

IDENTIFICATION OF
"an herbe much like our lectuce...."

A RESEARCH REPORT OF THE DRAKE NAVIGATORS GUILD

by
Robert W. Allen

Copyright by
Drake Navigators Guild
Point Reyes
California

1971

ACKNOWLEDGEMENTS

The Drake Navigators Guild is deeply indebted to the careful disciplines of botanists, past and present. The wholehearted assistance of the Botany Department of the University of California at Davis and the California Academy of Sciences is greatly appreciated. The willingness of Dr. Ledyard Stebbins, Dr. John Tucker and Mr. John Thomas Howell to assist in this research, despite heavy workloads and other demands on their time, is a reflection of ardent spirit of helpfulness and scholarly inquiry.

The library facilities of the University of California at Berkeley, along with the research assistance of Robert W. Parkinson, Guild Secretary, and criticism by other Guild members were also of great assistance in the production of this study.

TABLE OF CONTENTS

	Page
I. Statement of Problem	1
II. Listing of the Details	1
III. Examination of the Reported Facts	2
IV. Discussion	10
V. Conclusion	12
Appendix A. Sowerby illustrations of wild lettuce	
B. Herbarium specimens of <u>Lactuca ser-</u> <u>iola</u> and <u>Rafinesquia californica</u>	
C. Photo micrograph of pappus of <u>Rafinesquia</u> <u>californica</u>	

Bibliography

IDENTIFICATION OF
"an herbe much like our lectuce...."

I. Statement of Problem

The World Encompassed¹ repeatedly refers to an herb found at Nova Albion of a type familiar to members of Drake's party: "...an herbe much like our lectuce...." World Encompassed is the only known account contemporary with Drake to mention this herb and to date the herb has never been properly identified.

The subject of this paper is comprehensive examination of available evidence to identify this herb.

II. Listing of the Details

The following facts pertaining to the plant are found in World Encompassed:

A. The plant is an herb.

1. Sir Francis Drake, Bart., comp., The World Encompassed by Sir Francis Drake, 1628. Reprinted in N.M. Penzer, ed., The World Encompassed and Analogous Documents.

- B. The herb grows up in the country (inland).
- C. It was seen about July 18th (old style).
- D. The herb was similar to a lettuce of England.
- E. The herb produced a very fine down.
- F. This down was used by the inhabitants of Nova Albion in making the headdress of persons of high rank.
- G. The down could not be blown from the net caps by wind.
- H. The down was kept in bowl-shaped baskets.
- I. The down was carried by women.
- J. The down was carried to Drake's camp along with other ceremonial materials at the first visit of the king.
- K. The down was carried to Drake's camp along with foodstuffs at the first visit of the king.
- L. Seeds of the herb were carried along with foodstuffs at the first visit of the king.
- M. The seeds were carried in bowl-shaped baskets.
- N. The seeds were carried along with Tobah, Petah, and other stuffs.
- O. The seeds were carried by women.

Each of the above facts are specific statements from the account and each must be examined before arriving at a judgment.

III. Examination of the Reported Facts

A. The plant is an herb. The term "herbe" was applied during Elizabethan times to a plant "of which the leaves, or stem and leaves, are used for food or medicine, or their

scent or flavor."²

B. The herb grows up in the country (inland). World Encompassed states "which groweth up in the countrey" This phrase refers to the area covered by Drake's exploration inland from the coast; the chronicler notes: "The inland we found to be farre different from the shoare, a goodly country and fruitfull soyle, stored with many blessings fit for the use of man...." The very presence of the herb inland supports this statement of contrast.

C. It was seen about July 18th (old style).

This would be about July 29th on the current calendar.

D. The herb was similar to a lettuce of England.

World Encompassed states that it was "much like our lectuce" Wild lettuces of England, as listed by Clapham, Tutin and Warburg, include Lactuca sativa L., L. serriola (L. scariola L.), L. virosa L., and L. saligna L.³ Martin and Fraser also include L. muralis L.⁴ Lactuca saligna and L. muralis are considered by Martin and Fraser as local species. During Drake's time, Lactuca sativa, the stock of the headed garden lettuce, was not an indigenous wild lettuce

2. The Oxford Universal Dictionary on Historical Principles, third edition, p. 892.

3. A.R. Clapham, T.G. Tutin and E.F. Warburg, Flora of the British Isles, pp. 1125-1127.

4. W. Keble Martin and Gordon T. Fraser, Flora of Devon, p. 436.

of England, for, according to Sudell⁵ and Loudon,⁶ headed garden lettuce was introduced to England from the Continent during the reign of Queen Elizabeth. Edlin states that "the main stock of the cultivated lettuce is Lactuca scariola var. sativa, a native of Southern Europe."⁷ Loudon places the date of introduction as 1562. This domesticated lettuce escaped sometime after its introduction to England and adapted itself so well that it was later identified as a native wild lettuce. There is little likelihood of Lactuca sativa being common enough in 1579 to be familiarly referred to at that time as "our lectuce."

Webster's Unabridged Dictionary states that Prickly Lettuce (L. serriola) is the common wild lettuce of Europe.⁸ Smith says that scariola (serriola) is generally restricted in England to the country about Cambridge and Ely;⁹ he gives no limits to the range of virosa.¹⁰ The New English Dictionary cites a 1400 reference stating: "Wylde letus hat feldmen clepin skarioles," (Farmers called wild lettuce scariola.)

5. Richard Sudell, The New Illustrated Gardening Encyclopedia, p. 528.

6. J.C. Loudon, An Encyclopedia of Gardening..., third edition, p. 654, no. 3964.

7. H.L. Edlin, British Plants and Their Uses, p. 49.

8. Webster's Third New International Dictionary of the English Language, Unabridged, p. 1799.

9. James E. Smith, illus. by James Sowerby, English Botany, vol. 28, p. 268.

10. Ibid., p. 1957.

thereby giving evidence of antiquity to this plant. It also defines Wild Lettuce as "some plant of this genus growing wild; spec. in England - L. Scariola and L. virosa."¹¹ The Nova Albion plant "much like our lectuce...." resembled either L. serriola or L. virosa. Both plants are tall, slender stemmed, (generally over 3 feet high at maturity), exude a white, milky juice, and have a characteristic pinatifid leaf form similar to Common Dandelion. L. serriola has a generally prickly characteristic, whereas L. virosa is prickly only along the main rib of the leaf and its leaves are more finely toothed.¹² Smith states that L. virosa is the more common, is the milder tasting, and is "the largest of our wild lettuces"¹³ The New English Dictionary cites a 1633 reference from Johnson, Gerarde's Herbal II. xxxviii. 309 mentioning "The greater wilde Lettuce smelling of Opium." indicating knowledge of a distinction between the wild lettuces of England at that early date. Both lettuces produce small, flowering heads with pale, yellow ray flowers, and pointed, beak achenes bearing copious, short, fugacious, pappus which is very soft in L. serriola and somewhat coarser in L. virosa, according to Smith.¹⁴

11. A New English Dictionary on Historical Principles, vol. VI, L-M, p. 221.

12. See appendix for Sowerby illustrations.

13. Smith, loc. cit.

14. Smith, op. cit., pp. 268, 1957.

The young, tender leaves of both plants were used in Elizabethan times for food and medicine. The New English Dictionary cites a 1533 reference: "Breade steped in white brothe, with sodden lettise, or cykorie, and good to be used." It also cites a 1566 reference: "When the young lactuse begin to growe, I cutte of the bitter and sower stalkes from them." This last indicates, perhaps, cultivation of the wild lettuce for food or medicine, or maybe the instructions of an herbalist on the preparation of the herb.

The statement that the herb of Nova Albion was "much like our lectuce...." is a very positive statement of similarity. It was not just somewhat like, but much like.

E. The herb produced a very fine down. No condition of color, size, or shape is given beyond the general similarity of the plant to "our lectuce", which would infer that the down may be similar to that of lettuce. The down was spoken of in World Encompassed as being so fine that it "exceeds any other downe in the world for fineness."

F. This down was used by the inhabitants of Nova Albion in making the headdress of persons of high rank. According to Heizer, net caps were used ceremonially among the Coast Miwok Indians to contain bird down against the wearer's head, or to provide a base for supporting feathers.¹⁵ Kroeber also

15. Robert F. Heizer, Francis Drake and the California Indians, 1579, pp. 268-269.

mentions down so used among the Miwoks, but does not specify whether bird or plant down.¹⁶ World Encompassed states: "Of such estimation is this herbe amongst them, that the downe thereof is not lawfull to be worne, but of such persons as are about the king (to whom it is permitted to weare a plume of feathers on their heads, in signe of honour)...."

G. The down could not be blown from the net caps by wind. The down must have been observed under particularly windy conditions to occasion this observation. World Encompassed stated that the down "being layed vpon their cawles by now winds can be removed." This suggests a tenacity of the down beyond simple felting under a net containment.

H. The down was kept in bowl-shaped baskets. The incurving upper portion of a bowl-shaped basket could certainly contain a fine down better than a straight-sided or outward flaring basket. The tenacity of the down to itself may have helped keep the down in the basket--even in a high wind. As the English were able to observe the down in the baskets, the baskets could well have been open baskets without lids. World Encompassed states:

Their traine or last part of their company consisted of women and children, each woman bearing against her breast a round basket or two, hauing within them diuers things, as bagges of Tobah, a roote which they call Petah, whereof

16. A.L. Kroeber, Handbook of the Indians of California, pp. 268-269.

they make a kind of meale, and either bake it into bread, or eate it raw, broyled fishes like a pilchard; the seed and downe aforesaid, with such like.

Their baskets were made in fashion like a deepe boale,

The following statements are based on the above quotation.

I. The down was carried by women. The men were left free to conduct the ceremonials involving use of the down.

J. The down was carried to Drake's camp along with other ceremonial materials at the first visit of the king. The importance of this first high contact would indicate that all ceremonial materials which might be needed should be on hand--including the down.

K. The down was carried to Drake's camp along with foodstuffs at the first visit of the king. As food is basic sustenance, and the down had ceremonial use, it could be assumed that the food, too, may have had ceremonial use at this time.

L. Seeds of the herb were carried along with foodstuffs at the first visit of the king. It is stated that these seeds were used solely for sacrifice (burning). This could indicate the English may have expected that the seeds might have had some other use, such as food, and felt the singular use was worthy of recording. No seed size is given.

M. The seeds were carried in bowl-shaped baskets. These baskets, used not only for the seeds, but for Tobah, down and food, were not for everyday use. They were the finely ornamented ones for ceremonial occasions. The English were im-

pressed by the superior crafting and recognized their ceremonial purpose: "...that they were vessels wholly dedicated to the onely vse of the gods they worshipped." Anything carried in those baskets was for a very special purpose.

N. These seeds were carried along with Tobah, Petah, and other stuffs. All articles and foodstuffs carried in the special baskets had to do with a highly ceremonial occasion.

O. The seeds were carried by women. As in item I, the men were to be left free to conduct the ceremonials. It is a general pattern among the California Indians that the conduct of really important ceremonials was the men's province.

The following clues given in the accounts provide a general description of the herb.

A. It has collectable seeds and down.

B. The seeds and down were used ceremonially by the Coast Miwok Indians.

C. The plant could be found inland from Drakes Bay during late July.

D. The down was very fine and tenacious.

E. The plant bears strong resemblance to Lactuca serriola or L. virosa of Elizabethan England including the following characteristics:

1. A white sap exudes when the plant is broken.
2. It has a single stalk, not widely branched.
3. The leaves are similar to those of a dandelion.
4. It produces an achene and fine pappus.

5. It has a pale yellow, small flower.
6. It is herbacious.
7. The main body of the plant is colored green.
8. It may have prickles on its stalk or leaves.
9. It can be at least 3 feet high.
10. It is prevalent.

IV. DISCUSSION

Travelling inland from Drake's camp at the mouth of Drakes Estero, one crosses Inverness Ridge to descend into the verdant Olema Valley at the head of Tomales Bay. Numerous herbs are found in this moist valley that are not found on the windy, exposed, downs around Drake's camp. Of these indigenous plants two adequately meet the criteria of the account: Rafinesquia californica Nutt. and Stephanomeria virgata Nutt.; both of which are very similar botanically to the two wild lttuces of England.¹⁷ In general they differ from the latter in not being spinose, and their somewhat larger flowers are not yellow.

Members of Drake's party saw the "herbe much like our lectuce...." during their inland journey. This trip was undertaken near the end of Drake's stay after the ship had been readied for departure. Drake left Nova Albion on the morning of August 3rd (July 23rd, old style) and Rafinesquia californica would have matured during Drake's stay in Nova Albion. Munz lists the plant as occurring from April through July and the

17. See appendix for comparative illustrations of Lactuca serriola and Rafinesquia californica taken from herbarium specimens.

maturity of Stephanomeria virgata is listed as occurring from July through October.¹⁸ Because of its earlier flowering, Rafinesquia californica is the likely plant, though naturally there are exceptions overlapping to such firm scheduling. Rafinesquia californica not only produces copious, fine, and very soft pappi, but this pappus has a particular characteristic not shared by either of the English wild lettuces; it is plumose, not capillary,¹⁹ and these pinnae cause this down to be particularly tenacious to itself, even as the pinnae of eagle down. The down of this plant would work excellently into the net caps of the Coast Miwok Indians.

An Indian basket full of Rafinesquia californica down would feel very soft indeed to any one putting his hands into it, as would a basket full of Lactuca serriola down. But how many Englishmen would have had such an experience in England? It is not likely that any of Drake's party was aware of the feel of a mass of lettuce down. Certainly they were impressed enough to say that the down from Nova Albion "exceeds any other downe in the world for fineness." Whether fineness referred to physical condition, or to suiting a purpose, is not clear; Elizabethan usage admits both.

There is a suspect herb, Lactuca biennis, which, according to Howell, and based on information provided by Alice Eastwood, former Curator of Botany at the California Academy

18. Philip A. Munz, A California Flora, p. 1297.

19. See appendix for comparative micrograph.

of Sciences was once collected over a half-century ago in Bear Valley (branching off the Olema Valley), with this being the southernmost station ever found for it in the Coast Range Mountains of California.²⁰ According to Munz, L. biennis is rare in the area.²¹ Its occurrence is too slight for it to be considered against the more prolific contestants.

Two other plants possessing longer and possibly finer down than Rafinesquia californica occur within the area: the Great Willow Herbs, Epilobium Watsonii Barbey var. franciscanum (Barbey) Jeps. and Epilobium adenocaulon Hausskn. var. occidentale Trel., but like the Milkweeds, Asclepias fascicularis Decne., and A. speciosa Torr., which would not be mature at the time of Drake's visit and grow farther to the east, the lanceolate leaves, fruiting pods, and general aspects of these herbs are so radically different from "our lectuce...." that they cannot be seriously considered in any way but for their soft down.

V. Conclusion

Based on presently available evidence, the Drake Navigators Guild identifies Rafinesquia californica as the plant mentioned in World Encompassed as "an herbe much like our lectuce...."

20. John T. Howell, Marin Flora, p. 292.

21. Munz, op. cit., p. 1304.



LACTUCA Scariola

Prickly Lettuce

Illustrated by James Sowerby
in English Botany, 1795.



Courtesy of the University of California

Lactuca virosa L.



Botany Department
College of Agriculture

5471
Davis, California

HERBARIUM, UNIVERSITY OF CALIFORNIA
COLLEGE OF AGRICULTURE, DAVIS, CALIFORNIA
Rafinesquia californica Nutt.

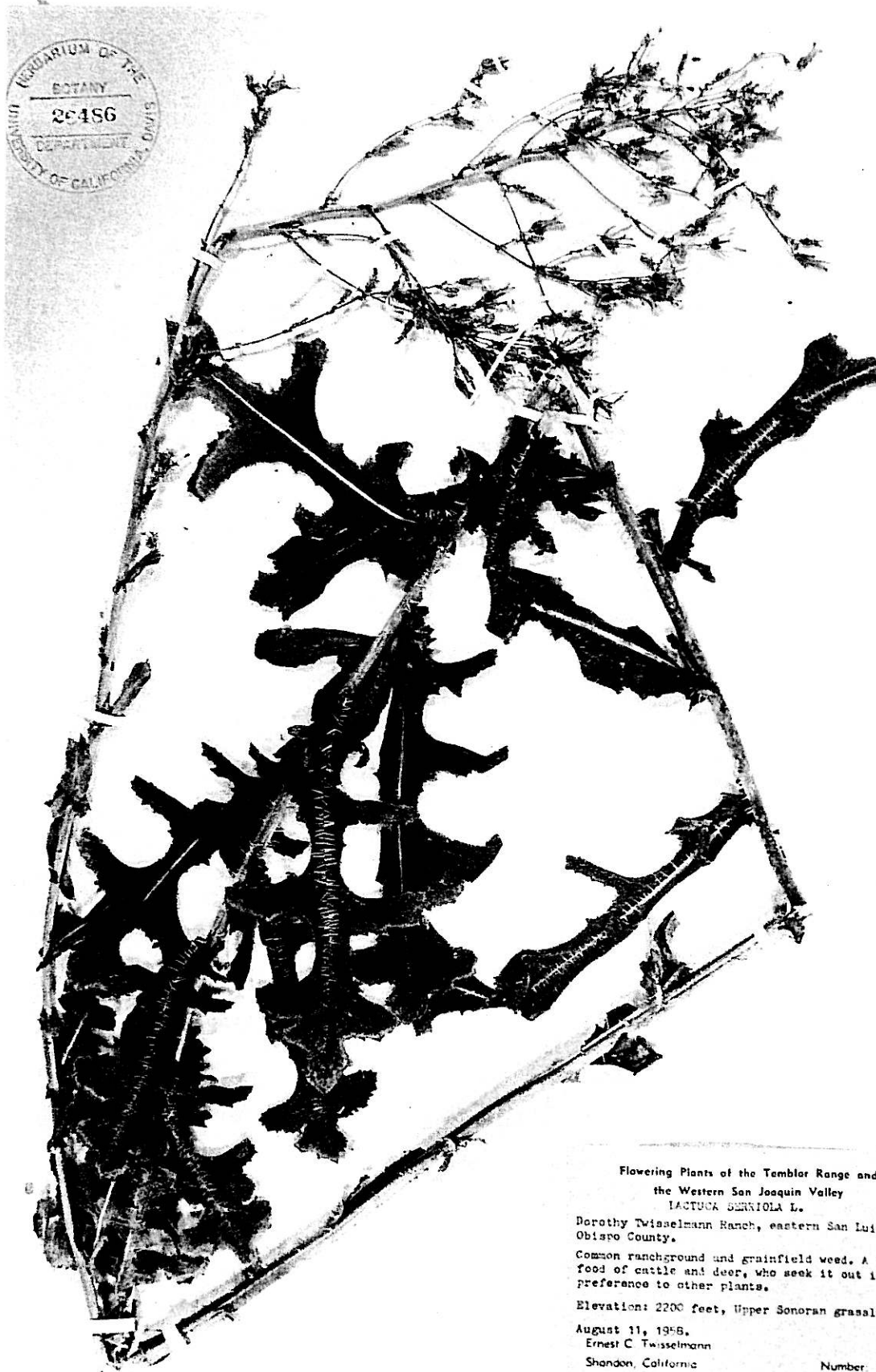
Kern River Canyon, approx. 7 miles
below Hobo Hot Springs,
Kern County, California.

J. D. Skoss

May 7, 1948

Courtesy of Univ. of Calif. Botany Department

Rafinesquia californica Nutt.



HERBARIUM OF THE
UNIVERSITY OF CALIFORNIA, DAVIS
BOTANY
26486
DEPARTMENT

Flowering Plants of the Temblor Range and
the Western San Joaquin Valley
LACTUCA SERRIOLA L.
Dorothy Wisselmann Ranch, eastern San Luis
Obispo County.
Common ranchground and grainfield weed. A favorite
food of cattle and deer, who seek it out in
preference to other plants.
Elevation: 2200 feet, Upper Sonoran grassland.
August 11, 1956.
Ernest C. Wisselmann
Shandon, California
Number: 4650

Lactuca serriola L.

Courtesy of Univ. of Calif.
Botany Department



(x90)

Pappus of Rafinesquia californica

(Photomicrograph showing pinnate characteristic and extreme fineness of pinnae.)

BIBLIOGRAPHY

- Clapham, A.R., T.G. Tutin and E.F. Warburg, Flora of the British Isles, Cambridge: at the University Press, 1952.
- Drake, Sir Francis, Bart, comp., The World Encompassed by Sir Francis Drake, London, 1628. Reprinted in N.M. Penzer, ed., The World Encompassed and Analogous Documents, London, The Argonaut Press, 1926.
- Edlin, H.L., British Plants and Their Uses, B.T. Batsford, Ltd., London, 1951.
- Heizer, Robert F., Francis Drake and the California Indians, 1579, University of California Press, Berkeley and Los Angeles, 1947.
- Howell, John Thomas, Marin Flora, University of California Press, Berkeley and Los Angeles, 1949.
- Kroeber, A.L., Handbook of the Indians of California, Bureau of American Ethnology, Bulletin 78, Washington D.C., 1925.
- Loudon, J.C., An Encyclopedia of Gardening..., third edition, Longman, Hurst, Rees, Orme, Brown, and Green, London, 1825.
- Martin, W. Keble, and Gordon T. Fraser, eds., Flora of Devon, T. Buncle & Co., Ltd., Arbroath, 1939.
- Munz, Philip A., A California Flora, University of California Press, Berkeley and Los Angeles, 1959.
- Smith, James E., illus. by James Sowerby, English Botany, vols. 4, 28, London, 1795, 1802.
- Sudell, Richard, The New Illustrated Gardening Encyclopedia, Charles Scribner's Sons, New York, 1933.