express, freight, etc.  
 Address **GEO. STINSON & CO., Box 812, PORTLAND, MAINE**

**Consolidated National Bank.**

**CAPITAL PAID IN, - \$250,000.**  
**SURPLUS FUND, - - - 50,000.**  
**Undivided Profits - - - 75,961**

BRYANT HOWARD, - - - - - President.  
 E. W. MORSE, - - - - - Vice-President.  
 JOHN GINTY, - - - - - Cashier.  
 W. H. CLARKE, - - - - - Assistant Cashier.

—DIRECTORS.—

Hiram Mabury, O. S. Witherby, John Ginty,  
 E. W. Morse, James McCoy,  
 S. Levi, Bryant Howard.

Exchange on all the Principal Cities of America  
 and Europe bought and sold.

**The Savings Bank.**

OF SAN DIEGO COUNTY.

In the Consolidated Bank Building, corner of H and  
 fifth streets.

**CAPITAL, - - - - \$100,000.**

—OFFICERS:—

James M. Pierce, - - - - - President.  
 Geo. A. Cowles, - - - - - Vice-President.  
 John Ginty, - - - - - Secretary and Treasurer.

—DIRECTORS:—

O. S. Witherby, H. Mabury, E. W. Morse,  
 Geo. A. Cowles, James M. Pierce,  
 James McCoy, Bryant Howard.

Interest Allowed on Deposits. Money  
 Loaned on Real Estate.

—JOB OFFICE AND SCHOOL FOR:—

**Short - Hand and Type - Writing.**

Letters and Legal Matter taken from dictation  
 neatly and quickly, and all sorts of job  
 work done cheaply at

Room 9, M. E. Church Block,  
 Miss M. F. PERIN.

**NOTES ON MOLLUSKS** OF THE VICINITY  
 of San Diego, Cal.,  
 and Todos Santos Bay, Lower California, by C. R.  
 ORCUTT, with comments by DR. W. H. DALL. With  
 plate. Price, 25 cents. C. R. ORCUTT, San Diego, Cal.

**CHANCES TO SWAP.**

Notices inserted under this head for five cents  
 per-line for each insertion; fifty cents per line  
 charged by the year. Only exchange notices ac-  
 cepted.

What have you to exchange for a rem-  
 edy that will cure Catarrh and Hayfever?  
 Address, **Mrs. E. E. YATES,**  
**Sharon, Wis.**

Books wanted by the editor.

## "NOTHING SUCCEEDS LIKE SUCCESS."

*(Editorial from the Cosmopolitan, December, 1882.)*

Before those famous taxidermists and hunters, the Verraux Freres, established themselves in Paris, natural history museums were compelled to rely upon picking up their specimens in all parts of the world. The keen intelligence of the Verraux Bros. was not long in discovering a means of serving the cause of science and of advancing their own fortunes at the same time. They established a sort of clearing-house for wild beasts, birds, fishes, and reptiles, with branches in every quarter of the globe, and from whom you could order a stuffed elephant, giraffe, a Bengal tiger as you would flitch a bacon from your butcher, or a boiled lobster from the fish-monger.

While the Verraux Freres were gaining a world-wide reputation, an American lad, William H. Winkley by name, was pursuing his studies at the famous technical schools of the French capital, and, when his means were all but exhausted, he left his lodgings in the Latin quarter and apprenticed himself under these famous masters. After serving a long and laborious apprenticeship in the study of animal forms, anatomy, and drawing, he considered himself sufficiently equipped for the practical work of his vocation. Returning to America, and selecting a small interior town where rents and living expenses were light, he set up an establishment of his own, as large as his limited means would allow.

To-day, he supplies the largest museums of the world with stuffed specimens from the elephant down to the smallest rodent, besides large quantities of minerals, rocks, fossils, casts of fossils, skins, and skeletons (unmounted) of animals of all classes, and often the wild animals themselves, alcoholic specimens, insects, crustaceans, shells, echinoderms, corals, sponges, and botanical specimens, from every quarter of the globe and in a great variety of form and price. Also anatomical preparations, chemical, philosophical and optical instruments, with Naturalists' supplies of every description, and, the Verraux Freres being now dead, he has established, as they did, stations upon every continent for the collection of natural history specimens. The attaches of all the stations are over 100 in number, many of whom are specialists.

At his American headquarters at Clearfield, Iowa, there are not far from 100,000 specimens of all classes. Besides mounting the skins sent in by his own collectors, this eminently successful taxidermist takes custom work in his department from those desiring the same, and many hundreds of persons and museums throughout the civilized world are constantly sending him mammal and bird skins and skeletons for restoration. Especially is this true of those scientific persons and wealthy individuals, who, while abroad, have shown prowess in the hunt.

But it is not alone in taxidermy that this cosmopolitan naturalist has won an unrivalled reputation. Years ago he devised a plan whereby even those of moderate means could possess a good cabinet. This, the installment plan, has from the start been a success, and in hundreds upon hundreds of cases has proven itself an inestimable boon to those of moderate means who desire a good collection. Many of the best collections in this country have been obtained entirely upon this plan and students, professional men, schools and colleges have all expressed themselves perfectly satisfied with its workings in their respective cases.

Prof. Winkley is strictly honest and reliable, and if any of our readers want anything in his line (see advertisement elsewhere,) we would recommend them to write to him.

This unsolicited editorial was written more than seven years ago. In the interim we have grown considerably, and to-day stand at the head of the museum furnishing business in the world. We are the only house outside of Paris, that sells collections on installments. Do you want to secure a good collection on easy terms? If so, write to us.

**W. H. WINKLEY, Clearfield, Iowa.**

Persons having private collections that they wish to dispose of, would do well to send lists to us.

—A—  
FINE INDIAN—  
—ARROW-HEAD

For only 10 Cents.

F. C. JOHNSON, Boonville, N. Y.

THE WORLD OF NATURE.

A MONTHLY JOURNAL DEVOTED TO NATURAL History, Mineralogy, Archaeology, Numismatics, Philately and Bric-a-Brac. Edited and published (the last week in each month) by S. JACOB, Naturalist. (late of N. Y. Aquarium and Eastbourne, England, etc.) NEWPORT, R. I., \$1 per year, 50c for 6 months, single copies 10c; (None free). First-class advertisements only solicited; 10c per line; \$1 per inch (12 lines).

JOB PRINTING!

NOTE HEADS—Size 5½x8½; for 250, 80c; 500, \$1 50 1000, \$2 50

ENVELOPES—Size 6, business size; for 250, \$1 25; 500, \$2; 1000, \$3.

BUSINESS CARDS—2¼x3¾; for 250, \$1; 500, \$1 50; 1000, \$2 50; extra 1000, \$1 50

CIRCULARS.

Size 4½x6, not over 150 words; for 250, 75c; 500, \$1; 1000, \$1 50, extra 1000, \$1.

Size 6x9, not over 250 words; 250, \$1; 500, \$1 50; 1000, \$2 00; extra 1000, \$1 25.

Size 9x12, not over 450 words; for 250, \$2; 500, \$2 50; 1000, \$3; extra 1000, \$1 75.

We use only the best quality of paper, and do first-class work. All printing delivered free of charge. Every description of Job and Commercial Printing done, and is delivered cheerfully furnished.

Address THE CHAMBERLAIN PRINTING CO.,  
284 Lavonia Ave, Jersey City, N. J.

HAVE YOUR NAME PUT IN THE  
AMERICAN COLLECTOR'S DIRECTORY

It will cost you but 20 CENTS, which includes your name, address; copy of the Directory, branch of collecting, etc. It will also bring you hundreds of free sample copies of magazines, papers, etc. Don't wait but send at once. Write name plainly and state if you desire to correspond or exchange. W. H. PLANK, Publisher, Wyandotte, Kansas.

S. JACOB, NATURALIST,  
119 AND 121 BELLEVUE AVE., NEWPORT, R. I.  
—AND—  
2 CASINO BLOCK, NARRAGANSETT PIER, R. I.

Student's Aquarium (marine and fresh water); how to make and manage, by S. Jacob, with catalogue of curiosities, shells, bird's eggs, etc., on receipt of 10 cents.

THE STRAWBERRY FOR THE SOUTH.  
HOFFMAN'S SEEDLING!

Most productive, large, of the best quality and UNEQUALLED FOR MARKET. I offer strong plants, in large and small quantities, at reasonable prices.

CATTLEY GUAVAS and JAPAN MEDLARS; all the finest ROSES, in good, healthy plants; forty varieties of DWARF ORANGE TREES, LEMONS, LIMES, Etc.

Address ARNOLD PUETZ,  
Greenland, Duval Co., Florida.

—THE—  
RECITER'S COMPANION!

Is the name of a Monthly Magazine devoted to Choice Subjects for every occasion. Contains many original articles and valuable instructions.

50 cts per year; 6 mos, 25 cts.

Sample for stamp; no postals answered.

THE RECITER'S COMPANION,

Halifax, N. S.

WHY IS IT THAT THE SUBSCRIPTION List of the AGASSIZ COMPANION is so large? Because we give you a handsome 16 to 22-page magazine filled with choice original articles of Popular Science every month. Issued the 20th of each month. Established 1886. The largest, cheapest and best magazine of its class published. Only 50c a year. Sample copy 5c; none free. You can have your name inserted in our American Collectors Directory and THE COMPANION 1 year for 60c. W. H. PLANK, Publisher, Wyandotte, Kansas.

THE SCIENTIST!

A monthly magazine by the Fitchburg Agassiz Assembly. Should be in the hands of every

Agassiz member.

Price 50c a year; 5c a copy; none free. Advertising rates on application.

W. L. EMORY, Publisher, Fitchburg, Mass.

PHOTO-ENGRAVING AND DESIGNING.

GOOD WORK AT LOWEST PRICES!

NEWSPAPER WORK A SPECIALTY!

Illustrations for all purposes. We are offering EXTRA LOW rates at present to advertise our business. Correspondence on the subject desired.

H. A. CARHART, Collamer, N. Y.

LOOK! OH! LOOK!

500 4x7 Circulars, by mail, 75c.

100 Letter Heads, 35c.

100 Envelopes, 30c.

MIX BROTHERS, BUTLER, OHIO.

P. S.—Special rates on larger orders.

COLORS  
FOR NATURALISTS

A Nomenclature of Colors for Naturalists, and Compendium of Useful Knowledge for Ornithologists.

BY ROBERT RIDGWAY,

Curator, Department of Birds, United States National Museum.

Ten Colored Plates and seven plates of Outline Illustrations.

Svo. CLOTH, \$4.00.

For sale by C. R. ORCUTT, San Diego, Cal.

# THE IMMIGRATION TO SAN DIEGO

— IS —

## Filling up the City and Country Rapidly.

\*

**E**XTENSIVE Improvements are going on, values are increasing steadily, and the town is now ripe for a good suburban town adjacent to San Diego. Appreciating this fact and taking time by the forelock, we have secured a tract of a land in the beautiful Otay Valley, ten miles southeast of San Diego, lying inland from the bay two miles, and from the ocean four. Far enough to avoid the fogs and raw winds sometimes quite uncomfortable on the ocean. Surrounded by fruit farms where grow in luxuriance the apple and the orange, the lemon and the peach, the apricot and the lime, the nectarine, the olive, guava, plum, prune and grape in every variety; in short, all fruits and vegetables known to temperate and semi-tropical latitudes, and where the rose, geraniums and all kinds of beautiful flowers bloom the year round in the open gardens.

### OTAY

**T**HIS TRACT slopes gently to the South, just enough for drainage. The climate is not excelled in the world, and the whole tract is underlaid with pure, soft and cold mountain water at a depth of from twenty-five to forty feet. We have platted this magnificent piece of land under the name of Otay in honor of the valley, and so popular is the location that one hundred lots were taken in a retail way within two hours of the time: it was put on the market. We have put a steam motor on the ground and several trains are running daily between Otay and San Diego. We have also connected it by telephone, secured a postoffice, a fine store, hotel and livery stable. Have given a nice corner for a church, and aim to do everything in our power to advance the interests of the place. It is just the right distance out for Suburban Homes, and for investment cannot be excelled on this coast of great possibilities. Believing in the nimble sixpence we have put the lots on the market at a small profit to ourselves and giving all investors an opportunity to make a handsome profit.

### BUY NOW!

And secure a holding in the land of perpetual Summer while you can get it at a mere nominal price.

The terms of sale are one third cash, one third in three months and one-third in six months, at ten per cent. interest on deferred payments; five per cent. off for cash. Lots range from \$100 to \$200, owing to proximity to business center.

#### REFERENCES

HON. BRYANT HOWARD, President of the Consolidated National Bank, San Diego, Cal.  
COL. W. G. DICKINSON, of the Land and Town Company, National City, Cal.

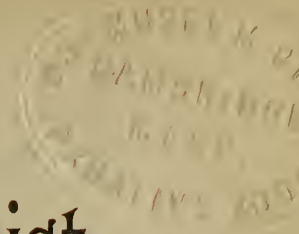
We also have for sale on easy terms a choice line of City Property, Fruit and Grain Farms and Stock Ranches.

For those who find it inconvenient to come now, we make careful and paying investments and feel justified in urging those desiring investments to send their money at once, as the country is settling rapidly and prices advancing in proportion. Any question pertaining to the City or County will be cheerfully answered. Address,

## GUION, HAMILTON & HARTLEY,

S. W. Cor. Sixth & E Streets, SAN DIEGO, CAL.

Mention this magazine.



OCT 2 1890

12,423.

# The West American Scientist.

VOL. V, No. 2.

<sup>5m</sup> OCTOBER, 1888.

WHOLE No. 40.

PRICE: 10 cents; Annual Subscription, \$1.00; Life Subscription, \$10.00.

Published monthly by C. R. ORCUTT, Editor and Proprietor, San Diego, Calif.

## Le Naturaliste Canadien

32-page, 8-in., illustrated monthly.

**\$2.00 A YEAR.**

The only publication in the French language, on Natural History on this continent.

It is actually pursuing a revision of Hymenoptera with descriptions of several new species and the history of Hemiptera of the Province of Quebec.

Address, L'Abbe Provancher, Caprouge, Q., Canada.

### CLASSIFIED ADVERTISEMENTS.

A TWO LINE CLASSIFIED ADVERTISEMENT, only 25 cents a month; \$3.00 a year payable in advance. Each additional line, 10 cents a month, \$1.00 a year. Must be acceptable and paid in advance. Copy of paper free to each advertiser each month while advertising continues.

### BOOKS.

SCIENTIFIC BOOKS AND MAGAZINES FURNISHED BY C.R. Orcutt, San Diego, Cal. Old Books wanted in exchange.

TALMAGE'S SERMONS (14) TO THE WOMEN OF America, with practical hints to men, 10 cents. The Gospel Herald, 333 Day street, Princeton, N. J.

SAN DIEGO. CLIMATE, TOPOGRAPHY, PRODUCTIONS, etc. By DOUGLAS GUNN. 78 pp, with map, 25 cents.

### SHELLS.

MY PRICE LIST OF LAND SHELLS FOR 10 cents. Over 500 varieties. C. R. Orcutt, San Diego, Cal.

### SEEDS.

C. R. ORCUTT, SAN DIEGO, CALIFORNIA, Collector and importer of all kinds of tree, shrub and flower seeds. Californian seeds, bulbs and plants a specialty; also ferns and rare cacti.

### MINERALS.

A LARGE STOCK OF FINE AMERICAN AND foreign minerals, Western minerals and fossils a specialty. Lists in preparation. C. R. Orcutt, San Diego, California.

### BIRDS, SKINS AND EGGS.

NEW PRICE LIST OF FRESH SOUTHERN CALIFORNIA Bird Skins sent for stamp. Charles H. Marsh, Dulzura, Cal.

NOTICE TO OOLOGISTS.—EVERY ONE purchasing \$2.00 worth of eggs before Dec 1st will receive a ticket for my prize drawing. The prizes include eggs of Golden, Bald, and Sea Eagle, Iceland, Gyrfalcon, etc. Write for particulars to W. Raine, Alton St., Toronto, Canada.

## Pacific Coast Steamship Company

The Elegant and Thoroughly Equipped Steamers of this Company sail in Sight of Land the whole distance from San Diego to Alaska.

### Leave San Diego:

CITY OF PUEBLA—October 8, 15, 22, and 29.

SANTA ROSA—October 4, 11, 17 and 24.

### Leave San Francisco:

CITY OF PUEBLA—October 3, 5, 19 and 27—at 8 A. M.

SANTA ROSA—October 1, 9, 14, 22 and 28—at 2 P. M.

Freights received for all points North and East, from 7 A. M. to 5 P. M., every day except sailing days and Sundays.

For further information apply at the Company's offices at the wharf, foot of Fifth street.

**J. H. SIMPSON, Local Agent.**

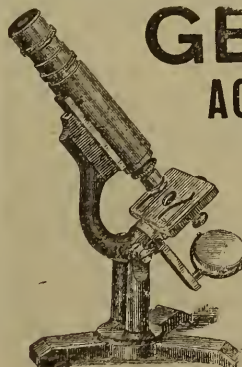
## Ancient Red Man's Tools.

1 large game point, 1 small game point, 1 bird point, 1 barbed base arrow, 1 deep notched base arrow, 1 stemmed base arrow, 1 serrated edge arrow; all 7 are fine and well wrought implements, neatly arranged on card and labeled with date, etc., and sent post paid for 75 cents. List free. Catalogue 7c., or free with order.

DEALERS SUPPLIED.

**J. R. NISSLEY,**  
Ada, Hardin Co., O.

FLORA OF SOUTHERN AND LOWER CALIFORNIA. A Check-List of the flowering plants, ferns, lichens and marine algæ. By C. R. ORCUTT. Price, 25 cents.



## GET THE NEW ACME NO. 5 MICROSCOPE

Complete, with high-class lenses, 1 in. and 1-5 in.  
**\$28.00.**

Send for complete catalogue B, and sample of The Microscopical Bulletin.

**JAMES W. QUEEN & CO.**  
Makers of the Acme Microscopes,  
924 Chestnut St., Phila.

# E. M. HAIGHT'S BARGAIN LIST.

## Box 24, Riverside, Cal.

TERMS—Cash with order, and if in amount less than 25 cents, add 4 cents extra for packing and return postage.

### BIRDS' EGGS.

Eggs are all perfect, one hole, side blown. The figures in parenthesis indicate the number of eggs in a set. All others are single.

Western Grebe 25c; Tufted Puffin (1) 75c; Pigeon Guillemot 25c; Western Gull (3) 15c; American Herring Gull (3) 15c; Laughing Gull (3) 10c; Common Tern (3) 4c; Black Skimmer 8c; Farallone Cormorant (3) 50c; Brandt's Cormorant (3-4) 25c; Baird's Cormorant (3) 25c; Roseate Spoonbill 50c; Snowy Heron 8c; Louisiana Heron (3-4) 8c; Green Heron (4) 5c; Black crowned Night Heron 8c; Yellow-crowned Night Heron (3-4) 20c; Clapper Rail 5c; Purple Gallmule 15c; Coot 5c; Willet 20c; Spotted Sandpiper 5c; Killdeer 10c; Wilson's Plover 15c; California Quail 5c; Valley Quail 5c; Prairie Hen 10c; Mourning Dove (2) 2c; Zenaida Dove 50c; Swainson's Hawk 50c; Sparrow Hawk 15c; Barn Owl (4-5) 15c; California Screech Owl 40c; Burrowing Owl (5-6) 15c; Road Runner 15c; Nutall's Woodpecker 75c; Flicker 4c; Red-shafted Flicker 5c; Scissor-tailed Fly Catcher 8c; Kingbird (3-4) 3c; Arkansas Kingbird 5c; Cassin's Kingbird (3) 20c; Ash-throated Fly Catcher 15c; Phoebe 3c; Black Phoebe 10c; Baird's Fly Catcher 15c; Ruddy Horned Lark 20c; Green Jay 65c; Crow 5c; Cowbird (1) 3c; Red-winged Blackbird (4) 2c; Bi-colored Blackbird 4c; Tri-colored Blackbird 10c; Meadow Lark 8c; Western Meadow Lark 5c; Arizona Hooded Oriole 40c; Orchard Oriole 4c; Bullock's Oriole (4-5) 8c; Brewer's Blackbird 4c; Purple Grackle 4c; Bronzed Grackle 4c; Boat-tailed Grackle 4c; Crimson House Finch (4-5) 4c; Goldfinch 5c; Green-backed Goldfinch 10c; Lawrence's Goldfinch 15c; Western Lark Sparrow 8c; Chipping Sparrow 2c; Field Sparrow 3c; Bell's Sparrow 75c; Song Sparrow (4-5-6) 2c; Heerman's Sparrow 8c; Samuel's Song Sparrow 5c; Spurred Towhee 15c; California Towhee (4) 5c; Cardinal Grosbeak (3) 4c; Rose breasted Grosbeak 10c; Black-headed Grosbeak 10c; Purple Martin 10c; Cliff Swallow 2c; Barn Swallow 2 cents; Bank Swallow 4c; Phanopepla 40c; White rumped Shrike 4c; Warbling Vireo 10c; Bell's Vireo 8c; Mocking Bird (4) 4c; Cat Bird 2c; Brown Thrasher 2c; California Thrasher 15c; Cactus Wren 8c; Rock Wren 40c; House Wren 4c; Parkman's Wren, 4c; Plain Titmouse, 25c; Bush Tit 10c; California Bush Tit 15c; Yellow-headed Tit 40c; Robin 3c; Blue Bird 2c; Western Blue Bird 8c; English Sparrow 4c.

### CURIOSITIES:

Alligator Teeth 5c; Buffalo Teeth 10c; Bird's Wings (3 varieties named) 5c (15 varieties named) 25c; Crazy Weed Pods 3 for 5c; Cactus Wood, 5 to 25c; Sycamore Tree Balls, 3 for 5c; California Ground Squirrel Tails 10c; Chinese Chopsticks, per pair, 8c; Chinese Game Cards, 3 for 5c; Chinese Slow Matches 5c; Chinese Game Stones, 2 for 5c; Chinese Coins (very old) 5c; Chilacotho Bean Pods (large and curious) 15c; Coral (small white branching) 5c; California Live Oak Tree Acorns, 3 for 5c; California Live Oak Tree Balls 5 to 10c; Clear Quartz 5c; Gold-Dust Sand (S A) per package, 10c; Horse-shoe Crabs 5 to 10c; Hawk Moth Cocoons 10c; Horned Toads, stuffed, 50c; Indian Arrow-Heads 5 to 25c; Japanese Paper Napkins 2 for 5c; Liver Beans 5 to 10c; Money Cowry Shells 2 for 5c; Pampas Grass Plumes, each, 15c, 2 for 25c, 5 for 50c; 12 for \$1; Porcupine Quills, per doz. 5c; Petrified Wood, very fine, 5c to \$1; Sand Tubes 5c; Skate's Eggs 5c; Shark's Eggs 15c; Sea Urchins, Atlantic, 10c; Sea Urchins, Pacific, 5 to 10c; Mud Wasp Nests 5 to 25c; Star Fish, small Atlantic, 5c.

### MINERALS.

Vermiculite on Quartz, 5c to \$1.25; Idocrase, 5 to 60c; Garnet (Alumin) 5 to 60c; Asmanite, 5 to 25c; Tin Ore (Cassiterite) 5 to 70c; Calcite 5c to \$1.00; Dufrenite 5 to 80c; Obsidian, jet black, 5 to 30c; Petrified Wood, very fine, 5c to \$1.

### SPECIAL OFFERS.

All parties sending me \$1 for a year's subscription to this magazine will be given 50 cents worth of any of the above specimens as a premium. All ordering specimens from any of my lists amounting to \$1.25 will receive this magazine free for one year. Send 2c stamp for Price Lists. None Free.

P. O. Box 24.

E. M. HAIGHT, Collecting Naturalist,  
Riverside, California

## THE OPEN COURT.

Published Weekly at 169 LaSalle Street,  
Chicago, Ills.

A Journal devoted to Science, Philosophy & Morals.  
Send for Free Sample Copy.

Price \$2.00 a Year. P. O. Drawer F.

## BOOK CHAT!

Brentano's, Publishers, 5 Union Square, N. Y.

Book Chat contains monthly a complete index to the periodical literature of the world. Indispensable to Botanists, Conchologists, Geologists and Scientists generally. \$1 a year; 10c. for a single copy.

—THE—

## AMERICAN GEOLOGIST!

IS A MAGAZINE

Devoted to Geology and Allied Sciences—the only one in America—published by a number of Professional Geologists distributed over the central part of the United States. Three Dollars a Year.

Address THE AMERICAN GEOLOGIST,  
Minneapolis, Minn.

—THE—

## —CALIFORNIA FLORIST:—

ONLY \$1 00 A YEAR.

An Illustrated Monthly Journal for Florists, Nurserymen, Seedsmen and Amateurs, with departments of Home Recreation, Vegetable Gardening and Popular Science. Sample Copies 10c. Address

FLORIST PUBLISHING Co., Santa Barbara, Cal.

## FOR 50 CENTS.

We will send you for one year

—THE—

## CONCHOLOGISTS' EXCHANGE

The Only Shell Paper in America.

16 Pages Monthly, and full of the Latest  
and Best Shell News.

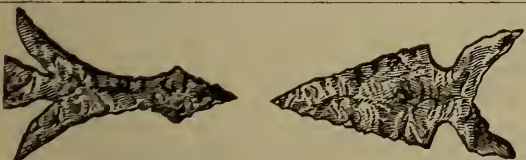
And the following Handsome Premiums:

A neat box of Choice Land Shells, Fresh-Water Shells, or Marine Shells, or Berlin H. Wright's New Check List of North American Fresh Water Bivalves, or D. D. Baldwin's Land Shells of Hawaii.

Don't wait, but send 50 cts. NOW to

WM. D. AVERELL,

PUBLISHER,  
Chestnut Hill, Philadelphia, Pa.



100 VARIETIES of Beaded Buckskin and War Relics of the Sioux of Dakota, Apaches, Pueblos and Navajoes of New Mexico. A large stock of Oregon and other States' Stone Relics of all kinds. All the leading Minerals and Fossils of the Black Hills and Dakota Bad Lands. Wholesale and retail. Send for large, illustrated catalogue.

L. W. SILWELL, Deadwood, D. T.

## GARDEN AND FOREST.

The new illustrated weekly journal of Horticulture, Garden Botany, and Forestry is indispensable to every botanist and botanical library. Each number contains a figure of a new or little known plant (North American) not before figured, drawn by C. E. Faxon, with description by Mr. Lereno Watson. The paper is edited by Professor C. S. Sargent, of Harvard, with Professor W. G. Farlow and Professor A. S. Packard, as associates. The early numbers have contained articles by Professors Wolcott Gibbs, G. L. Goodall, W. J. Beal, G. W. Hilgard, John Macono, L. H. Bailey, Herbert Osborne, J. L. Budd, W. Trelease, H. Mayr, W. W. Bailey, D. P. Peaballow, C. R. Orcutt, Abbot Kinney, and other eminent contributors. Special attention has been devoted to California subjects. With the second number was published as a supplement a beautiful photogravure of Mr. A. St. Gaudens's bronze medallion of Asa Gray. No American scientist should be without a copy. The price of this number, with supplement, to non-subscribers, is now 25 cents.

Subscription Price, \$4 00 a year.

Garden and Forest Publishing Co.

TRIBUNE BUILDING, NEW YORK.

## SEEDS! BULBS! PLANTS!

CURRIE BROS.,

—SEEDSMEN AND FLORISTS—

MILWAUKEE, WIS.

## ALL FOR 25 CENTS.

A fine Indian Arrow-head, Piece of Pottery, Starfish, Sea-urchin, Shark's Egg, 3 minerals, Chinese Coins, 14-page price-list of curiosities, etc., copy of COMMON SENSE, a 16-page magazine for collectors, 35c per year.

F. A. THOMAS, Publisher,

Mexico, New York.

THE GEOLOGISTS' GAZETTE is the best 25c paper published for collectors of natural history specimens. Send for free sample copy. It will please you. GAZETTE PUBLISHING COMPANY, Elkader, Iowa.

## SHELLS OF THE COLORADO DESERT

\$1.00 for valve of Anodonta Californiensis and specimens of Physa humerosa, Amnicola longinque, and Tryonias.

C. R. ORCUTT,

San Diego, Cal.

## THE MUSEUM.

AN illustrated magazine for Young Naturalists and Collectors, containing articles by eminent Scientists. 25 sets (consisting of the only four numbers published) still on hand. These will be sold for 40 cents per set; original price 15 cents per number.

Address

E. A. BARBER,

Box 2118, West Chester, Penn'a.

## RUBBER STAMP AGENTS, ATTENTION!



It will be to your interest to have a copy of our ENCYCLOPEDIA, or Improved Catalogue of Rubber Stamps, [212 pages] which, with its reduced prices, thousands of new Novelties, Cuts, Borders, Designs, etc., is intended to take the place of all other stamp books. Every Page entirely new. Mailed on receipt of 33 cents. None free. Jan. 10th, 1887.

Address—THALMAN MFG. CO., Balto., Md.

# Horsford's

## ACID PHOSPHATE

Prepared according to the directions of PROF. E. N. HORSFORD,

ESPECIALLY RECOMMENDED FOR

**Dyspepsia, Nervousness, Exhaustion, Headache, Tired Brain,**

And all Diseases arising from Indigestion and Nervous Exhaustion.

—○—  
This is not a compound "patent medicine," but a preparation of the phosphates and phosphoric acid in the form required by the system.

It aids digestion without injury, and is a beneficial food and tonic for the brain and nerves.

It makes a delicious drink with water and sugar only, and agrees with such stimulants as are necessary to take.

DR. E. W. HILL, Glens Falls, N. Y., says: "An excellent remedy for a tonic Dyspepsia, nervous and general debility, or any low state of the system."


DR. D. A. STEWART, Winona, Minn., says: "Entire satisfaction in cases of perverted digestion, loss of nerve-power, mal-nutrition and kindred ailments."

DR. G. H. LEACH, Cairo, Ill., says: "Of great power in dyspepsia and nervous prostration."

 Descriptive Pamphlet Free.

Rumford Chemical Works, Providence, R. I.

**Beware of Substitutes and Imitations**

 Be sure the word "HORSFORD'S" is printed on the label.—All others are spurious.—Never sold in bulk.



# THE WEST AMERICAN SCIENTIST.

VOL. V.

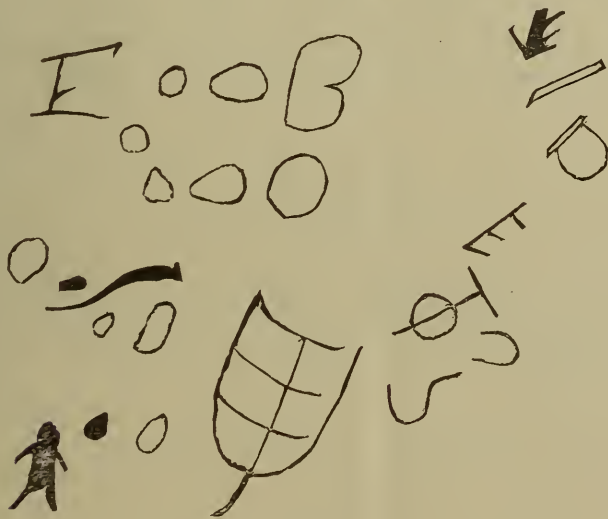
OCTOBER, 1888.

No. 40

## INDIAN CARVINGS.

The Chuckawalla mountains form a part of the vast region called the Colorado desert, and are located in the north-eastern part of San Diego county, California.

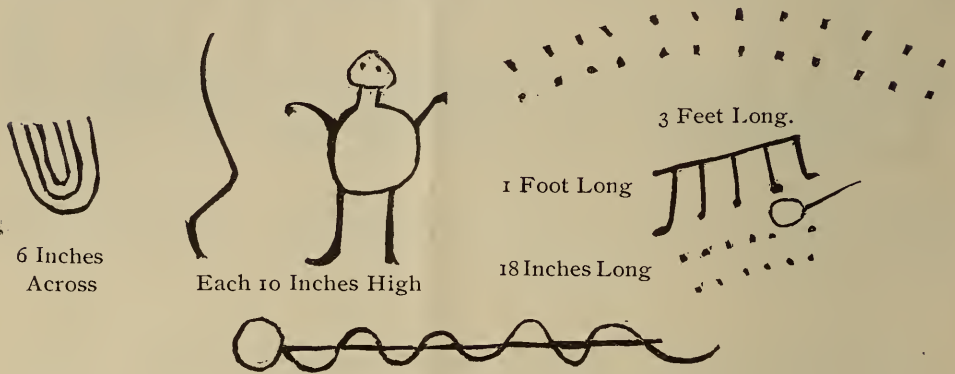
About thirty miles from Salton, a station on the Central Pacific R. R., and near the centre of the Pacific Mining District, there is a smoothly worn rock bearing on its nearly perpendicular face various Indian signs. I give below a rough sketch of the figures engraved upon this rock, as I found them June 7th. It is beside an old Indian trail at several natural water reservoirs locally known as the Black Tanks:



These signs were cut into the rock about half an inch, and were two to six or eight inches in height, and all very distinctly cut. Those near the character resembling a large capital E were nearly effaced by the weather and could not be accurately outlined.

Ten miles from this rock, at Cohn springs, I was informed that a number of rocks were similarly inscribed, with a much greater variety of designs, but I was unable at the time to visit the local-

ity. My companion, Mr. W. F. Hendsch, kindly outlined a few of the characters for me, which I give below:



The above are signs selected at random from the great variety that he had observed on the rocks. The size is approximately indicated. He had been informed that they were intended to indicate the different localities where water might be obtained in that region, a straight line attached to a circle representing the trail leading to a tank or pool of water, the circle alone standing for a natural water tank or reservoir or for a spring. The figure above given where the straight line is crossed by a winding one was intended to describe a short cut to the water; the trail (straight line), leaving the wash or ravine and going across a divide a number of times, thus lessening the distance to the water, instead of following the natural course of the wash.

C. R. Orcutt.

#### NOTES ON THE FLORA OF CUSTER COUNTY COLORADO—II.

*Sidalcea maluceflora*, Gray. Grows in open ground in the valley, always in damp places, where it is of sufficient abundance for its pink flowers to give a color to the landscape. Also found in Fremont county.

*Sidalcea candida*, Gray. In shady spots by creeks, in the mountains. Also in Summit and Mesa counties.

*Linum perenne*, L. Abundant of the typical form up to the lower limit of pines, in open ground.

*Acer glabrum*, Tow. Very frequent by creeks as high as 10,000 feet. Fungus-like growths on the leaves are produced by an insect of the genus *Phytoptus*.

*Thermopsis rhombifolia*, Rich. A *Thermopsis*, sometimes presenting all the characters of *rhombifolia*, sometimes tending to *montana*, makes the valley bright with its yellow blossoms in May.

*Lupinus argenteus*, Pursh. Occurs at about 8,400 feet of the var. *decumbens*, Wats. In the collection of Mrs. M. E. Cusack, an enthusiastic field-botanist resident here, is a specimen from

near Short Creek (about 8,400 feet altitude) representing a new variety. *Sericea*—rather smaller, more silky throughout, stem densely white-silky.

*Astragalus caryocarpus*, Ker. One of the earliest flowers of the year, in sandy places in the open, at about 8,000 feet. This species was kindly identified for me by Dr. Geo. Vasey.

*Oxytropis lamberti*, Pursh. The notorious loco-weed, on which much has already been written. The typical form has white flowers, while in an otherwise similar variety, *lilacina*, the flowers are pale lilac. The variety *sericea* also occurs. I have been making a list of the insects frequenting this plant in Custer county—*Cantharis nuttalli*, say, feeds extensively upon it; a gall was found on a flower-stalk, apparently belonging to a Trypetid fly; small pinkish Lepidopterous larvæ, perhaps those of *Walshia amorphella*, Clem., burrow in the root and crown, and are erroneously supposed by some ranchmen to be the cause of the evil effects of the plant; the butterflies *Danais plexippus* and *Papilio asterias* were observed visiting the white flowers of the typical form; while the beetles *Hippodamia convergens* and *Coscinoptera Vittiaga*, and the Homopteron *Proconia costalis* are occasionally found upon it.

*Fragaria vesca*, L. Exceedingly plentiful above 8,200 feet, but does not fruit nearly so freely as I have seen it doing in Kent and Sussex, England. Also found in Mesa, Delta, and Pueblo counties.

*Potentilla arguta*, Pursh. 'Black brush,' abundant and troublesome to ranchmen. I found one plant of the var. *glandulosa* (*P. glandulosa*, Lindl.) near Querida. I also found *arguta* in Summit county, and *glandulosa* in Lake county.

*Potentilla anserina*, L. Abundant in the valley, differing slightly in general facies from the English form of the species.

*Rosa blanda*, Ait., and var. *arkansana* (*R. arkansana*, Porter.) These and other roses of the Sayi group are plentiful at about 8,400 feet, and so variable as to defy separation into species. Typical forms, agreeing precisely with the descriptions given in the books, are quite the exception. A fungus, *Phragmidium subcorticium*, Schrank, occurs upon the leaves.

*Saxifraga punctata*, L. In shady places by creeks at about 8,500 feet altitude.

*Sedum stenopetalum*, Pursh. Very abundant in rocky ground at about 8,400 feet. It is probably the food-plant of the *Par-nassius sminthens*, which flies there.

*Epilobium angustifolium*, L. Abundant at about 8,400 feet, presenting two well-marked forms. Found also in Summit, Delta and Lake counties.

*Oenothera biennis*, L. Abundant and variable.

*Oenothera coronopifolia*, Torr. and Gray. Abundant at about 8,300 feet.

*Echinocereus viridiflorus*, Eng. The only abundant cactus from 8,000 to 8,400 feet. Flowers early in June.

*Cymopterus montanus*, Torr. and Gray. Common on the prairie, eaten by cattle. Flowers early in April, being one of the first flowers of the year.

T. D. A. Cockerell.

WEST CLIFF, CUSTER COUNTY, COLO., October 14, 1888.

---

### STRAWBERRY PEAR.

This is the fruit of *Cereus triangularis*, a tall, climbing cactus of tropical America, with large, triangular stem, and one of the largest, handsomest flowers of all the night-blooming species of *Cereus*. The scaly buds of this cactus are known among the Jamaican peasantry as *Godochro*, and are used by them as a culinary vegetable—particularly as an ingredient in soups. They were formerly used in the preparation of the celebrated West Indian ‘pepper-pot.’ The fruit of the strawberry pear contains a pleasant, sweet pulp, inclosing numerous black seeds. The *Cereus triangularis* is often seen in South Florida, but, although flowering freely, it rarely produces fruit. Mrs Theo. B. Shepherd, of San Buenaventura, California, possesses perhaps the finest plant of this species in the United States, now about thirty feet high, and bidding fair to occupy the whole front of her house. She writes that ‘the flowers are grand.’

---

### ON THE RIVER BANK.

To-day I wandered on the river bank near the old mission of San Diego. Idly I plucked a flower—a belated *Erythraea venusta*, as fresh and beautiful as in early spring. The bright cardinal *Mimulus* caught my eye; close beside it grew the oleander *Erigeron canaelensis*, whose acquaintance I had first made far away. The white flowers of a mock willow (*Bacharis*) showed among the willows, while beside it, the tall *O. Enóthera* displayed its golden flowers. Menzie’s golden rod was growing not far away and with it *Stephanomeria virgata*.

The “official” varvain spread itself regardless of the fact that the land was of immense value, and near by the large white or purplish-tinged blossoms of the *Datura* were visible. The old familiar plantain, the *Cotula*, and wild *Heliotropicum*, and the yellow clover were also noted. My hands were getting full of the many colored beauties—so natural and unassuming in their simplicity.

Among less conspicuous of the flowers I gathered were two kinds of *Eriogonum*, the *Eremocephalus setigera*, a *Polygonum*, *Ambrosia*, *Cucurbita palmata*, a few grasses and possibly other plants. The sycamore, cotton wood and willow led in the bulk of wild vegetation, and the hedges of pomegranates and tuna cactus, and the olive, fig and palm trees of the mission formed a pleasing back ground. Here we have mention of the twenty commoner wild plants in bloom to-day at Grantville.

SEPTEMBER 23d, 1888.

C. R. Orcutt.

## THE CHINAMPAS.

THE WEST AMERICAN SCIENTIST for the month of June, 1888, has just fallen into my hands, and therein I read the leading article by Mr. M. Buysman on 'Artificial Floating Islands.' I am somewhat surprised to find it there stated that artificial floating islands \* \* \* are only found in some lakes in Mexico, where they are used for agricultural purposes, and in these floating gardens all vegetables grow very luxuriently. It is to the use of the present tense throughout the reference to the famous floating islands of Mexico, that I desire to call attention, without wishing to criticise Mr. Buysman.

The fact is, the floating islands no longer exist in Mexico. They have become fixtures. The waters of the lake in which they once floated like islands of enchantment, have receded for several miles from the city whose walls they once washed. A canal runs from the city of Mexico to the present lake Xochimilco, and along the banks of this canal (La Viga it is called), the floating gardens were permanently moved many years since. They still retain, however, the name they possessed in the times of the Aztec Empire, Chinampas.

I have often visited the Chinampas, and perhaps a brief paper on that subject will not come amiss to the readers of THE WEST AMERICAN SCIENTIST.

The manner in which the Chinampas were originally contracted differed little from the plan proposed by Mr. Buysman. The idea was derived from nature. Mosses of thickly interwoven roots of trees and vegetables often become detached from banks where the soil has no very great specific gravity, and float sufficient quantity of such soil for the growth of vegetables. Seizing this idea, and acting upon it, the Aztecs made rafts of wicker work, nearly water tight, and filled them with silt or sediment from the bottom of the lake. In such soil plants grew luxuriantly. It was perhaps with some difficulty that the largest of these gardens were moved from place to place, and in time the wicker raft would naturally give way, precipitating a part of the soil, at the same time sediment would collect under an island, whereupon its peregrinations would cease perforce. A number of Chinampas thus gathered together and permanently anchored, filling in took place about them, and finally narrow canals were opened through them to furnish highways where the soil was not strong enough to have wagon roads. So that the Chinampas exist to-day at various places along the canal from the city of Mexico to Lake Xochimilco, in the form of large gardens with soil rather boggy, but rich and capable of producing, with slight effort, the most beautiful flowers and finest vegetables imaginable. These gardens are separated by narrow canals.

The principle Chinampas are found at Santa Anita and at Ixtacalco. It is a delightful excursion down the Viga to Santa Anita, excursionists rarely go beyond that point. The trip is

made in a rude sort of gondola, propelled by a man at the bow with a long pole. Most of the way down, if the day be clear, views may be had of the two magnificent mountains which dominate the valley of Mexico—Popocatepetl and Iztaccihuatl. At Santa Anita on feast days (and every Sunday and most other days are feast days in Mexico, apparently), there is a great concourse of the lower and middle classes of Mexicans. It is well worth while for the tourist to see this phase of Mexican life and try the tamales of Santa Anita, which are famous. The rich colored flowers of Santa Anita supply the flower market of the Mexican capital, while the Indians of Ixtacalco supply most of the vegetables eaten by the capital anos. *Arthur Howard Noll.*

EAGLE PASS, TEXAS, October, 1888.

---

### FRUITS AND FLOWERS IN SOUTH AFRICA.

'Yanka Girls in Zulu Land' is a book recently published by some young Americans who went there seeking health for one of their number, and contains some statements that might reconcile us to a life in the Transvaal even, a thousand miles from Cape Town. Every street at Potchefstroom is described as a boulevard of oranges and peach trees growing side by side. 'The very hedgerows are figs and quinces, while everywhere may be seen lemons, shaddocks and bananas.' There is the greatest variety and abundance of flowers, but even the most beautiful roses are scentless. Orchids innumerable abound on the streams of Fable Mountain. There are geraniums, heliotropes, lobelias, a great variety of trailing vines and about 350 species of heather, making the mountain sides look like warm-hued carpets.

The climate is delightful and healthful, but the thunder storms are terrific. Southern California is described, however, by others as still more attractive.

---

### BIBLIOGRAPHY.

LORD WALSHINGHAM.—"Steps toward a revision of Chamber's Index of (Lepidoptera Fineina), with notes and descriptions of new species" in "Insect Life," 1888, pp. 81-84. The first part of this valuable contribution deals with the genera *Cleodora* and *Dactylota* of the former, five species are added to the North America list from California, viz.: *C. Striatella* Hb., "exactly similar in all respects to the typical European form," *C. modesta*, sp. nov., *C. canicostella*, sp. nov., *C. tophella*, sp. nov., and *C. sabulella*, sp. nov. The genus *Dactycota* was previously only known by a single species from Western Europe, and it is therefore quite remarkable to have *D. Snellenella*, n. sp., coming from Arizona. The whole of this paper illustrates the well-known fact of the resemblance between the fauna of the Pacific slope of North America with that of Europe. The author states

that the name *Dactylota* is preoccupied in Echinodermata, and should rightly be changed. In such cases, it is better to retain substantially the same name, altering the termination somewhat, so that the two genera need not be confessed. According to this rule, *Dactylota*, Snellen, might become *Dactylotula*.

A. R. GROTE describes three new species of Noctuidæ, *Agrotis agilis* from Vancouver, *Xylomiges fletcheri*, also from Vancouver, and *Orthosia hamifera* from California. The last is allied to *O. purpurea*; but larger. "Canad. Entom.," 1888. 128-131.

I. B. LEIBERG. Mosses in Northern Idaho, *Neckera menziesii* fruiting there. "Bot. Gazette," 1888. 165.

W. O. EMERSON. Albino birds of nine species, and a melanic robin in California. "Ornith. & Oologist," 1888. 82-93.

L. O. HOWARD.—"The Chalcid genus *Rileyia*." in "Canad. Entom.," Oct., 1888., pp. 191-195, and fig. *Rileyia*, Howard, was based on a species (*Rileyia splendens*), found by Mr. Koebele at Los Angeles, California, and the present paper enters into a discussion as to which has priority, this or *Rileyia*, Ashmead, a genus of Eurytomince proposed by Mr. Ashmead, about the same time in Bull. 3 of the Kansas Experiment Station, and briefly defined somewhat earlier in a table of genera in "Entomologica Americana." Mr. Howard, discussing in the fairest spirit, claims priority for his own genus, but we are bound to say that we should be rather inclined to admit Mr. Ashmead's priority of description, whatever our wishes on the subject might be. At the same time, we rather doubt the propriety of publishing descriptions of new genera and species in the Bulletins of Experiment Stations, where they are not accessible to entomologists at-large.

T. D. A. C.

### EDITORIAL.

The promised index, thanks to our correspondent, Theo. D. A. Cockerell, is in the printer's hands.

Dr. C. Hart Merriam, Secretary of the American Ornithologist's Union and Chief of the Bureau of Ornithology and Mammalogy, has spent a few weeks this summer along the coast, from Puget Sound southward. His visit in the country, with relatives at Escondido, was cut short by the illness of his sister.

Richard A. Proctor, the eminent astronomer, was one of the victims of fever in New York City.

Dr. C. C. Parry has botanized in the central part of the State this summer, studying certain genera—*Ceanothus*, *Arctostaphylos*, etc., and has returned to his home in Davenport, Iowa. Prof. Greene has been in the field, we understand, but the results are not yet public. Dr. Edward Palmer has visited several localities, but found conditions unfavorable for botanizing. Walter E. Bryant made a successful trip into Lower California, collecting birds. If others have been doing anything let us hear from them. Altogether science has not been very industriously pursued on our coast the past summer.

## NOTES AND NEWS.

Mr. Crossman, of the California State Mining Bureau, asserts that the Klamath river, in the Siskiyou mountain foothills, is the last remnant of a stupendous river like the Mississippi or Amazon, which watered broad fertile valleys previous to the upheaval of the present coast range of mountains. This was at a period contemporaneous with the mammoth, mastodon and other species of that creation. The bones of these animals are found on the banks of this prehistoric river. It is also asserted that a print of a moccasined foot, two feet in length, was lately discovered at Soda Bar in the Siskiyou foothills, and Mr. Crossman has made arrangements to secure a plaster mold of the foot-prints for preservation in the State Museum.

Prof. Morse, of Salem, Mass., has invented a most interesting and practical method of utilizing the heat of the sun. The arrangement consists of a shallow box, the bottom of which is of corrugated iron, and the top of glass, and is placed in such a position that the sun shines directly upon it, the rays of the sun pass through the glass and are absorbed by the iron heating it to a high temperature, and by a system of ventilation, a current of air is passed through the apparatus and into the room to be heated. By these means the air has been heated on sunny days to about ninety degrees of Fahrenheit by passing over the iron.

One of the human foot-prints found in volcanic rock in Nicaragua several years ago, is described by Dr. G. Brinton as being nine and one-half inches long, three inches wide at the heel and four and one-half at the toe. The apparent length of the foot itself is eight inches. Dr. Brinton considers the foot-prints genuine but is uncertain whether they are so ancient as has been supposed.

## PUBLISHERS' NOTES.

Mr. George Kennan contributed to the September CENTURY an article on 'Exile by Administrative Process,' in which he gives a great number of instances of the banishment of persons to Siberia, without the observance of any of the legal formalities that in most countries precede or attend a deprivation of rights. Mr. Kennan also discusses, in an open letter in this number of THE CENTURY, the question, 'Is the Siberian Exile System to be at Once Abolished?' stating his reasons for believing that the plan of reform now being discussed in Russia, and which is said by the London 'Spectator' to involve the entire abolition of exile to Siberia as a method of punishment, will not be put into operation. Mr. Kennan says that the present plan is one proposed by the chief of the Russian Prison Department, with whom he had a long and interesting conversation just before his departure from St. Petersburg. It grew out of the many complaints of the respectable inhabitants of Siberia, who demanded that the penal classes of Russia should not be turned loose upon them. The Russian official only hoped to restrict and reform the system, so as to make it more tolerable to the Siberian people, by shutting up in prisons in European Russia a certain proportion of prisoners who are now sent to Siberia. This reform would have affected in the year 1885 fewer than three thousand exiles out of a total of over ten thousand.

Before such a plan goes to the Council of State for discussion it is always submitted to the ministers within whose jurisdiction it falls—in the present case, the Minister of Justice, the Minister of Finance, and the Minister of the Interior. Two of these officers have already disapproved of the plan, the Minister of Justice declaring that 'exile to Siberia for political and religious offenses must be preserved,' and it is Mr. Kennan's belief that the scheme will not even reach the Council of State.

This is by no means the first measure of reform which has been submitted to the Tsar's ministers, but every effort has so far been fruitless, and the plans have been found 'impracticable.'



**NEW YORK**  
FIFTH AVE. & 42ND ST.

Co-operation Reduces Cost  
**A Watch for \$38**

Fully EQUAL for Accuracy, Durability, Appearance and Service, to any \$75.00 Watch.

Philadelphia's building associations have done much toward building it up and making it the city of homes. The same system of co-operation carefully & economically managed, has built up *The Keystone Watch Club Co.* until they are now selling more Watches to consumers than all others combined. They handle only the

**Keystone Dust-proof Watch**

which is deservedly regarded as the crown and climax of Pennsylvania's manufactures. This Watch contains every essential to an accurate time-keeper, and many important improvements patented by the Company. They are Dust and Damp Proof, a quality possessed by no other movement in the world. Jeweled with genuine rubies. Patent Stem Wind & Set, strongest and simplest. Sold through authorized agents at \$38.00. Either all cash down or \$1.00 per week. An *Ajax Watch Insulator* given free with each Watch.

**Keystone Watch Club Co.**  
Main Office in Company's Own Building,  
904 Walnut St. PHILADELPHIA, PA.  
Agents Wanted

**AJAX**  
Watch Insulator,  
\$2.00  
A perfect protection against magnetism. Fit any watch. Sent by mail on receipt of price. We refer to any Commercial Agency



**PHILA.**

OUR  
**\$10 14-Karat Gold**  
Filled **CHAIN**  
is guaranteed to wear **20 Years**, and is **33 1/3%**  
**14-Karat Solid Gold**

Look for the stamps  
—K. W. C. Co. 14 K. F. L.—  
and buy the **BEST.**

**DETROIT** 50 GRISWOLD ST.  
**WASHINGTON** 67 BERNESE AVE.  
**PITTSBURGH** 514 PENN. AVE.  
**ST. LOUIS** 317 N. 3RD ST.  
**BALTIMORE** 201 N. BALTIMORE ST.  
**CHICAGO** 156 W. WABLER MAIN BLDG.  
**ST. CINCINNATI** 201 N. BERT ST.

## NATURALISTS' SUPPLY DEPOT.

Send for Price Lists of  
BIRDS' SKINS, BIRDS' EGGS, GLASS EYES,  
and Supplies for  
TAXIDERMISTS, OOLOGISTS & ENTOMOLOGISTS  
**Frank B. Webster,**  
409 Washington St., BOSTON, MASS.

## ROYAL PALM NURSERIES

The finest and most extensive collection of *Tropical* and *Semi-Tropical Plants* in America. Many adapted to Southern California. More than 20 varieties of bananas. 150,000 one year old palms. Fruit, ornamental and economical plants from Australia, Japan, Hong-Kong, India, South Africa, South America and all parts of the tropical world. New and valuable descriptive catalogue of 100 pages, mailed to any address, upon receipt of 10 cts. Address,

**REASONER BROS.,**  
Manatee, Florida.

## Doubly Terminated Quartz Crystals

Or the So-Called  
**American Rhine Stone.**

We have spent much time and money during the past summer collecting the celebrated crystals of Herkimer County, the only locality in the world where they are found so perfect and brilliant, and now have a complete stock, from the common varieties to the rarest forms, which we are selling at prices that guarantee satisfaction.

Our \$1 trial lots for amateurs (40 crystals) are the best ever put up for the money and our \$5 to \$25 lots for advanced collectors were never equalled in quality.

Correspondence with colleges especially desired.

**KLOCK & GRISWOLD,**

**East Schuyler, Herkimer Co., N. Y.**  
Edgar J. Klock. D. Griswold, A. B.

## PORTRAITS.

### YOUR HOME MADE BEAUTIFUL

By adorning them with the  
**FACES OF LOVED ONES.**

The *New York Artists' Union* is the only organization doing *genuine Crayon, Pastels and Oil Portrait* of friends living or dead, from photographs, tin-type or any correct likeness. They can fill, and therefore solicit orders from all parts of the United States. *Conscientious work on the smallest as well as the largest contracts is their rule. Satisfaction guaranteed or no pay required.* All work done by *Graduated Artists.* Now is the time to send your order. Send for our illustrated circular of prices, etc., to

**The New York Artists' Union,**

For trade prices address C. R. ORCUTT, San Diego, Cal. [Mention this paper] 10 East 14th St., New York.

## THE GIANT CACTUS.

Living plants of this "Monarch of the Desert" supplied at from \$5.00 to \$100.00 each, according to size.

**B. F. JOHNSON & SONS,**  
ZENOS, A. T.

For trade prices address C. R. ORCUTT, San Diego, Cal.

## THE LAKELAND NURSERY COMPANY

Offer the largest and most complete collection of CITRUS Fruit Trees to be had in Florida. PRICES VERY LOW. Send for Descriptive Catalogue and Price List.

Address, **E. H. TISON, Business Manager,**  
Lakeland, Polk Co., Florida.

## 91,700 ORANGE TREES

Shipped to California last season. They arrived in good condition. My new catalogue is now ready, containing descriptions of all the leading varieties of Orange and Lemon Trees.

**H. L. WHEATLEY, Altamonte Nurseries,**  
Palm Springs, Orange Co., Florida.

## "NOTHING SUCCEEDS LIKE SUCCESS."

(*Editorial from the Cosmopolitan, December, 1882.*)

Before those famous taxidermists and hunters, the Verraux Freres, established themselves in Paris, natural history museums were compelled to rely upon picking up their specimens in all parts of the world. The keen intelligence of the Verraux Bros. was not long in discovering a means of serving the cause of science and of advancing their own fortunes at the same time. They established a sort of clearing-house for wild beasts, birds, fishes, and reptiles, with branches in every quarter of the globe, and from whom you could order a stuffed elephant, giraffe, a Bengal tiger as you would flitch a bacon from your butcher, or a boiled lobster from the fish-monger.

While the Verraux Freres were gaining a world-wide reputation, an American lad, William H. Winkley by name, was pursuing his studies at the famous technical schools of the French capital, and, when his means were all but exhausted, he left his lodgings in the Latin quarter and apprenticed himself under these famous masters. After serving a long and laborious apprenticeship in the study of animal forms, anatomy, and drawing, he considered himself sufficiently equipped for the practical work of his vocation. Returning to America, and selecting a small interior town where rents and living expenses were light, he set up an establishment of his own, as large as his limited means would allow.

To-day, he supplies the largest museums of the world with stuffed specimens from the elephant down to the smallest rodent, besides large quantities of minerals, rocks, fossils, casts of fossils, skins, and skeletons (unmounted) of animals of all classes, and often the wild animals themselves, alcoholic specimens, insects, crustaceans, shells, echinoderms, corals, sponges, and botanical specimens, from every quarter of the globe and in a great variety of form and price. Also anatomical preparations, chemical, philosophical and optical instruments, with Naturalists' supplies of every description, and, the Verraux Freres being now dead, he has established, as they did, stations upon every continent for the collection of natural history specimens. The attaches of all the stations are over 100 in number, many of whom are specialists.

At his American headquarters at Clearfield, Iowa, there are not far from 100,000 specimens of all classes. Besides mounting the skins sent in by his own collectors, this eminently successful taxidermist takes custom work in his department from those desiring the same, and many hundreds of persons and museums throughout the civilized world are constantly sending him mammal and bird skins and skeletons for restoration. Especially is this true of those scientific persons and wealthy individuals, who, while abroad, have shown prowess in the hunt.


But it is not alone in taxidermy that this cosmopolitan naturalist has won an unrivalled reputation. Years ago he devised a plan whereby even those of moderate means could possess a good cabinet. This, the installment plan, has from the start been a success, and in hundreds upon hundreds of cases has proven itself an inestimable boon to those of moderate means who desire a good collection. Many of the best collections in this country have been obtained entirely upon this plan and students, professional men, schools and colleges have all expressed themselves perfectly satisfied with its workings in their respective cases.

Prof. Winkley is strictly honest and reliable, and if any of our readers want anything in his line (see advertisement elsewhere,) we would recommend them to write to him.

---

This unsolicited editorial was written more than seven years ago. In the interim we have grown considerably, and to-day stand at the head of the museum furnishing business in the world. We are the only house outside of Paris, that sells collections on installments. Do you want to secure a good collection on easy terms? If so, write to us.

**W. H. WINKLEY, Clearfield, Iowa.**

 Persons having private collections that they wish to dispose of, would do well to send lists to us.

—A—  
FINE INDIAN—  
—ARROW-HEAD

For only 10 Cents.

F. C. JOHNSON, Bonville, N. Y.

THE WORLD OF NATURE.

A MONTHLY JOURNAL DEVOTED TO NATURAL History, Mineralogy, Archæology, Numismatics, Philately and Bric-a-Brac. Edited and published (the last week in each month) by S. JACOB, Naturalist, (late of N.Y. Aquarium and Eastbourne, Eng'and, etc.) NEWPORT, R. I., \$1 per year, 50c for 6 months, single copies 10c; (None free). First-class advertisements only solicited; 10c per line; \$1 per inch (12 lines).

JOB PRINTING!

NOTE HEADS—Size 5½x8½; for 250, 80c; 500, \$1 50 1000, \$2 50

ENVELOPES—Size 6, business size; for 250, \$1 25; 500, \$2; 1000, \$3.

BUSINESS CARDS—2¼x3½; for 250, \$1; 500, \$1 50; 1000, \$2 50; extra 1000, \$1 50

CIRCULARS.

Size 4½x6, not over 150 words; for 250, 75c; 500, \$1; 1000, \$1 50, extra 1000, \$1.

Size 6x9, not over 250 words; 250, \$1; 500, \$1 50; 1000, \$2 00; extra 1000, \$1 25.

Size 9x12, not over 450 words; for 250, \$2; 500, \$2 50; 1000, \$3; extra 1000, \$1 75.

We use only the best quality of paper, and do first-class work. All printing delivered free of charge. Every description of Job and Commercial Printing done, and estimates cheerfully furnished.

Address THE CHAMBERLAIN PRINTING CO.,  
284 Pavonia Ave, Jersey City, N. J.

HAVE YOUR NAME PUT IN THE  
AMERICAN COLLECTOR'S DIRECTORY

It will cost you but 20 CENTS, which includes your name, address, copy of the Directory, branch of collecting, etc. It will also bring you hundreds of free sample copies of magazines, papers, etc. Don't wait but send at once. Write name plainly and state if you desire to correspond or exchange. W. H. PLANK, Publisher, Wyandotte, Kansas.

S. JACOB, NATURALIST,  
119 AND 121 BELLEVUE AVE., NEWPORT, R. I.  
—AND—  
2 CASINO BLOCK, NARRAGANSETT PIER, R. I.

Student's Aquarium (marine and fresh water); how to make and manage, by S. Jacob, with catalogue of curiosities, shells, bird's eggs, etc., on receipt of 10 cents.

THE STRAWBERRY FOR THE SOUTH.  
HOFFMAN'S SEEDLING!

Most productive, large, of the best quality and UNEQUALLED FOR MARKET. I offer strong plants, in large and small quantities, at reasonable prices.

CATTLEY GUAVAS and JAPAN MEDLARS; all the finest ROSES, in good, healthy plants; forty varieties of DWARF ORANGE TREES, LEMONS, LIMES, Etc.

Address ARNOLD PUETZ,  
Greenland, Duval Co., Florida.

—THE—  
RECITER'S COMPANION!

Is the name of a Monthly Magazine devoted to Choice Subjects for every occasion. Contains many original articles and valuable instructions.

50 cts per year; 6 mos, 25 cts.

Sample for stamp; no postals answered.

THE RECITER'S COMPANION,

Halifax, N. S.

WHY IS IT THAT THE SUBSCRIPTION List of the AGASSIZ COMPANION is so large? Because we give you a handsome 16 to 22-page magazine filled with choice original articles of Popular Science every month. Issued the 20th of each month. Established 1886. The largest, cheapest and best magazine of its class published. Only 50c a year. Sample copy 5c; none free. You can have your name inserted in our American Collectors Directory and THE COMPANION 1 year for 60c.

W. H. PLANK, Publisher, Wyandotte, Kansas.

THE SCIENTIST!

A monthly magazine by the Fitchburg Agassiz Assembly. Should be in the hands of every Agassiz member.

Price 50c a year; 5c a copy; none free. Advertising rates on application.

W. L. EMORY, Publisher, Fitchburg, Mass.

PHOTO-ENGRAVING AND DESIGNING.

GOOD WORK AT LOWEST PRICES!

NEWSPAPER WORK A SPECIALTY!

Illustrations for all purposes. We are offering EXTRA LOW rates at present to advertise our business. Correspondence on the subject desired.

H. A. CARHART, Collamer, N. Y.

LOOK! OH! LOOK!

500 4x7 Circulars, by mail, 75c.

100 Letter Heads, 35c.

100 Envelopes, 30c.

MIX BROTHERS, BUTLER, OHIO.

P. S.—Special rates on larger orders.

COLLECTORS!

Large stock in Mammals (skins, skeletons and skulls), Bird Skins and Eggs, Amphibia, Myriapods, Crustacea, Echinoderma, Insects, Fossils, Shells (marine, land, fresh water), etc., etc., from various trans-oceanic countries, especially "The Ancient World."

"Linnæa" Institution for Natural History,  
BERLIN, GERMANY.

Our Agent in the U. S. A.:

HERMANN ROLLE,

33 Ave. A, New York City

Will send Catalogues on application.

SHELLS, MINERALS AND FOSSILS, SEEDS,  
Bulbs and Plants. C. R. ORCUTT, San Diego, California.

# JOSEPH GILLOTT'S Steel Pens

FOR ARTISTIC USE in fine drawing,  
Nos. 659 (Crowquill), 290 and 291.  
FOR FINE WRITING,  
Nos. 303 and Ladies', 170.  
FOR BROAD WRITING,  
Nos. 294, 389 and Stub Point, 849.  
FOR GENERAL WRITING,  
Nos. 332, 404, 390 and 604.

Joseph Gillott & Sons, 91 John St., N. Y.

HENRY HOE, SOLE AGENT,  
Sold by ALL DEALERS throughout the World.  
Gold Medal Paris Exposition, 1878.

A. WENTSCHER,  
GENERAL COMMISSION  
FORWARDING AND SHIPPING.  
San Diego, Cal.

**ARE YOU FOND OF USING TOOLS OR**  
Tinkering? If So send One Dollar for THE  
UNIVERSAL TINKER AND AMATEUR'S ASSIST-  
ANT. Tells Amateurs about turning and lathe work,  
Painting, Staining, Book Binding, French Polishing,  
Wood Finishing, Fretwork, Amateur Printing, the  
Magic Lantern, etc. Single copies 10 cts. Address  
HODGSON & BARWOOD, 294 Broadway, New  
York, N. Y.

**IT WILL PLEASE YOUR BOY**  
or girl and your neighbor's boy or girl to receive a  
paper "all their own." Try sending them the

## YOUNG IDEA

The best low-priced juvenile magazine published; 12  
pages, 36 columns, monthly, illustrated, only 50 cts.  
a year; sample free. Address THE YOUNG IDEA,  
Grant C. Whitney, publisher, Belvidere, Ill.



**FREE** **\$85 solid GOLD WATCH** **FREE**  
Sold for \$100 un-  
til lately. Best \$85  
watch in the world. Per-  
fect time-  
Keeper. Warranted. Heavy  
Solid Gold Hunting Cases.  
Elegant and magnificent.  
Both ladies' and gents' sizes  
with works and cases of  
equal value. **ONE PERSON**  
in each locality can secure one  
**FREE**. How is this possible?  
We answer—we want one per-  
son in each locality, to keep in  
their homes, and show to those who call, a complete line of our  
valuable and very useful **HOUSEHOLD SAMPLES**.  
These samples, as well as the watch, we send free, and after you  
have kept them in your home for 2 months and shown them  
to those who may have called, they become your own property;  
it is possible to make this great offer, sending the **SOLID**  
**GOLD** watch and **COSTLY** samples free, as the showing of  
the samples in any locality, always results in a large trade for  
us; after our samples have been in a locality for a month or two  
we usually get from **\$1000 to \$5000** in trade from the  
surrounding country. This, the most wonderful offer ever  
known, is made in order that our samples may be placed at once  
where they can be seen, all over America. Write at once, and  
make sure of the chance. Reader it will be hardly any trouble  
for you to show the samples to those who may call at your home  
and your reward will be most satisfactory. A postal card on  
which to write us costs but 1 cent and after you know all, if you  
do not care to go further, why no harm is done. But if you do  
send your address at once, you can secure **FREE** one of the  
best solid gold watches in the world and our large line of  
**COSTLY SAMPLES**. We pay all express, freight, etc.  
Address **GEO. STINSON & CO., Box 712, PORTLAND, MAINE**.

# Consolidated National Bank.

**CAPITAL PAID IN, - \$250,000.**  
**SURPLUS FUND, - - 50,000.**  
**Undivided Profits - - 75,961**

BRYANT HOWARD, - - - - President.  
E. W. MORSE, - - - - Vice-President.  
JOHN GINTY, - - - - Cashier.  
W. H. CLARKE, - - - - Assistant Cashier.

## —DIRECTORS.—

Hiram Mabury, O. S. Witherby, John Ginty,  
E. W. Morse, James McCoy,  
S. Levi, Bryant Howard.

Exchange on all the Principal Cities of America  
and Europe bought and sold.

# The Savings Bank.

OF SAN DIEGO COUNTY.

In the Consolidated Bank Building, corner of H and  
Fifth streets.

**CAPITAL, - - - \$100,000.**

: : OFFICERS: :  
James M. Pierce, - - - - President.  
Geo. A. Cowles, - - - - Vice-President.  
John Ginty, - - - - Secretary and Treasurer.

## : : DIRECTORS: :

O. S. Witherby, H. Mabury, E. W. Morse,  
Geo. A. Cowles, James M. Pierce,  
James McCoy, Bryant Howard,

Interest Allowed on Deposits. Money  
Loaned on Real Estate.

Every Student of Nature should Sub-  
scribe for

# 'THE SWISS CROSS'

Organ of the Agassiz Association; Edited by the  
president, Harlan H. Ballard. Beautifully illustrated,  
simple, popular in style, reliable and accurate.

**\$1.50 a Year. Issued Monthly.**

With this magazine, \$2.00 a year.

Address, **WEST AMERICAN SCIENTIST,**  
San Diego, California.

# CHANCES TO SWAP.

Notices inserted under this head for five cents  
per line for each insertion; fifty cents per line  
charged by the year. Only exchange notices ac-  
cepted.

What have you to exchange for a rem-  
edy that will cure Catarrh and Hayfever?  
Address, **Mrs. E. E. YATES,**  
Sharon, Wis.

Books wanted by the editor.

**NOTES ON MOLLUSKS OF THE VICINITY**  
of San Diego, Cal.,  
and Todos Santos Bay, Lower California, by C. R.  
ORCUTT, with comments by DR. W. H. DALL. With  
plate. Price, 25 cents C. R. ORCUTT, San Diego, Cal

OCT 2 1890

# The West American Scientist.

12,423.

VOL. V, No. 3.

NOVEMBER, 1888.

WHOLE No. 41.

PRICE: 10 cents; Annual Subscription, \$1.00; Life Subscription, \$10.00.

Published monthly by C. R. ORCUTT, Editor and Proprietor, San Diego, Calif.

## Le Naturaliste Canadien

32-page, 8-in, illustrated monthly.

**\$2.00 A YEAR.**

The only publication in the French Language, on Natural History on this continent.

It is actually pursuing a revision of Hymenoptera with descriptions of several new species and the history of Hemiptera of the Province of Quebec.

Address, **L'Abbe Provancher, Capbrouge, Q., Canada.**

### CLASSIFIED ADVERTISEMENTS.

**A TWO LINE CLASSIFIED ADVERTISEMENT,** only 25 cents a month; \$3.00 a year payable in advance. Each additional line, 10 cents a month, \$1.00 a year. Must be acceptable and paid in advance. Copy of paper free to each advertiser each month while advertising continues.

#### BOOKS.

**SCIENTIFIC BOOKS AND MAGAZINES FURNISHED** by C.R. Orcutt, San Diego, Cal. Old Books wanted in exchange.

**TALMAGE'S SERMONS (14) TO THE WOMEN OF America,** with practical hints to men, 10 cents. The Gospel Herald, 333 Day street, Princeton, N. J.

**SAN DIEGO. CLIMATE, TOPOGRAPHY, PRODUCTIONS, etc.** By DOUGLAS GUNN. 78 pp, with map, 25 cents.

#### SHELLS.

**MY PRICE LIST OF LAND SHELLS FOR 10 cents.** Over 500 varieties. C. R. Orcutt, San Diego, Cal.

#### SEEDS.

**C. R. ORCUTT, SAN DIEGO, CALIFORNIA,** Collector and importer of all kinds of tree, shrub and flower seeds. Californian seeds, bulbs and plants a specialty; also ferns and rare cacti.

#### MINERALS.

**A LARGE STOCK OF FINE AMERICAN AND foreign minerals,** Western minerals and fossils a specialty. Lists in preparation. C. R. Orcutt, San Diego, California.

#### BIRDS, SKINS AND EGGS.

**NEW PRICE LIST OF FRESH SOUTHERN CALIFORNIA Bird Skins** sent for stamp. Charles H. Marsh, Dulzura, Cal.

**NOTICE TO OOLOGISTS.—EVERY ONE PURCHASING \$2.00 worth of eggs** before Dec. 1st will receive a ticket for my prize drawing. The prizes include eggs of Golden, Bald, and Sea Eagle, Iceland, Gyrfalcon, etc. Write for particulars to W. Raine, Dalton St., Toronto, Canada.

## Pacific Coast Steamship Company

The Elegant and Thoroughly Equipped Steamers of this Company sail in Sight of Land the whole distance from San Diego to Alaska.

### Leave San Diego:

CITY OF PUEBLA—November 8, 15, 22, and 29.

SANTA ROSA—November 4, 11, 17 and 24.

### Leave San Francisco:

CITY OF PUEBLA—November 3, 5, 19 and 27—at 8 A. M.

SANTA ROSA—November 1, 9, 14, 22 and 28—at 2 P. M.

Freights received for all points North and East, from 7 A. M. to 5 P. M., every day except sailing days and Sundays.

For further information apply at the Company's offices at the wharf, foot of Fifth street.

**J. H. SIMPSON, Local Agent.**

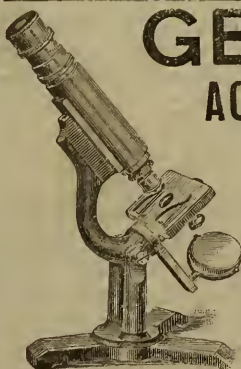
## Ancient Red Man's Tools.

1 large game point, 1 small game point, 1 bird point, 1 barbed base arrow, 1 deep notched base arrow, 1 stemmed base arrow, 1 serrated edge arrow; all 7 are fine and well wrought implements, neatly arranged on card and labeled with date, etc., and sent post paid for 75 cents. List free. Catalogue 7c., or free with order.

DEALERS SUPPLIED.

**J. R. NISSLEY, Ada, Hardin Co., O.**

**FLORA OF SOUTHERN AND LOWER CALIFORNIA.** A Check-List of the flowering plants, ferns, lichens and marine algæ. By C. R. ORCUTT. Price, 25 cents.



## GET THE NEW ACME NO. 5 MICROSCOPE

Complete, with high-class lens 8, 1 in. and 1.5 in. \$28.00.

Send for complete catalogue B, and sample of The Microscopical Bulletin.

**JAMES W. QUEEN & CO.** Makers of the Acme Microscopes, 924 Chestnut St., Phila.

**E. M. HAIGHT'S BARGAIN LIST.**

Box 24, Riverside, Cal.

TERMS—Cash with order, and if in amount less than 25 cents, add 4 cents extra for packing and return postage.

**BIRDS' EGGS.**

Eggs are all perfect, one hole, side blown. The figures in parenthesis indicate the number of eggs in a set. All others are single.

Western Grebe 25c; Tufted Puffin (1) 75c; Pigeon Guillemot 25c; Western Gull (3) 15c; American Herring Gull (3) 15c; Laughing Gull (3) 10c; Common Tern (3) 4c; Black Skimmer 8c; Farallone Cormorant (3) 50c; Brandt's Cormorant (3-4) 25c; Baird's Cormorant (3) 25c; Roseate Spoonbill 50c; Snowy Heron 8c; Louisiana Heron (3-4) 8c; Green Heron (4) 5c; Black-crowned Night Heron 8c; Yellow-crowned Night Heron (3-4) 20c; Clapper Rail 5c; Purple Gallinule 15c; Coot 5c; Willet 20c; Spotted Sandpiper 5c; Killdeer 10c; Wilson's Plover 15c; California Quail 5c; Valley Quail 5c; Prairie Hen 10c; Mourning Dove (2) 2c; Zenaida Dove 50c; Swainson's Hawk 50c; Sparrow Hawk 15c; Barn Owl (4-5) 15c; California Screech Owl 40c; Burrowing Owl (5-6) 15c; Road Runner 15c; Nuttall's Woodpecker 75c; Flicker 4c; Red-shafted Flicker 5c; Scissor-tailed Fly Catcher 8c; Kingbird (3-4) 3c; Arkansas Kingbird 5c; Cassin's Kingbird (3) 20c; Ash-throated Fly Catcher 15c; Phoebe 3c; Black Phoebe 10c; Baird's Fly Catcher 15c; Ruddy Horned Lark 20c; Green Jay 65c; Crow 5c; Cowbird (1) 3c; Red-winged Blackbird (4) 2c; Bi-colored Blackbird 4c; Tri-colored Blackbird 10c; Meadow Lark 8c; Western Meadow Lark 5c; Arizona Hooded Oriole 40c; Orchard Oriole 4c; Bullock's Oriole (4-5) 8c; Brewer's Blackbird 4c; Purple Grackle 4c; Bronzed Grackle 4c; Boat-tailed Grackle 4c; Crimson House Finch (4-5) 4c; Goldfinch 5c; Green-backed Goldfinch 10c; Lawrence's Goldfinch 15c; Western Lark Sparrow 8c; Chipping Sparrow 2c; Field Sparrow 3c; Bell's Sparrow 75c; Song Sparrow (4-5-6) 2c; Heerman's Sparrow 8c; Samuel's Song Sparrow 5c; Spurred Towhee 15c; California Towhee (4) 5c; Cardinal Grosbeak (3) 4c; Rose breasted Grosbeak 10c; Black-headed Grosbeak 10c; Purple Martin 10c; Cliff Swallow 2c; Barn Swallow 2 cents; Bank Swallow 4c; Phanopepla 40c; White rumped Shrike 4c; Warbling Vireo 10c; Bell's Vireo 8c; Mocking Bird (4) 4c; Cat Bird 2c; Brown Thrasher 2c; California Thrasher 15c; Cactus Wren 8c; Rock Wren 40c; House Wren 4c; Parkman's Wren, 4c; Plain Titmouse, 25c; Bush Tit 10c; California Bush Tit 15c; Yellow-headed Tit 40c; Robin 3c; Blue Bird 2c; Western Blue Bird 8c; English Sparrow 4c.

**CURIOSITIES:**

Alligator Teeth 5c; Buffalo Teeth 10c; Bird's Wings (3 varieties named) 5c (15 varieties named) 25c; Crazy Weed Pods 3 for 5c; Cactus Wood, 5 to 25c; Sycamore Tree Balls, 3 for 5c; California Ground Squirrel Tails 10c; Chinese Chopsticks, per pair, 8c; Chinese Game Cards, 3 for 5c; Chinese Slow Matches 5c; Chinese Game Stones, 2 for 5c; Chinese Coins (very old) 5c; Chilacotho Bean Pods (large and curious) 15c; Coral (small white branching) 5c; California Live Oak Tree Acorns, 3 for 5c; California Live Oak Tree Balls 5 to 10c; Clear Quartz 5c; Gold-Dust Sand (S A) per package, 10c; Horse-shoe Crabs 5 to 10c; Hawk Moth Cocoons 10c; Horned Toads, stuffed, 50c; Indian Arrow-Heads 5 to 25c; Japanese Paper Napkins 2 for 5c; Liver Beans 5 to 10c; Money Cowry Shells 2 for 5c; Pampas Grass Plumes, each, 15c, 2 for 25c, 5 for 50c; 12 for \$1; Porcupine Quills, per doz. 5c; Petrified Wood, very fine, 5c to \$1; Sand Tubes 5c; Skate's Eggs 5c; Shark's Eggs 15c; Sea Urchins, Atlantic, 10c; Sea Urchins, Pacific, 5 to 10c; Mud Wasp Nests 5 to 25c; Star Fish, small Atlantic, 5c.

**MINERALS.**

Vermiculite on Quartz, 5c to \$1.25; Idocrase, 5 to 60c; Garnet (Alumin) 5 to 60c; Asmanite, 5 to 25c; Tin Ore (Cassiterite) 5 to 70c; Calcite 5c to \$1.00; Dufrenite 5 to 80c; Obsidian, jet black, 5 to 30c; Petrified Wood, very fine, 5c to \$1.

**SPECIAL OFFERS.**

All parties sending me \$1 for a year's subscription to this magazine will be given 50 cents worth of any of the above specimens as a premium. All ordering specimens from any of my lists amounting to \$1.25 will receive this magazine free for one year. Send 2c stamp for Price Lists. None Free.

P. O. Box 24. E. M. HAIGHT, Collecting Naturalist,  
Riverside, California

## THE OPEN COURT.

Published Weekly at 169 LaSalle Street,  
Chicago, Ill's.

A Journal devoted to Science, Philosophy & Morals.  
Send for Free Sample Copy.

Price \$2.00 a Year. P. O. Drawer F.

## BOOK CHAT!

Brentano's, Publishers, 5 Union Square, N. Y.

Book Chat contains monthly a complete index to the periodical literature of the world. Indispensable to Botanists, Conchologists, Geologists and Scientists generally. \$1 a year; 10c. for a single copy.

## —THE— AMERICAN GEOLOGIST!

IS A MAGAZINE

Devoted to Geology and Allied Sciences--the only one in America--published by a number of Professional Geologists distributed over the central part of the United States. Three Dollars a Year.

Address THE AMERICAN GEOLOGIST,  
Minneapolis, Minn.

## —THE— CALIFORNIA FLORIST:

ONLY \$1 00 A YEAR.

An Illustrated Monthly Journal for Florists, Nurserymen, Seedsmen and Amateurs, with departments of Home Recreation, Vegetable Gardening and Popular Science. Sample Copies 10c. Address

FLORIST PUBLISHING Co., Santa Barbara, Cal.

## FOR 50 CENTS.

We will send you for one year

## —THE— CONCHOLOGISTS' EXCHANGE

The Only Shell Paper in America.

16 Pages Monthly, and full of the Latest  
and Best Shell News.

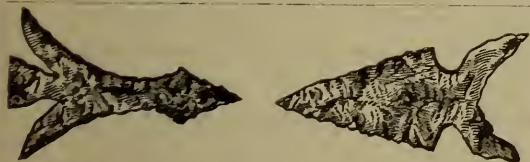
And the following Handsome Premiums:

A neat box of Choice Land Shells, Fresh-Water Shells, or Marine Shells, or Berlin H. Wright's New Check List of North American Fresh Water Bivalves, or D. D. Baldwin's Land Shells of Hawaii.

Don't wait, but send 50 cts. NOW to

WM. D. AVERELL,

PUBLISHER,  
Chestnut Hill, Philadelphia, Pa.



100 VARIETIES of Beaded Buckskin and War Relics of the Sioux of Dakota, Apaches, Pueblos and Navajoes of New Mexico. A large stock of Oregon and other States' Stone Relics of all kinds. All the leading Minerals and Fossils of the Black Hills and Dakota Bad Lands. Wholesale and retail. Send for large, illustrated catalogue.

L. W. STILWELL, Deadwood, D. T.

## GARDEN AND FOREST.

The new illustrated weekly journal of Horticulture, Garden Botany, and Forestry is indispensable to every botanist and botanical library. Each number contains a figure of a new or little known plant (North American) not before figured, drawn by C. E. Faxon, with description by Mr. Leren Watson. The paper is edited by Professor C. S. Sargent, of Harvard, with Professor W. G. Farlow and Professor A. S. Packard, as associates. The early numbers have contained articles by Professors Wolcott Gibbs, G. L. Goodall, W. J. Beal, G. W. Hilgard, John Macono, L. H. Bailey, Herbert Osborne, J. L. Budd, W. Trelease, H. Mayr, W. W. Bailey, D. P. Peaballow, C. R. Orcutt, Abbot Kinney, and other eminent contributors. Special attention has been devoted to California subjects. With the second number was published as a supplement a beautiful photogravure of Mr. A. St. Gaudens's bronze medallion of Asa Gray. No American scientist should be without a copy. The price of this number, with supplement, to non-subscribers, is now 25 cents.

Subscription Price, \$4 00 a year.

Garden and Forest Publishing Co.

TRIBUNE BUILDING, NEW YORK.

## SEEDS! BULBS! PLANTS!

CURRIE BROS.,

—SEEDSMEN AND FLORISTS—

MILWAUKEE, WIS.

## ALL FOR 25 CENTS.

A fine Indian Arrow-head, Piece of Pottery, Starfish, Sea-urchin, Shark's Egg, 3 minerals, Chinese Coins, 14-page price-list of curiosities, etc., copy of COMMON SENSE, a 16-page magazine for collectors, 35c per year.

F. A. THOMAS, Publisher,

Mexico, New York.

THE GEOLOGISTS' GAZETTE is the best 25c paper published for collectors of natural history specimens. Send for free sample copy. It will please you. GAZETTE PUBLISHING COMPANY Elkader, Iowa.

## SHELLS OF THE COLORADO DESERT

\$1.00 for valve of Anodonta Californiensis and specimens of Physa humerosa, Amnicola longinque, and Tryonias.

C. R. ORCUTI,

San Diego, Cal.

## THE MUSEUM.

AN illustrated magazine for Young Naturalists and Collectors, containing articles by eminent Scientists. 25 sets (consisting of the only four numbers published) still on hand. These will be sold for 40 cents per set; original price 15 cents per number.

Address

E. A. BARBER,

Box 2118, West Chester, Penn'a

## RUBBER STAMP AGENTS, ATTENTION!



It will be to your interest to have a copy of our ENCYCLOPEDIA, or Improved Catalogue of Rubber Stamps, [212 pages] which, with its reduced prices, thousands of new Novelties, Cuts, Borders, Designs, etc., is intended to take the place of all other stamp books. Every Page entirely new. Mailed on receipt of 33 cents. None free. Jan. 10th, 1887.

Address—THALMAN MFG. CO., Balto., Md.

# Horsford's

## ACID PHOSPHATE

Prepared according to the directions of PROF. E. N. HORSFORD,  
ESPECIALLY RECOMMENDED FOR

**Dyspepsia, Nervousness, Exhaustion, Headache, Tired Brain,**  
And all Diseases arising from Indigestion and Nervous Exhaustion.

—o—  
This is not a compound "patent medicine," but a preparation of the phosphates and phosphoric acid in the form required by the system.

It aids digestion without injury, and is a beneficial food and tonic for the brain and nerves.

It makes a delicious drink with water and sugar only, and agrees with such stimulants as are necessary to take.

DR. E. W. HILL, Glens Falls, N. Y., says: "An excellent remedy for a tonic Dyspepsia, nervous and general debility, or any low state of the system."


DR. D. A. STEWART, Winona, Minn., says: "Entire satisfaction in cases of perverted digestion, loss of nerve-power, mal-nutrition and kindred ailments."

DR. G. H. LEACH, Cairo, Ill., says: "Of great power in dyspepsia and nervous prostration."

 Descriptive Pamphlet Free.

Rumford Chemical Works, Providence, R. I.

**Beware of Substitutes and Imitations**

 Be sure the word "HORSFORD'S" is printed on the label.—All others are spurious.—Never sold in bulk.



# THE WEST AMERICAN SCIENTIST.

---

VOL. V.

NOVEMBER, 1888.

No. 41

---

## UNDESCRIBED VARIETIES OF *Calochortus Gunnisoni*.

There are three varieties of *Calochortus Gunnisoni*, Watson, which I describe as follows:

1. Var. *imaculatus*. A dark purple subquadrangular spot of some size on the inside of each petal beneath the gland. Petals, pale violet externally, greenish toward base. A purple band above the gland.

2. Var. *immaculatus*. The dark purple infraglandular spots absent. Petals not so violet externally. A purple band above the gland.

3. Var. *purus*. Like the last, but with *no purple band* above the gland.

This *Calochortus* grows in moist but not wet soil—they are particular about this.

*T. D. A. Cockerell.*

WEST CLIFF, CUSTER Co., COLORADO.

---

## THE COLORADO BIOLOGICAL ASSOCIATION.

This association has been formed for the purpose of investigating, in a detailed and systematic way, the Fauna and Flora of Colorado, both recent and fossil, and recording the results in such form as to be a permanent contribution to our knowledge of the Biology of the State. It was commenced early in 1887, as the "Colorado Ornithological Association," and while so known did good work under the leadership of Mr. Chas. F. Morrison, at the Ornithology of Colorado, resulting in a list of about 350 species and sub-species occurring within the State limits, which is now ready for publication. Now that the scope of the Association is widened, still better results are hoped for, as it is accordingly proposed to issue from time to time special bulletins on the fauna and flora of the State, which will be sent free to all members. There will also be an annual report, which will include a complete bibliography of the State for the year. Meetings will be held as often as possible, and it may be possible in the future to

found a library and museum. The annual subscription for members resident in Colorado is \$1.00, and that for corresponding members 0.25. Full particulars may be obtained from the secretary (pro tem), T. D. A. Cockerell, West Cliff, Custer Co., Colorado, who will heartily welcome all co-operation.

---

### AMONG THE MAGAZINES.

“AN ENUMERATION OF THE PUBLISHED SYNOPSIS, CATALOGUES, AND LISTS OF NORTH AMERICAN INSECTS.”—Bulletin No. 19, Div. of Entomology, U. S. Dept. Agriculture, 1888.—The title of this admirable bulletin sufficiently explains its nature, and it need hardly be said that it will be of the greatest value to Western Entomologists, who have so few opportunities for consulting the large public libraries. We should have liked the “List of works on Economic Entomology” (p. 70), to have been a little more comprehensive—only 25 titles are quoted—but probably want of space compelled its reduction within what might be considered desirable limits.

“NESTING OF THE RUDDY DUCK” by W. G. Smith. “Ornithologist and Oologist,” Sept., 1888, p. 132 (on the nesting of *Erisimatura nebida* at Loveland, Colorado.)

T. D. A. C.

“ABSTRACT OF PROCEEDINGS OF THE SOUTH LONDON ENTOMOLOGICAL AND NATURAL HISTORY SOCIETY FOR THE YEAR, 1887” (publ. August, 1888, London, Eng., 127 pp. and 2 plates.) This volume is full of interest for the British Entomologist, but has, as one might suppose, but few references to Western North America. Pl. 2, fig. 2, represents the male sex of a remarkable beetle from Mexico, *Golofa hastatus*, showing the enormous thoracic horn. On p. 72 is a note on insects exhibited from Colorado, including some apparently new species of Hymenoptera. On p. 87, it is stated that a “melanic variety of *Vanessa urticae*” taken in Mexico, was exhibited—doubtless this was *V. milbertii*. P. 89 has an enumeration of Mollusca, said to be from Niagara river, but as a matter of fact, all except the first mentioned were from Colorado. There is also a note on a species of *Helicopsyche* from Colorado, and on pp. 92, 93. An account of a case of mimicry between *Vanessa antiopa* and a species of *Lecustidæ* in the same State.

“A Provisional Host-Index of the Fungi of the United States” by W. G. Farlow and A. B. Seymour. Part 1. Polypetalæ. (Cambridge, Mass., August, 1888.)

All those who take any interest in Mycology will be sincerely grateful to the authors of this list, which supplies so obvious a want that it seems strange that Mycologists in the United States can have done so long without one. The present part embraces

52 pages of clear type on good paper, giving a list of the Polypetalous plants on which fungi have been recorded as found in extratropical North America; with a list of the fungi under each plant, in which full attention is paid to synonymy. Some species of plants stand as hosts to a very large number of fungi, *Liriodendron tulipifera*, for instance, having no less than 86, while the apple tree has 80. It is hoped that the remainder of the list will be issued during the coming winter, when also will be given any additions to part 1 brought to light in the meanwhile.

*T. D. A. C.*

I. M. COULTER and J. N. Rose. New Western Umbelliferæ—*Eryngium armatum*, California, southward to San Diego Co. (Orcutt), *E. vaseyi*. California and Oregon, *Peucedanum martindalei*, Oregon and Var. *angustatum*, Oregon, Wash. Ter. and Vancouver I., *P. donnellii*, Oregon, *P. californicum*, California, *P. vaseyi*, California, *Selinum grayi* (Gmelini Port. & Coult.), Colorado, *S. dawsoni*, Yukon, *Cœlopleurum maritimum*, Wash. Ter. "Bot. Gazette," 1888. 141-145

C. F. MORRISON. A list of some birds of La Plata County, Col., in *Orn. & Ool.*, 1888, p. 115. This valuable little list continues, the present installment being from *Colaptes* to *Buteo*. The author writes of *Colaptes*, "all our flickers are true *mexicanus*, and I am glad to be in a country where *hybridus* is not found; in Wyoming I nearly became demented arranging my numerous specimens taken there."

"INSECT LIFE." Devoted to the economy and life habits of Insects, especially in their relations to Agriculture, and edited by the Entomologist and his assistants with the sanction of the Commissioner of Agriculture. Washington (U. S. Department of Agriculture), Vol. 1, 1888. No. 1, July, and No. 2, August.

Perhaps no department of Government work has ever been more thoroughly up to the standard to which it aimed than the division of Entomology of the Department of Agriculture. Agriculturalists and Entomologists alike have constantly been indebted to the careful and fruitful work of Prof. Riley and his assistants and it is therefore with most entire satisfaction that we greet the issue of a new monthly bulletin, "Insect Life," in which the results of that work, too bulky for full publication in the "Annual Report," will be given in detail, accompanied by many and excellent illustrations. The first number commences with a "salutatory" from Prof. Riley, wherein he says "We hope to make the periodical interesting and useful to all in any way concerned in entomology, and, without further comments or promises, we cordially invite such to co-operate with us in our endeavors." After this follows an illustrated biography of the corn-feeding *Syrphus* fly (*Mesograpta polita*), and many other interesting articles, including descriptions of five new species of *Oncœnemis* by I. B. Smith, namely, *O. fasciatus* from Nevada Co., Calif., *O.*

simplex from Utah, and three others from Colorado. There is also an account of the occurrence of the Chinch Bug in considerable numbers in California, where, however, it is not yet known to do damage. No. 2 contains, among other things, an account of the Morelos Orange Fruit-worm, which proves to be the larval of a fly-*trypeta ludens*. The only notes in this number dealing specially with the West are on depredations supposed to be those of the Western Cricket in Colorado, and a notice of the larval habits of *Dicerca* in the same State.

T. D. A. C.

W. G. SMITH. On the nesting of Audubon's Warbler (*D. auduboni*), in Larimer Co., Colorado, in "Orn. & Ool.," 1888, p. 114.

T. D. A. COCKERELL. On the distribution of Aquatic Forms. "Science Gossip," 1888, p. 182. In this paper the freshwater plants and marine shells and algæ of California are compared with those of Europe, and conclusions drawn. There are also various other remarks on Western species.

---

### ON THE MESOZOIC MAMMALIA.

For a number of years past Professor Henry F. Osborn of Princeton College, has been assiduously devoting himself to the study of the taxonomy and morphology of the Mesozoic Mammalia, and in these investigations, this eminent paleontologist has been materially assisted by having been allowed the free use of the invaluable collections formerly utilized by Professor Sir Richard Owen, and now preserved in the British Museum, as well as the collections of Dr. Lemoine, of Rheims, and the American collections of Cope and Williams College. Enjoying such opportunities as these, and worked over by such a hand, we naturally look for more than ordinary results, and science is by no means disappointed in the matter. Professor Osborn's labors now come before us in the form of a magnificent royal quarto monograph of some seventy-five pages, and published by the Academy of Natural Sciences of Philadelphia, (Vol. IX, No. 2, July, 1888.) It is illustrated by thirty wonderfully clear woodcuts in the text, and two very fine lithographic plates, the handiwork of the famous house of Sinclair & Son, which is sufficient guaranty of their excellence. These drawings are all devoted to either the jaws or the dentition of the group under consideration, and amply illustrate the remarks of the author.

Formerly it was generally supposed by paleontologists, that the mammalian fauna of the Mesozoic period were of very limited number, as so late as 1871, Professor Owen, in his well-known monograph, described but twenty genera, while in the

work now before us, these are brought up to no less than thirty-five, five of which come from the Trias. A very convenient table shows the order of occurrence of these forms in time, so far as they are now known to us, the arrangement in the columns presenting the beds of England, North America, Africa, Australia, and the Continent. It is pointed out by our author, that, "In a rapid survey of this ancient fauna, we are at first struck with the very great diversity which prevails in the form and arrangement of the teeth, consisting of six or seven wholly distinct types; and this at a zoological period which we have been accustomed to consider as the dawn of mammalian life. The above types, although primitive, are essentially mammalian. In one genus only, *Dromatherium*, do we find clear evidence of reptilian affinity in the dentition. Then we are surprised to discover a very close zoological relationship between fossil faunæ of the same age, but having a wide geographical distribution. The most striking instance of this is the parallelism between the American and British upper jurassic fauna." These mesozoic mammals were characterized by their diminutive size, and the excessive number of teeth they possessed, which latter, otherwise, are less archaic in their pattern than we would be led to believe from a mere casual observation; the molars being in unusual numbers. As his task developed, Professor Osborn was led to lay especial stress upon (1) the generic characters of the British mesozoic forms; to show (2) their relationships to modern orders, that is all the known mesozoic species to the existing orders of mammals; and (3), a full discussion of the dentition in all its bearings. This is the fundamental plan of the monograph before us, and upon these lines it has been worked out with marked ability and clearness. The literature of the subject has been carefully gone over, and previous laborers in the same fields given in every instance, full credit for their productions. Space will not admit of our entering in detail upon the admirable classification adopted in this monograph, be it enough to say that it is based almost exclusively on the dentition, and that, "We first observe that the Mesozoic Mammalia divide into two large groups. In the first group, A, one of the incisors is greatly developed at the expense of the others, and of the canine, which usually disappears; behind these teeth is a diastema of varying width, while the molars bear numerous tubercles. In the second group, B, the incisors are small and numerous, the canine is always present, and well developed; the teeth usually form a continuous series, and the molars bear cusps instead of tubercles. These two divisions suggest those which obtain among the modern Marsupials, but are in fact much more sharply defined and widely separated from each other."

In conclusion, we find a general discussion upon the development of the teeth of these mammals in time, and masterly sections devoted to the zoological position of these mesozoic types in the two groups just mentioned, to their relations to the Mar-

supialia and the Insectivora, and finally, an appendix containing additional matter of prime importance. But so concisely are these chapters written, there not being a single sentence in any of them that could be subtracted without evident injury to the whole, and so fully is the matter treated, that it becomes obviously impossible to present their conclusions here without running the eminent risk of not only not doing full justice to their author, but failing to impart any adequate idea of their import to the reader of this brief notice,—the work must be read and carefully studied to be appreciated.

Such a classic production as this, with the subject of which it treats so skillfully handled, is indeed a credit to the science of any country, and it is with a sense of extreme satisfaction that we know that the literature of paleontology has been enriched by the addition of a contribution so thoroughly exhaustive in character, with its matter presented in a form so gratifying to the eye.

*R. W. Shufeldt.*

FORT WINGATE, N. M., August 14, 1888.

---

### BOTANICAL NOTES.

On the Mississippi recently, at Prairie du Chien, I found a single plant of the hoary verbena (*Verbena stricta*), with pure ivory-white flowers, the normal color being blue.

The flowers of this species are larger than those of the other native species, and their color clear and most noticeable. The white-flowered specimen was a conspicuous object, seen against a close, unpainted board fence, about 300 or 400 feet south of Dousman's Hotel, a well known house located directly at the railroad station.

At the same station with *Verbena stricta* is to be found the procumbent *V. bracteosa*, and the ordinary blue vervain (*V. hastata*) of the Atlantic States.

Six miles from Rochester, a blotched *Brunella vulgaris* was found with one or two leaves perfectly white or cream-colored, and most of the others partially so.

SEPT. 25, 1888.

*B. F. Leeds.*

---

### SOME NOTES ON THE CRAY-FISH.

(*Astacus Fluvialilis.*)

The cray-fish is sometimes called the fresh water lobster on account of its resemblance to that crustacean.

In the spring, about the middle of March, when the female cray-fish comes forth from its winter quarters, it has attached to the un-

der part of its tail numerous eggs fastened to small filaments; these eggs are of about the size and color of hemp seed.

These it carries about until sometime in May or June, when they hatch; but they still continue to cling to the filaments until they have gained sufficient strength to start out alone, they are then about  $\frac{1}{4}$  inch long.

While young they grow more rapidly than when they are more advanced in age, they grow a little more than an inch in the first year.

Speaking from personal observations they grow to be about four inches in length when they have obtained their full growth.

The mouth is situated directly in front of where the large claws join the body, and is marked by a pair of jaws running parallel to each other and pointing forwards.

It sheds its shell every few weeks even to the covering of its eyes, after which it is soft for two or three days, it grows only during this state.

While in this condition it conceals itself beneath weeds and stones, because it is now defenceless.

The shell begins to form and is hardened at the end of about four days, when it regains its old confidence.

The cray-fish has the power of reproducing its limbs, when it has lost one through some accident.

Take it all in all they are very interesting, and there is always something new to be found out about them if they are closely watched and studied.

*E. Starks.*

---

### INDIAN MILLS.

It is a well known fact that the Indians raised corn. They certainly had a way to grind or mash it. It is supposed by some that the mortars sometimes found, were used for this purpose; they may have been used in this way, but it is more probable that they were used for pulverizing roots, etc., by pounding with a pestle, for medicine. I have found several pieces of stone, with rounded edges, about two inches thick, and worn very smooth. The whole piece had been about thirty-two inches in circumference. The other part was made of stone shaped like a very shallow mortar, and made to fit the buhr loosely, the corn being placed between them, and ground by hand, something after the style of ancient Egyptian grinding. The stone of which the buhr was made was hard and granular, and when two pieces were struck together, like flint, they would "strike fire." This kind of a mill was used by the Catfish, and perhaps also by the Mohawk, Indians in Southwestern Pennsylvania.

*HUMMING BIRDS.*

BY S. ESTLE MILLER.

In all the field of oology, there is no group of birds so interesting to the naturalist as the humming bird. Its size, its gorgeous colors and the abundance of different species, have given this small bird a pre-eminent position among the feathered tribe. The continents and islands of America are its home, and no other country can boast of a single species. It may be found all the way from the Arctic regions, of the chilly north, to Patagonia in the south. They are more numerous in the West Indies and Central America than in any other part of the continent, and it is here that the most beautiful are to be found. The tiny crest of one of these shines like a sparkling crown of colored light, while the colors adorning the breast are equally brilliant.

The species of the humming bird family now number more than three hundred, and through the energy of naturalists, this number is being increased every year. These birds have taken their name from the soft, humming noise made by the rapid motion of their wings. It is claimed by some that this sound differs in different species, and often to such an extent that an observant ear can detect the species by this noise produced in its flight. One of the very common species here in Ohio is the ruby throat, which takes its name from the feathers that encircle its throat, and shine with a ruby lustre.

The humming bird arrives here in Ohio about the 5th of May, each year, and usually comes in pairs. They begin their nest-building about the first week in June. Not long ago, when out walking, we found the nest of one of the smallest of these birds. It was about half the size of a hen's egg, and was swung to a twig about the thickness of a knitting-needle. It was made of cotton fibers and the down of certain plants, and was covered with small bits of leaves and soft bark. The eggs, two in number, were white, elliptical in shape, and of nearly the same size at each end.

The naturalist Audubon discovered a very curious habit belonging to these birds, and one that he concluded was resorted to in order to conceal the whereabouts of their nest. It was this:

While watching the nest of one he saw the female bird suddenly leave its station on a neighboring limb and shoot perpendicularly into the air until it was lost from sight. After a few moments of patient waiting, he had the pleasure of seeing it descend and alight directly upon the spot where she had constructed her nest.



**NEW YORK**  
DELAWARE & DISTRICT

Co-operation Reduces Cost  
**A Watch for \$38**

Fully EQUAL for Accuracy, Durability, Appearance and Service, to any \$75.00 Watch.

Philadelphia's building associations have done much toward building it up and making it the city of homes. This same system of co-operation carefully and economically managed, has built up *The Keystone Watch Club Co.* until they are now selling more *Watches* to consumers than all others combined. They handle only the

**Keystone Dust-proof Watch** which is deservedly regarded as the crown and climax of Pennsylvania's manufactures. This Watch contains every essential to an accurate time-keeper, and many important improvements patented by the Company. They are **Dust and Damp Proof**, a quality possessed by no other movement in the world. Jeweled with genuine rubies. Patent Stem Wind & Set, strongest and simplest. Sold through authorized agents at \$38.00. Either all cash down or \$1.00 per week. An *Ajax Watch Insulator* given free with each Watch.

**Keystone Watch Club Co.**  
Main Office in Company's Own Building, 904 Walnut St. PHILADELPHIA, PA. Agents Wanted

**AJAX**  
Watch Insulator,  
\$2.00  
A perfect protection against magnetism. Fit any watch. Sent by mail on receipt of price. We refer to any Commercial Agency

THE KEYSTONE WATCH CLUB CO. PHILA. WALNUT ST.

904

DETROIT, 306 GRISWOLD ST.  
WASHINGTON, 507 PENNSYLVANIA ST.  
PITTSBURGH, 622 PENNSYLVANIA ST.  
CHICAGO, 100 N. WABLER HEADQUARTERS  
BALTIMORE, 201 N. BALTIMORE ST.  
ST. LOUIS, 510 N. 7TH ST.

**THE GIANT CACTUS.**

Living plants of this "Monarch of the Desert" supplied at from \$5.00 to \$100.00 each, according to size.

**B. F. JOHNSON & SONS,**  
ZENOS, A. T.

For trade prices address C. R. ORCUTT, San Diego, Cal.

**THE LAKELAND NURSERY COMPANY**

Offer the largest and most complete collection of CITRUS Fruit Trees to be had in Florida. PRICES VERY LOW. Send for Descriptive Catalogue and Price List.

Address, **E. H. TISON, Business Manager,**  
Lakeland, Polk Co., Florida.

**91,700 ORANGE TREE**

Shipped to California last season. They arrived in good condition. My new catalogue is now ready, containing descriptions of all the leading varieties of Orange and Lemon Trees.

**H. L. WHEATLEY, Altamonte Nurseries,**  
Palm Springs, Orange Co., Florida.

**NATURALISTS' SUPPLY DEPOT.**

Send for Price Lists of  
BIRDS' SKINS, BIRDS' EGGS, GLASS EYES,  
and Supplies for  
TAXIDERMISTS, OOLOGISTS & ENTOMOLOGISTS  
**Frank B. Webster,**  
409 Washington St., BOSTON, MASS.

**ROYAL PALM NURSERIES**

The finest and most extensive collection of *Tropical* and *Semi-Tropical Plants* in America. Many adapted to Southern California. More than 20 varieties of bananas. 150,000 one year old palms, ornamental and economical plants from Australia, Japan, Hong-Kong, India, South Africa, South America and all parts of the tropical world. New and valuable descriptive catalogue of 100 pages, mailed to any address, upon receipt of 10 cts. Address,

**REASONER BROS.,**  
Manatee, Florida.

**Doubly Terminated Quartz Crystals**

Or the So-Called  
**American Rhine Stone.**

We have spent much time and money during the past summer collecting the celebrated crystals of Herkimer County, the only locality in the world where they are found so perfect and brilliant, and now have a complete stock, from the common varieties to the rarest forms, which we are selling at prices that guarantee satisfaction.

Our \$1 trial lots for amateurs (40 crystals) are the best ever put up for the money and our \$5 to \$25 lots for advanced collectors were never equalled in quality.

Correspondence with colleges especially desired.

**KLOCK & GRISWOLD,**  
**East Schuyler, Herkimer Co., N. Y.**  
Edegar J. Klock. D. Griswold, A. B.

**PORTRAITS.**

**YOUR HOME MADE BEAUTIFUL**

By adorning them with the  
**FACES OF LOVED ONES.**

The *New York Artists' Union* is the only organization doing *genuine Crayon, Pastels and Oil Portraits* of friends living or dead, from photographs, tin-types or any correct likeness. They can fill, and therefore solicit orders from all parts of the United States. *Conscientious work on the smallest as well as the largest contract's is their rule. Satisfaction guaranteed or no pay required.* All work done by *Graduated Artists.* Now is the time to send your order. Send for our illustrated circular of prices, etc., to

**The New York Artists' Union,**  
Mention this paper] 10 East 14th St., New York.

# “NOTHING SUCCEEDS LIKE SUCCESS.”

(*Editorial from the Cosmopolitan, December, 1882.*)

Before those famous taxidermists and hunters, the Verraux Freres, established themselves in Paris, natural history museums were compelled to rely upon picking up their specimens in all parts of the world. The keen intelligence of the Verraux Bros. was not long in discovering a means of serving the cause of science and of advancing their own fortunes at the same time. They established a sort of clearing-house for wild beasts, birds, fishes, and reptiles, with branches in every quarter of the globe, and from whom you could order a stuffed elephant, giraffe, a Bengal tiger as you would flitch a bacon from your butcher, or a boiled lobster from the fish-monger.

While the Verraux Freres were gaining a world-wide reputation, an American lad, William H. Winkley by name, was pursuing his studies at the famous technical schools of the French capital, and, when his means were all but exhausted, he left his lodgings in the Latin quarter and apprenticed himself under these famous masters. After serving a long and laborious apprenticeship in the study of animal forms, anatomy, and drawing, he considered himself sufficiently equipped for the practical work of his vocation. Returning to America, and selecting a small interior town where rents and living expenses were light, he set up an establishment of his own, as large as his limited means would allow.

To-day, he supplies the largest museums of the world with stuffed specimens from the elephant down to the smallest rodent, besides large quantities of minerals, rocks, fossils, casts of fossils, skins, and skeletons (unmounted) of animals of all classes, and often the wild animals themselves, alcoholic specimens, insects, crustaceans, shells, echinoderms, corals, sponges, and botanical specimens, from every quarter of the globe and in a great variety of form and price. Also anatomical preparations, chemical, philosophical and optical instruments, with Naturalists' supplies of every description, and, the Verraux Freres being now dead, he has established, as they did, stations upon every continent for the collection of natural history specimens. The attaches of all the stations are over 100 in number, many of whom are specialists.

At his American headquarters at Clearfield, Iowa, there are not far from 100,000 specimens of all classes. Besides mounting the skins sent in by his own collectors, this eminently successful taxidermist takes custom work in his department from those desiring the same, and many hundreds of persons and museums throughout the civilized world are constantly sending him mammal and bird skins and skeletons for restoration. Especially is this true of those scientific persons and wealthy individuals, who, while abroad, have shown prowess in the hunt.


But it is not alone in taxidermy that this cosmopolitan naturalist has won an unrivalled reputation. Years ago he devised a plan whereby even those of moderate means could possess a good cabinet. This, the installment plan, has from the start been a success, and in hundreds upon hundreds of cases has proven itself an inestimable boon to those of moderate means who desire a good collection. Many of the best collections in this country have been obtained entirely upon this plan and students, professional men, schools and colleges have all expressed themselves perfectly satisfied with its workings in their respective cases.

Prof. Winkley is strictly honest and reliable, and if any of our readers want anything in his line (see advertisement elsewhere,) we would recommend them to write to him.

---

This unsolicited editorial was written more than seven years ago. In the interim we have grown considerably, and to-day stand at the head of the museum furnishing business in the world. We are the only house outside of Paris, that sells collections on installments. Do you want to secure a good collection on easy terms? If so, write to us.

**W. H. WINKLEY, Clearfield, Iowa.**

 Persons having private collections that they wish to dispose of, would do well to send lists to us.

—A—

## FINE INDIAN —ARROW-HEAD

For only 10 Cents.

F. C. JOHNSON, Boonville, N. Y.

### THE WORLD OF NATURE.

A MONTHLY JOURNAL DEVOTED TO NATURAL History, Mineralogy, Archæology, Numismatics, Philately and Bric-a-Brac. Edited and published (the last week in each month) by S. JACOB, Naturalist, (late of N.Y. Aquarium and Eastbourne, Eng'and, etc.) NEWPORT, R. I., \$1 per year, 50c for 6 months, single copies 10c; (None free). First-class advertisements only solicited; 10c per line; \$1 per inch (12 lines).

## JOB PRINTING!

NOTE HEADS—Size  $5\frac{1}{2} \times 8\frac{1}{2}$ ; for 250, 80c; 500, \$1 50  
1000, \$2 50

ENVELOPES—Size 6, business size; for 250, \$1 25;  
500, \$2; 1000, \$3.

BUSINESS CARDS— $2\frac{1}{4} \times 3\frac{3}{8}$ ; for 250, \$1; 500, \$1 50;  
1000, \$2 50; extra 1000, \$1 50

#### CIRCULARS.

Size  $4\frac{1}{2} \times 6$ , not over 150 words; for 250, 75c; 500,  
\$1; 1000, \$1 50; extra 1000, \$1.

Size  $6 \times 9$ , not over 250 words; 250, \$1; 500, \$1 50;  
1000, \$2 00; extra 1000, \$1 25.

Size  $9 \times 12$ , not over 450 words; for 250, \$2; 500,  
\$2 50; 1000, \$3; extra 1000, \$1 75.

We use only the best quality of paper, and do first-class work. All printing delivered free of charge. Every description of Job and Commercial Printing done, and estimates cheerfully furnished

Address THE CHAMBERLAIN PRINTING CO.,  
284 Pavonia Ave, Jersey City, N. J.

### HAVE YOUR NAME PUT IN THE AMERICAN COLLECTOR'S DIRECTORY

It will cost you but 20 CENTS, which includes your name, address, copy of the Directory, branch of collecting, etc. It will also bring you hundreds of free sample copies of magazines, papers, etc. Don't wait but send at once. Write name plainly and state if you desire to correspond or exchange. W. H. PLANK, Publisher, Wyandotte, Kansas.

S. JACOB, NATURALIST,  
119 AND 121 BELLEVUE AVE., NEWPORT, R. I.  
—AND—  
2 CASINO BLOCK, NARRAGANSETT PIER, R. I.

Student's Aquarium (marine and fresh water); how to make and manage, by S. Jacob, with catalogue of curiosities, shells, bird's eggs, etc., on receipt of 10 cents.

### THE STRAWBERRY FOR THE SOUTH. HOFFMAN'S SEEDLING!

Most productive, large, of the best quality and UNEQUALLED FOR MARKET. I offer strong plants, in large and small quantities, at reasonable prices.

CATTLEY GUAVAS and JAPAN MEDLARS; all the finest ROSES, in good, healthy plants; forty varieties of DWARF ORANGE TREES, LEMONS, LIMES, Etc.

Address ARNOLD PUETZ,  
Greenland, Duval Co., Florida.

—THE—

## RECITER'S COMPANION!

Is the name of a Monthly Magazine devoted to Choice Subjects for every occasion. Contains many original articles and valuable instructions.

50 cts per year; 6 mos, 25 cts.

Sample for stamp; no postals answered.

THE RECITER'S COMPANION,  
Halifax, N. S.

**WHY** IS IT THAT THE SUBSCRIPTION List of the AGASSIZ COMPANION is so large? Because we give you a handsome 16 to 22-page magazine filled with choice original articles of Popular Science every month. Issued the 20th of each month. Established 1886. The largest, cheapest and best magazine of its class published. Only 50c a year. Sample copy 5c; none free. You can have your name inserted in our American Collectors Directory and THE COMPANION 1 year for 60c.

W. H. PLANK, Publisher, Wyandotte, Kansas.

## THE SCIENTIST!

A monthly magazine by the Fitchburg Agassiz Assembly. Should be in the hands of every

Agassiz member.

Price 50c a year; 5c a copy; none free. Advertising rates on application.

W. L. EMORY, Publisher, Fitchburg, Mass.

## PHOTO-ENGRAVING AND DESIGNING.

GOOD WORK AT LOWEST PRICES!

NEWSPAPER WORK A SPECIALTY!

Illustrations for all purposes. We are offering EXTRA LOW rates at present to advertise our business. Correspondence on the subject desired.

H. A. CARHART, Collamer, N. Y.

## LOOK! OH! LOOK!

500  $4 \times 7$  Circulars, by mail, 75c.

100 Letter Heads, 35c.

100 Envelopes, 30c

MIX BROTHERS, BUTLER, OHIO.

P. S.—Special rates on larger orders.

## COLLECTORS!

Large stock in Mammals (skins, skeletons and skulls), Bird Skins and Eggs, Amphibia, Myriapods, Crustacea, Echinoderma, Insects, Fossils, Shells (marine, land, fresh water), etc., etc., from various trans-oceanic countries, especially "The Ancient World."

"Linnæa" Institution for Natural History,

BERLIN, GERMANY.

Our Agent in the U. S. A.:

**HERMANN ROLLE,**

33 Ave. A, New York City

Will send Catalogues on application.

SHELLS, MINERALS AND FOSSILS, SEEDS, Bulbs and Plants. C. R. ORCUTT, San Diego, California.

# JOSEPH GILLOTT'S

## Steel Pens

FOR ARTISTIC USE in fine drawing,  
Nos. 659 (Crowquill), 290 and 291.

FOR FINE WRITING,  
Nos. 303 and Ladies', 170.

FOR BROAD WRITING,  
Nos. 294, 389 and Stub Point, 849.

FOR GENERAL WRITING,  
Nos. 332, 404, 390 and 604.

Joseph Gillott & Sons, 91 John St., N. Y.  
HENRY HOE, SOLE AGENT,  
Sold by ALL DEALERS throughout the World.  
Gold Medal Paris Exposition, 1878.

A. WENTSCHER,  
GENERAL COMMISSION  
FORWARDING AND SHIPPING.  
San Diego, Cal.

**ARE YOU FOND OF USING TOOLS OR**  
Tinkering? If So send One Dollar for THE  
UNIVERSAL TINKER AND AMATEUR'S ASSIST-  
ANT. Tells Amateurs about turning and lathe work,  
Painting, Staining, Book Binding, French Polishing,  
Wood Finishing, Fretwork, Amateur Printing, the  
Magic Lantern, etc. Single copies 10 cts. Address  
HODGSON & BARWOOD, 294 Broadway, New  
York, N. Y.

**IT WILL PLEASE** YOUR  
or girl and your neighbor's boy or girl to receive a  
paper "all their own." Try sending them the

**YOUNG IDEA**

The best low-priced juvenile magazine published; 12  
pages, 36 columns, monthly, illustrated, only 50 cts.  
a year; sample free. Address THE YOUNG IDEA,  
Grant C. Whitney, publisher, Belvidere, Ill.



**\$85 solid GOLD WATCH**  
Sold for \$100 un-  
til lately. Best \$85  
watch in the world. Per-  
fect time-  
keeper. Warranted. Heavy  
Solid Gold Hunting Cases.  
Elegant and magnificent.  
Both ladies' and gents' sizes  
with works and cases of  
equal value. **ONE PERSON**  
in each locality can secure one  
**FREE**. How is this possible?  
We answer—we want one per-  
son in each locality, to keep in

FREE

their homes, and show to those who call, a complete line of our  
valuable and very useful **HOUSEHOLD SAMPLES**.  
These samples, as well as the watch, we send free, and after you  
have kept them in your home for 2 months and shown them  
to those who may have called, they become your own property;  
it is possible to make this great offer, sending the **SOLID**  
**GOLD** watch and **COSTLY** samples free, as the showing of  
the samples in any locality, always results in a large trade for  
us; after our samples have been in a locality for a month or two  
we usually get from **\$1000 to \$5000** in trade from the  
surrounding country. This, the most wonderful offer ever  
known, is made in order that our samples may be placed at once  
where they can be seen, all over America. Write at once, and  
make sure of the chance. Reader it will be hardly any trouble  
for you to show the samples to those who may call at your home  
and your reward will be most satisfactory. A postal card on  
which to write us costs but 1 cent and after you know all, if you  
do not care to go further, why no harm is done. But if you do  
send your address at once, you can secure **FREE** one of the  
best solid gold watches in the world and our large line of  
**COSTLY SAMPLES**. We pay all express, freight, etc.  
Address **GEO. STINSON & CO., Box 612, PORTLAND, MAINE**

# Consolidated National Bank.

**CAPITAL PAID IN, - \$250,000.**  
**SURPLUS FUND, - - - 50,000.**  
**Undivided Profits - - - 75,961**

BRYANT HOWARD, - - - - President.  
E. W. MORSE, - - - - Vice-President.  
JOHN GINTY, - - - - Cashier.  
W. H. CLARKE, - - - - Assistant Cashier.

—DIRECTORS.—

Hiram Mabury, O. S. Witherby, John Ginty,  
E. W. Morse, James McCoy,  
S. Levi, Bryant Howard.

Exchange on all the Principal Cities of America  
and Europe bought and sold.

# The Savings Bank.

OF SAN DIEGO COUNTY.

In the Consolidated Bank Building, corner of Hand  
1 fifth streets.

**CAPITAL, - - - - \$100,000.**

: : OFFICERS : :  
James M. Pierce, - - - - President.  
Geo. A. Cowles, - - - - Vice-President.  
John Ginty, - - - - Secretary and Treasurer.

: : DIRECTORS : :  
O. S. Witherby, H. Mabury, E. W. Morse,  
Geo. A. Cowles, James M. Pierce,  
James McCoy, Bryant Howard,

Interest Allowed on Deposits. Money  
Loaned on Real Estate

Every Student of Nature should Sub-  
scribe for

## 'THE SWISS CROSS'

Organ of the Agassiz Association; Edited by the  
president, Harlan H. Ballard. Beautifully illustrated,  
simple, popular in style, reliable and accurate.

**\$1.50 a Year. Issued Monthly.**

With this magazine, \$2.00 a year.

Address, **WEST AMERICAN SCIENTIST,**  
San Diego, California.

## CHANCES TO SWAP.

Notices inserted under this head for five cents  
per line for each insertion; fifty cents per line  
charged by the year. Only exchange notices ac-  
cepted.

What have you to exchange for a rem-  
edy that will cure Catarrh and Hayfever?  
Address, **Mr. E. E. YATES,**  
Sharon, Wis.

Books wanted by the editor.

**NOTES ON MOLLUSKS** OF THE VICINITY  
of San Diego, Cal.,  
and Todos Santos Bay, Lower California, by C. R.  
ORCUTT, with comments by W. H. DALL. With  
plate. Price, 25 cents C. R. ORCUTT, San Diego, Cal.



