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# The West-American Scientist.

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No. 5.

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## NOTES ON CHORIZANTHE LASTARRIEA, PARRY.

BY C. C. PARRY.

In a recent examination of the early collections of *Chorizantho* etc., in the old world herbaria, some facts of general botanical interest were brought to view; most important of all being the types of Bentham's original descriptions in establishing the sub-order *Eriogoneæ*. Among these I was particularly interested in tracing up the botanical history of *Chorizantho*, *Lastarriaea*, Parry (*Lastarriaea Chilensis*, Gay). Owing to the inconspicuous characters of this otherwise well marked species, in the older herbarium specimens, it was frequently inadvertently mixed with other species, and when properly separated had received several unpublished generic names, being variously referred to *Paronychiaceæ*, *Ilecebraceæ*, or *Eriogoneæ*.

It was, however, fairly represented by authentic specimens in all the early collections from Chili, South America, as far back as 1830, and by both Coulter and Nuttall, from Southern California, 1832-36.

By Nuttall, whose complete specimens were collected at Santa Barbara in 1836, its diagnostic botanical characters were clearly determined, though not referred

to any natural order. In his specimens at the British Museum, the accompanying label marked with his usual \* indicating a new genus, the following brief description is given, (the original contracted Latin being translated), viz:

"\* *Ancistrophyllum Californicum*. Annual; leaves 5, verticillate; stem jointed, fragile; flowers sessile, dichotomous, calyx prismatic, 5 cleft, uncinatè, corolla none; stamens 2 - 3 ? ovary slender 3 angled, stigmata none. Santa Barbara, Upper California."

With still another Nuttallian specimen (probably on cursory examination) is the following label, viz:

"\* *Corrispermum spinulosum*."

In other fragmentary Nuttallian specimens in the Kew Herbarium, this species is mixed on the same sheet with *Chorizantho uncinata* Nutt., and so referred in Bentham's hand writing, followed also by Prof. Gray on another mixed sheet. In South American specimens in the Kew Herbarium, there is a similar confusion in the older collections, the following label accompanying one of the oldest, viz:

"50 Poppig, Pl. Chil.

*Hamaria Poppigii*, Ky. (ined).  
Synop. Pl. Am. Aust. Misc. Nov. gen. e familia *Paronychiaceæ*? in arenosis Montes, Aug. florens."

On still another Chilean speci-

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men the accompanying label is the following, viz.:

"No. 228 Gulieimin, 1830,

Gen. Nov. *Donatia?* Ex. Gay."

Even as late as D. C. Prodronus, this plant is included among the "Dubie" at the close of *Eriogonææ*. The natural inference from the above ascertained facts is that the obscure characters, and imperfect knowledge of this species, up to a late date prevented a clear understanding of its true systematic relations. With the publication of Gay's *Fl. Chilensis*, in which this plant is figured, and fully described under the name of *Lastarriaa Chilensis*, Gay, and the subsequent elaboration of Prof. Gray, and Bentham, its true place in the natural system is clearly determined.

In venturing to differ from the last named authorities as to its generic character, in referring it to a reduced form of *Chorizanthe* (*Proceed. Dav. Acad. Science*, Vol. IV., page 47). I was forced to this view in an endeavor to systematize all the material in reference to this genus, accumulated by extensive field observation, and access to all the available collections and descriptive works.

The main point of difference lies in the view taken of the floral organs, and as to whether the involucre appendage, or the perianth, is obsolete in this particular species. Noting, then, the marked persistence of the involucre character; on which, in fact, Bentham mainly relied in establishing the sub-order *Eriogonææ*; and seeing no good and sufficient reason why the organ in this species, which

occupies the position and has all the morphological characters of a *Chorizanthoid* involucre, was not such in fact. An explanation was sought for the apparent absence of the internal perianth by referring it to a reduced form, as a lobed ring in the throat of the involucre, its lower part being adnate to the tube in a similar way, as the staminal whorl is not unfrequently adherent to the perianth, being carried on its inner face as an obscure thread, as well as occasionally reduced in number, from nine, to six, or three. What very materially helps to sustain this view, is the modification which the perianth is plainly seen to undergo in a regular series of reduction, being traceable from several flowers to each involucre, pedicellate and partly exsert, as in *Centrostegia* section, gradually reduced to single flowers by partial or entire obsolescence of the secondary ones, and still farther in *Euchorizanthæ* section, becoming nearly or quite sessile and strictly uniflorous, showing also a more or less adnation of the stamens to the tube of the perianth, thus as it were foreshadowing what we actually find in *Chorizanthæ Lastarriaæ*, viz: a blending of the perianth with the involucre tube. As serving still farther to confirm this view, it is possible by careful dissection of well macerated young specimens to detach the adherent ring, extending as a membranous expansion lining the involucre tube just as in the analogous case of adherent stamens, the filament can frequently be separated as a continuous thread to the base of the perianth.

Granting then what is unavoidable, the liability to modification of the Chorizanthoid perianth in the way of reduction and partial obsolescence, coupled with the remarkable persistence of the involueral characters, and the above view removes at once the anomalous features of the species, and fulfills all the desirable systematic conditions.

On the other hand, the previously received view involves much more serious and insuperable difficulties, placing this otherwise well characterized plant entirely out of analogy with all other allied Eriogonous genera in the entire absence of an involucre, either in the usual form of a segmented whorl or as a simple bracteate floral appendage; assuming moreover that a perianth which in all other allied species has certain fixed characteristics, only subject to reduced modification of parts, but never of structure, can take the puzzling form of an ordinary involucre!

When such irreconcilable facts are once fairly placed by the side of a more natural and simple explanation, the question of choice cannot long remain doubtful.

Kew, England, November, 1884.

The Bulletin of the California Academy of Sciences, No. 3, February, 1885, has been received and contains much of botanical interest from the pens of Rev. E. L. Greene, Mrs. Mary K. Curran, and H. W. Harkness, the latter on fungi. H. H. Behr contributes to the literature on lepidoptera in descriptions of new species, etc.

#### CONTEMPORARY JOURNALS.

The American Monthly Microscopical Journal, Romyn Hitchcock, editor and publisher, Washington, D. C., \$1 per year. With this well established periodical and the journal of the New York Microscopical Society, the microscopist can keep well posted on the news in the various departments.

Mind in Nature, a popular monthly journal of psychical, medical and scientific information, is announced to be published the first of every month, by the Cosmic Publishing Company of Chicago, at \$1 per year. Its object is to furnish, in a popular manner, information regarding psychical questions, the relations of mind to the body, etc.

The Mining Review of Chicago, is the leading mining journal of the United States, published weekly at \$3 per year.

Prof. W. G. Farlow delivered a very interesting popular lecture on marine algæ, under the auspices of the San Diego Society of Natural History, the evening of March 26.

Mr. Joseph Surr, recently of London, gave the fifth lecture of the course under the same auspices, to a large audience, the evening of March 30, on "A Walk in London."

This paper is usually issued on or near the fifteenth of each month.

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SAN DIEGO, CAL., APRIL, 1885.

### EDITORIAL NOTES.

We have adopted the rule of not italicizing scientific names, a custom of no real value, and of many disadvantages.

We would repeat that we wish to make this journal the representative of the naturalists of western America, and we thank those who have given us their prompt support. The Pacific coast is poor in active workers, and the few are scattered over a wide, undeveloped field, rich in the beauties of Nature. By co-operation the great work before them can be best performed.

It is going the rounds of newspapers that California ostrich eggs are only \$120 per dozen; we may add that chickens are held at \$50 and hens at \$1,000 each, while the eggs are equal to two dozen common hen's eggs and weigh about three pounds apiece.

The SCIENTIST is mailed between the fifteenth and twentieth of each month.

### DISTINGUISHED BOTANISTS IN CALIFORNIA.

Dr. Asa Gray, and Professor W. G. Farlow, the distinguished scientists of Harvard College, who are at present visiting Southern California, were tendered a reception by the Historical Society of Southern California at Los Angeles on the evening of March 16. Each of the distinguished guests responded to the Society's greeting in an appropriate speech, and from Dr. Gray's, we quote the following paragraph:

"That we have enjoyed your scenery, your climate and your hospitality, goes without saying. But beyond that, we have had the pleasure—peculiar to botanists—of meeting old friends, seen before, only in altered guise—your flowers, many of which were before familiar to us only in their dried form. These beautiful flowers of Southern California turn up their bright eyes to me as I pass, and say: 'Don't you know us?' And I look down at this one for a moment and say: 'Oh, yes, you're so and so. Menke discovered you;' or to that one, 'Yes, your name is such and such. You were wrongly christened, and had to re-name you;' or to a third, 'Yes, I know you—you are one of my own children, classified and named by myself ten or twenty or forty years ago, or perhaps only yesterday.' And there is the further pleasure of meeting among you some of the correspondents whose work has been so valuable to me—as Messrs. Nevin, Lyon and Oliver. There are, too, the

Parishes, of San Bernardino, who have done a remarkably extensive work. It is to all these gentlemen that your Society may look to build up its natural history side. I trust they will prepare for the society a full herbarium of Southern California flowers. I hope and anticipate that your society will do much for science."

The address of Professor Farlow was of a more scientific nature treating of the diseases of fruit trees caused by fungi.

Dr. Gray, who is accompanied by his wife, and Professor Farlow, made a short stay at San Diego, returning north and visiting Santa Barbara and other places of interest in Southern California.

#### GENERAL NOTES.

Rev. E. L. Greene is en route to Guadaloupe and Cerros Islands on a botanical survey of those places.

Dr. Asa Gray and wife, with Professor Farlow, made but a short stay at San Diego, leaving for Santa Barbara and San Francisco. They will probably return to the east in May.

The publisher of this paper, in company with the editor, and several others, is absent on another botanical expedition into the Californian peninsula.

A pearl weighing 93 carats and valued at \$17,000 has just been shipped from Guaymas, Mexico, for London. It was bought of an Indian for \$90, and is believed to be the largest in existence.—Canadian Science Monthly.

#### THE GEODE.

MRS. Z. R. CRONYN

Before me lies a tiny crystal palace,  
With doors forever closed, if so I choose,  
As fair within as any lily's chalice  
Where night has dropped its offering of dew's

No footstep ever echoed through its arches,  
No voice has rung through chamber or recess  
The centuries have passed in long, slow  
marches,  
And still this palace home is tenantless.

Ah! once the little fairies reveled gaily  
On this old earth of ours, but now no more!  
Man's strange devices tear and ruin daily  
The play-ground where the elvies trooped  
before.

Or else I might be sure some tiny creature,  
Beleaguered here, had walled herself within  
Where enemy nor element could reach her,  
Self-separated from accusing kin.

Perhaps—who knows? perhaps some prisoned spirit,  
Caught fast in one convulsive grasp of fate,  
So still, that if we list we cannot hear it,  
Has waited, through the ages, at the gate.

Then, shadow of unbound Prometheus,  
hover,  
Above me as I break these prison bars!  
And so—I break, and kneel as any lover  
Beside these wondrous concaves full of  
stars.

Fair pillars are there, chastely hewn and  
beveled,  
And colonnades aglitter in the light  
And pavements, not like man's—all square  
and leveled  
But rugged with a thousand jewels bright.

A fitful iridescence quivers faintly  
About the corridors and columns small  
And lo, in this recess so white, so saintly,  
I find the crucifix upon the wall.

**SOCIETIES.**

The regular semi-monthly meeting of the San Francisco Microscopical Society, was held at the Society's rooms, No. 120 Sutter St., on Wednesday evening, March 11, 1885. Sundry scientific periodicals were added to the files.

Dr. Selfridge exhibited an interesting specimen of supposed meteoric origin. Its surface and outlines were more regular than is usually the case with meteorites, but it possessed one characteristic of those interesting bodies in a remarkable degree, viz: extreme hardness.

Dr. S. M. Mouser then exhibited his newly acquired microtome or Section Cutter, of the celebrated "Thoma" pattern. It is exceedingly elaborate in construction, but consists essentially of a frame of cast iron, on which slide two carriers. A large and finely finished knife is clamped to one of these, which slides on a horizontal plane. The second carrier (which holds the specimen to be cut) moves on an inclined surface.

Professor Thoma has based the construction of this microtome upon the principle (first theoretically deduced, and then practically demonstrated) that a body sliding between two inclined planes and touching the latter at five points only, will slide evenly and exactly over such planes even if they be not geometrically true. A knife attached to such a carrier will, therefore, always cut perfectly parallel sections of an object which is elevated after each cut. As a practical exemplification of the perfection with which

the above principle has been worked out in the Thoma microtome, it may be stated that it permits the cutting of serial sections of well hardened animal tissues of certain kinds, as thin as .002 mm. (.00008 in.), and even such a comparatively coarse tissue as liver can, if well hardened, be cut to .01 mm. (.0004 in.) The ability to produce sections of such wonderful delicacy has given a great impetus to histological and pathological research of late.

Mr. Breckenfeld exhibited a "Graduated Blue Glass Modifier" which has just been brought out by the Bausch and Lomb Optical Company.

At the meeting of March 25, 1885, a valuable donation was received from Lieutenant Thos. L. Casey, U. S. A., consisting of three volumes of his "Contributions to Coleopterology," just published.

D. J. N. Stallard of this city was nominated for resident membership.

On the announcement that a new and much enlarged edition of Habirshaw's rare and valuable "Catalogue of the Diatomaceæ" was about to be published, it was unanimously resolved to order a copy for the Society's library.

A very interesting demonstration of the capabilities of a new ophthalmoscope was given by its inventor, Mr. Louis A. Berteling.

He also exhibited the "Professional" microscope, manufactured by the Bausch & Lomb Optical Co., and being the most elaborate form made by it. Nearly all the revolving parts are furnished with



silvered graduations, the stage and sub-stage are provided with improved centring adjustments, and its design is evidently the result of a successful attempt to produce an instrument fully equal to the highest class of microscopical work.

Dr. C. P. Bates exhibited an ingenious and efficient "warm stage," for use in the study of "pure cultures" of Bacteria and similar minute organisms.

After an interesting informal discussion on the merits of the various exhibits, the meeting adjourned.

Tetracoccus disicus, Parry, unfortunately secures the luxury of a synonym in Professor Watson's T. Engelmanni, published only a few days later in contributions to American botany, XII, Proc. Am. Acad., Vol. XX.

G. W. Lichtenthaler, who has recently visited the Sandwich Islands, spent some time collecting at San Diego on his return to Bloomington, Ill.

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