

REPORT ON MEXICAN UMBELLIFERÆ, MOSTLY FROM THE STATE OF OAXACA, RECENTLY COLLECTED BY C. G. PRINGLE AND E. W. NELSON.

By JOHN M. COULTER and J. N. ROSE.

HISTORY OF COLLECTIONS.

The collections of Umbelliferæ herein reported are the largest and most important ever brought from Mexico. We had looked forward with considerable interest to the results that should be obtained by Mr. Pringle and Mr. Nelson in the State of Oaxaca, and had urged the importance of collecting the species previously reported from this State. A number of rare species are known only from this region, and it is practically unrepresented in our herbaria. The National Herbarium contained but a single umbellifer from Oaxaca. In order that these collectors might obtain fresh specimens of the old species, as complete data as possible as to descriptions and stations were furnished. The care and diligence that they have shown are clearly brought out by the results here published. Not only have they collected nearly all the species previously obtained, but they have enabled us to establish 4 new genera and 27 new species. The number of Umbelliferæ which had previously been collected in the State of Oaxaca is very small. Hemsley, who has brought together the only compact list, enumerates in the *Biologia Centrali-Americana* 15 species, and 5 of these are determined only generically. Below we give a list of these species, as named by Mr. Hemsley, with the locality and collector.

Umbelliferæ collected in the State of Oaxaca previous to the year 1894.

Name of species.	Collector and number.	Habitat.
<i>Apium graveolens</i> ¹ L.....	Galeotti, 2756..	Cordillera of Oaxaca, at 5,000 feet.
<i>Arracacia decumbens</i> Benth.....	Galeotti, 2750..	Woods at 7,000 to 8,000 feet in the Cordillera of Oaxaca.
<i>Arracacia</i> sp.....	Andrieux, 352..	On Mount San Felipe, near Oaxaca.
<i>Carum</i> sp.....	Andrieux, 355..	Around Oaxaca.
<i>Eryngium carlinæ</i> Delar.....	Ghiesbreght ..	Oaxaca.
<i>Eryngium ghiesbreghtii</i> Delar.....	Ghiesbreght ..	Oaxaca.
<i>Eryngium longirameum</i> Turcz.....	Galeotti, 2769..	Cordillera of Oaxaca, at 7,000 to 8,000 feet.
<i>Eryngium scaposum</i> Turcz.....	Oaxaca, at 9,000 feet.
<i>Eryngium</i> sp.....	Galeotti, 2767..	Woods on the Pacific coast of Oaxaca, at 7,000 feet.
<i>Micropleura renifolia</i> Lag.....	Galeotti, 2752..	Woods on the mountains of the Pacific coast of Oaxaca, 6,000 to 7,000 feet.
<i>Osmorrhiza brevistylis</i> DC.....	Galeotti, 2751..	Cordillera of Oaxaca, at 9,000 feet.
<i>Pencedanum</i> sp.....	Andrieux, 355..	Oaxaca.
<i>Sium angustifolium</i> L.....	Galeotti, 2757..	Cordillera of Oaxaca, at 7,500 feet.
<i>Tauschia coulteri</i> Gray.....	Galeotti, 2760..	Woods at 7,000 to 9,000 feet.
<i>Tauschia</i> sp.....	Ghiesbreght ..	Near Oaxaca.

¹Mr. Hemsley informs me in a recent letter that Galeotti's plant is a very distinct variety. It was not collected by Mr. Pringle or Mr. Nelson.—J. N. R.

The following list represents the remarkably full collections of Messrs. Pringle and Nelson:

Umbelliferae collected in the State of Oaxaca during the year 1894.

Name of species.	Pringle's numbers.	Nelson's numbers.
<i>Ammi visnaga</i> (L.) Lam.	4855	
<i>Angelica nelsoni</i> Coult. & Rose, sp. nov.	4496	1405
<i>Apium ammi</i> Urban.	5546	17
<i>Arracacia bracteata</i> Coult. & Rose, sp. nov.	4675	
<i>Arracacia brevipes</i> Coult. & Rose, sp. nov.	5545	1097
<i>Arracacia filiformis</i> Coult. & Rose, sp. nov.	4714	621, 1088
<i>Arracacia nelsoni</i> Coult. & Rose, sp. nov.		1382
<i>Arracacia ovata</i> Coult. & Rose, sp. nov.		2223
<i>Arracacia pringlei</i> Coult. & Rose, sp. nov.	4844	
<i>Arracacia vaginata</i> Coult. & Rose, sp. nov.	6008	
<i>Berula erecta</i> (Huds.) Coville.	5544	1567
<i>Daucus montanus</i> Mart. & Koch.	4884	571
<i>Deanea nudicaulis</i> Coult. & Rose	4663	1087
<i>Eryngium alternatum</i> Coult. & Rose, sp. nov.		2248
<i>Eryngium beecheyanum</i> Hook. & Arn.	5543	1565
<i>Eryngium bromeliifolium</i> Delar.	5540, 6038, 6045	620, 1129, 1182, 1739
<i>Eryngium deppeanum</i> Schlecht. & Cham.	5548	1453, 2119
<i>Eryngium ghiesbreghtii</i> Decaisne.	4746	2061
<i>Eryngium involueratum</i> Coult. & Rose, sp. nov.	4747	
<i>Eryngium longirameum</i> Turcz.	4910	607, 1067, 1366, 2083, 2213
<i>Eryngium montanum</i> Coult. & Rose, sp. nov.	6040	1386
<i>Eryngium nelsoni</i> Coult. & Rose, sp. nov.		927, 1011
<i>Eryngium scaposum</i> Turcz.	4834, 5538	1091, 1747
<i>Foeniculum foeniculum</i> (L.) Karst.		1934
<i>Hydrocotyle bonariensis</i> Lam.	5551, 6036	760, 864, 1624, 1751, 2084
<i>Micropleura renifolia</i> Lag.	4664	588, 746, 1019
<i>Museniopsis cordata</i> Coult. & Rose, sp. nov.	5548, 5549	1418, 1900b, 2088
<i>Museniopsis dissecta</i> Coult. & Rose, sp. nov.		2062, 2091a, 2242
<i>Museniopsis peucedanoides</i> (H. B. K.) Coult. & Rose.	5543	1190
<i>Museniopsis scabrella</i> Coult. & Rose, sp. nov.	5550	1900
<i>Museniopsis serrata</i> Coult. & Rose, sp. nov.	4868, 5542	1539, 1900a, 2241
<i>Neogoezia gracilipes</i> Hemsley.	4997	
<i>Neogoezia minor</i> Hemsley.	4725	1418a
<i>Neonelsonia ovata</i> Coult. & Rose, gen. et sp. nov.	6007	1385
<i>Coaxana purpurea</i> Coult. & Rose, gen. et sp. nov.		646
<i>Oenanthe pringlei</i> Coult. & Rose, sp. nov.	6009	
<i>Ottoa oenanthoides</i> H. B. K.	4644	643, 664, 1119, 1734
<i>Osmorrhiza mexicana</i> Griesb.	5547	1383
<i>Prionosciadium megacarpum</i> Coult. & Rose, sp. nov.	4688	
<i>Rhodosciadium dissectum</i> Coult. & Rose, sp. nov.	4764	
<i>Rhodosciadium glaucum</i> Coult. & Rose, sp. nov.	4823, 5539, 5541	1434, 1711
<i>Rhodosciadium glaucum lineare</i> Coult. & Rose, var. nov.		1189, 1193

STATIONS.

The following is a list of the stations at which Umbelliferae were collected by Mr. Pringle and Mr. Nelson. They are arranged according to the number of species collected, and an alphabetical list of those from each station is given. The remarks upon the localities are made up from the notes of Messrs. Pringle and Nelson, condensed or given in full.

SIERRA DE SAN FELIPE.

The Sierra de San Felipe, or the Cerro San Felipe, proved to be by far the richest source of Umbelliferae. Twenty-three species represented by thirty-two numbers were obtained. Both Mr. Pringle and Mr. Nelson collected largely here.

Mr. Nelson writes as follows of these mountains:

The highest peak of these mountains is the Cerro San Felipe proper, which has an altitude of from 10,500 to 11,000 feet, and is distant some 12 miles from the city of

Oaxaca. Mr. Pringle seems to have collected here frequently throughout the season (May to December). I spent some ten days here (August 20 to September 1), establishing two camps near the top of the mountains, from which I made frequent excursions.

La Parada, a small Indian ranch on the north slope of the mountains, was one of the places at which Mr. Nelson camped. Its altitude is about 8,000 feet, and it is distant some 6 or 7 miles from the top of the divide, which has an altitude of 9,200 feet. The immediate region about La Parada is dry. Mr. Nelson was here August 18 to 20. He writes further:

The Cerro San Felipe is a high mountain mass situated from 8 to 10 miles north of the city of Oaxaca. It lies in an angle formed by the meeting of two arms of the valley of Oaxaca, one coming down from the north and the other from the east and meeting near the city. Bordering the east side of the northern arm of the valley is a range of oak and pine covered mountains rising from 8,000 to 10,000 feet high and having a north and south direction. This range ends by forming a series of culminating points rising to about 11,000 feet just north of Oaxaca. With this mountain group as an axis the range turns abruptly to a southeasterly course and extends thence to its junction with the cordillera of the east near the Cerro de Santa Margarita, south of Mount Zempoaltepec. Although the Cerro San Felipe is visited by frequent heavy rainstorms during the summer and the tops of the mountains are cloud-capped for days at a time, yet streams are few and small about its slopes, and springs are scarce on the summit. The slopes of the mountain are steep on all sides, but a broad, rolling area is found above 9,500 feet. This area is cut by the heads of numerous canyons and from it rise the several culminating peaks. This is a forested area with small, park-like meadows here and there.

Most of the species were collected at high altitudes: only one as low as 7,000 feet, eleven at 7,500 feet, and most of the remainder from 10,000 feet to the summit.

Species.	Altitude (feet).	Species.	Altitude (feet).
<i>Apium ammi</i>	7,500	<i>Eryngium scaposum</i>	9,500 to 11,000
<i>Arracacia bracteata</i>	9,000	<i>Micropleura renifolia</i>	7,500 to 8,500
<i>Arracacia brevipes</i>	10,000	<i>Musenopsis cordata</i>	9,500
<i>Arracacia filiformis</i>	9,500 to 11,000	<i>Musenopsis peucedanoides</i>	9,500
<i>Arracacia pringlei</i>	10,300	<i>Musenopsis scabrella</i>	7,000
<i>Berula erecta</i>	7,500	<i>Musenopsis tuberosa</i>	7,500
<i>Daucus montanus</i>	7,500	<i>Neogoezia minor</i>	9,000 to 10,500
<i>Deanea nudicaulis</i>	7,500 to 10,000	<i>Osmorrhiza mexicana</i>	10,000
<i>Eryngium bromeliaefolia</i>	10,000	<i>Ottoa ananthoides</i>	10,000
<i>Eryngium deppeanum</i>	7,500	<i>Prionosciadium megacarpum</i>	7,500
<i>Eryngium ghiesbreghtii</i>	7,500	<i>Rhodosciadium glaucum</i>	6,000
<i>Eryngium involucreatum</i>	10,000		
<i>Eryngium longirameum</i>	7,500 to 8,500		
<i>Eryngium nelsoni</i>	7,500 to 8,500		

SIERRA DE CLAVELLINAS.

The mountains bordering the valley of Oaxaca on the west are called the Sierra de Clavellinas. They run in a north and south direction and have an altitude of 6,500 to 9,500 feet. These mountains proved to be very interesting collecting ground, especially the small meadows near the top. Mr. Pringle writes thus of his work here:

The cold spring meadows on the summit of the mountains west of Oaxaca are narrow openings in heavy forests of oaks and pines, scarcely a mile in extent. One would

have to travel far, I feel sure, to find others of similar character, as it was here that Mr. Nelson and I found *Angelica nelsoni*, *Eryngium montanum*, *Enanthe pringlei*, and other new species. We may infer that they are extremely local in their habits. *Neonelsonia ovata* and *Arracacia vaginata* grew in the moist woods on the borders of these grassy openings and find congenial situations here and there throughout that range.

Mr. Pringle collected his Umbelliferae here in October, all at an altitude of 9,000 feet. Mr. Nelson spent ten days (September 10 to 20) in the highest part of the mountains. His camp was located in one of the high meadows mentioned above, at an altitude of about 9,300 feet. Two species are from the foothills. His camp was about 18 miles southwest of the city of Oaxaca.

The following species were collected here:

Species.	Altitude (feet).	Species.	Altitude (feet).
<i>Angelica nelsoni</i>	9,000	<i>Eryngium montanum</i>	9,000
<i>Arracacia nelsoni</i>	7,500 to 9,500	<i>Neogoezia gracilipes</i>	5,500 to 7,500
<i>Arracacia vaginata</i>	9,000	<i>Neonelsonia ovata</i>	7,500 to 9,500
<i>Eryngium deppianum</i>	5,500 to 7,500	<i>Enanthe pringlei</i>	9,000
<i>Eryngium longirameum</i> ...	7,500	<i>Osmorrhiza mexicana</i>	10,000

MOUNT ZEMPOALTEPEC.

This peak is situated some 50 miles east of the city of Oaxaca and is the culminating point of a high ridge, mostly of 7,000 to 9,000 feet altitude, running north and south. Mr. Nelson thinks its altitude is about 11,400 feet, although it is generally given as 13,100 feet. The main peak is rocky and covered with pines. Mr. Nelson spent eight days collecting upon the slopes and peaks of this mountain. Seven species of Umbelliferae, represented by eight numbers, were collected. Mr. Pringle did not visit this region.

The following species were collected here:

Species.	Altitude (feet).	Species.	Altitude (feet).
<i>Arracacia filiformis</i>	11,400	<i>Micropleura renifolia</i> ...	7,700 to 8,000
<i>Daucus montanus</i>	7,700 to 8,000	<i>Coaxana purpurea</i>	10,000 to 11,000
<i>Eryngium bromeliaefolium</i> ..	11,400	<i>Ottou ananthoides</i>	8,000 to 11,000
<i>Eryngium longirameum</i> ..	7,700 to 8,000		

CUICATLAN.

The town of Cuicatlan is located in the bottom of the valley of Cuicatlan, at an altitude of only 1,800 feet. The neighboring region is extremely arid and the vegetation is very scanty. Two species of Hydrocotyle were obtained by Mr. Nelson. On the high mountain ridge to the west three other species were collected.

The following species were here obtained, of which Mr. Pringle collected *Hydrocotyle bonariensis*.

Species.	Altitude (feet).	Species.	Altitude (feet).
<i>Hydrocotyle bonariensis</i> ...	1,800 to 2,500	<i>Museniopsis scabrella</i> ...	7,500 to 8,000
<i>Hydrocotyle mexicana</i>	1,800 to 2,500	<i>Museniopsis tuberosa</i>	7,500 to 8,000
<i>Museniopsis cordata</i>	7,500 to 8,000		

REYES.

The town of Reyes is situated on the west side of the Sierra de Reyes which border the valley of Cuicatlan. It is about 10 miles northeast of the town of Cuicatlan, at an altitude of 6,700 feet. The Sierra de Reyes runs in a north and south direction. The slopes both on the east and west are very steep. The divide above Reyes is 9,400 feet altitude. The highest peak of this range is the Volcan Negro, whose altitude is 10,400 feet.

The following species were collected here:

Species.	Altitude (feet).	Species.	Altitude (feet).
<i>Eryngium bromeliaefolia</i> ..	10,000	<i>Museniopsis cordata</i>	8,000
<i>Eryngium scaposum</i>	7,500 to 10,400	<i>Oittoa unanthisoides</i>	7,500 to 10,000
<i>Hydrocotyle mexicana</i>	8,000	<i>Rhodosciadium glaucum</i> ..	6,000 to 7,500

TLAPANCINGO AND VICINITY.

The town of Tlapancingo is situated about 6 miles from the western border of Oaxaca. Its altitude is 5,200 feet above the sea. On the east side rises a mountain range to the height of 9,000 feet in the vicinity of the town, farther south becoming even higher, but toward the north lower. This region is very dry and the vegetation much stunted. In the higher parts of the mountains more rain falls and the vegetation is more luxuriant. Two trips were made by Mr. Nelson into the mountains. All the Umbelliferae obtained were from the mountains about the town. Mr. Nelson was in this region from December 6 to 9, 1894.

The following species were collected:

Species.	Altitude (feet).	Species.	Altitude (feet).
<i>Eryngium ghiesbreghtii</i> ...	6,000 to 8,000	<i>Museniopsis dissecta</i>	6,000 to 8,000
<i>Eryngium longirameum</i> ..	6,000 to 8,000	<i>Neogoczia gracilipes</i>	6,000 to 8,000
<i>Hydrocotyle mexicana</i>	6,000 to 8,000		

LAS SEDAS.

Las Sedas is located near the north end of the valley of Oaxaca. This is a small railroad station at the lowest pass of the continental divide, where the road from Puebla City enters the valley of Oaxaca

and runs to the city of Oaxaca. Its distance from the latter place is about 30 miles. Its altitude is about 6,400 feet. Mr. Nelson and Mr. Pringle each collected two species here. Mr. Pringle visited the place in August and Mr. Nelson in October.

The following were the species collected:

Species.	Altitude (feet).	Species.	Altitude (feet).
<i>Berula erecta</i>	6,800 to 7,800	<i>Museniopsis serrata</i>
<i>Eryngium beccheyanum</i> ..	6,000 to 7,800	<i>Rhodosciadium dissectum</i>	6,000

MINOR STATIONS.

Mr. Nelson collected *Hydrocotyle mexicana* and *Spananthe paniculata* about Choapam. The town of Choapam is situated in the extreme northeastern part of Oaxaca. Its altitude is only 2,800 feet. The climate is tropical. Mr. Nelson was here from July 26 to 29. Mr. Nelson also collected two species at Totontepec, viz, *Hydrocotyle mexicana* and *Micropleura renifolia*. The town of Totontepec is situated on the east slope of the mountain of which Zempoaltepec is the highest peak. The altitude of the town is 6,000 feet.

Mr. Nelson collected *Eryngium nelsoni* in the mountains above Yalalag. This is a large Indian town. Its altitude is about 3,800 feet, and it lies near the base of the mountains of which Zempoaltepec is the highest peak.

Mr. Pringle collected *Neogoezia gracilipes* at Santa Inez del Norte; *Arracacia trifida* at Sierra de las Cruces; *Museniopsis serrata* and *Eryngium longirameum* at Cuesta de San Juan del Estado.

Besides the above stations in the State of Oaxaca Mr. Nelson collected Umbelliferae in the States of Guerrero, Puebla, and Vera Cruz, and Mr. Pringle a few in the States of Mexico and Vera Cruz.

CATALOGUE OF SPECIES.

The material afforded by these collections has warranted the establishment of four new genera, viz, Coaxana, Deanea, Neogoezia, and Neonelsonia, of which the first and last are here first published. It has also necessitated a revision and enlargement of *Museniopsis*. The list includes some species additional to those named above.

***Ammi visnaga* (L.) Lam. Fl. Fr. iii, 462 (1778); *Daucus visnaga* L. Sp. Pl. i, 242 (1753).**

Collected by Mr. C. G. Pringle in cultivated fields in valley of Oaxaca, near Etlá, altitude 5,400 feet, September 13, 1894 (No. 4855).

This is the first time, so far as we know, that this plant has been obtained in Mexico. It has been reported only a few times from the United States, and then on ballast ground.

***Angelica nelsoni* Coult. & Rose, sp. nov.**

Evidently a tall, branching perennial, more or less pubescent; leaves large, 3 to 4 times ternate; leaflets lanceolate, 3.7 to 6.2 cm. long, 12 to 20 mm. broad, generally rounded at base, simply and sharply serrate, rather long-pointed; peduncles axillary

and terminal, either elongated or nearly wanting; rays numerous (25 to 35), the longer ones about 5 cm. long; involucre wanting, or of a few linear bracts; involucre bractlets filiform; flowers white; fruit oval, 3 mm. in diameter; dorsal and intermediate ribs slightly winged, lateral wings thin; oil-tubes solitary in the intervals, 4 on the commissural side; stylopodium conical; seed indented beneath the oil-tubes and with a flat face.

Collected by F. W. Nelson, September 10 to 20, 1891 (No. 1405), and by Mr. C. G. Pringle in wet meadows of Sierra de Clavellinas, altitude 9,000 feet, October 16, 1894 (No. 4996). Much like *A. seatonii*, but with larger leaves, smaller leaflets, more numerous rays, smaller fruit, etc.

Here also should be referred Bourgeau's No. 2677, vide Hemsley in lit.

The two following species, although closely related to the above, appear to be distinct:

***Angelica seatonii* Coult. & Rose, sp. nov.**

Leaves twice ternate or somewhat pinnate; leaflets ovate, 3.7 to 6.2 cm. long, rather long-pointed, somewhat tapering at base, especially the terminal ones, sharply serrate, slightly pubescent on the veins; peduncles axillary and terminal; rays rather numerous (15 to 20), the longer ones 5 cm. long; pedicels numerous, 12 mm. long, more or less pubescent, as also the rays and peduncle; involucre none; bractlets of the involucre filiform; flowers probably white; fruit oblong, 5 mm. long, 4 mm. broad; wings about as broad as body, thick and corky; dorsal and intermediate ribs prominent; oil-tubes solitary in the intervals or two in the lateral ones, 4 on the commissural side; stylopodium conical; seed indented beneath the oil-tubes and with a flat face.

Collected by Mr. Henry Seaton on Mount Orizaba, Mexico, July 29, 1891 (No. 65), and distributed as *Angelica mexicana* Vatke.

This species differs from *A. nelsonii* in having more simple leaves, broader leaflets, few rays, and larger fruit with thicker wings.

Here we would refer Botteri's specimens from this region. That in the Gray herbarium is No. 83, while the specimen Mr. Hemsley refers to in Biol. Centr.-Amer. i, 567 is No. 870. This latter number is probably wrong, as C. Wright's MS. list of Botteri's collection, now in the National Herbarium, refers it to a *Eupatorium*.

***Angelica pringlei* Coult. & Rose, sp. nov.**

Rather low, 6 to 9 dm. high; leaves 2 to 3 times ternate; leaflets ovate, 2.5 to 5 cm. long, doubly serrate, mostly rounded or truncate at base, slightly pubescent on the veins, the lateral distinctly petioled; rays of the umbel 25 to 30, 3.7 to 6.2 cm. long; pedicels 3 to 6 mm. long; flowers pinkish or white; fruit oval, 4 mm. in diameter; wings a little broader than body, thin; dorsal and intermediate ribs prominent; stylopodium low, depressed; oil-tubes solitary in the intervals or 2 in the lateral, 4 on the commissural side; seed strongly indented beneath the oil-tubes, with a broad, shallow, concave face.

Collected by C. G. Pringle along streams, Sierra de las Cruces, State of Mexico, September 11, 1892 (No. 5209).

This species differs from *A. nelsonii* in being of lower stature, with broader and somewhat doubly serrate leaflets and fewer rays.

***Apium ammi* (Jacq.) Urban, Fl. Bras. xi, pt. 1, 341, t. 91 (1879); *Sison ammi* Jacq. Hort. Vindob. ii, t. 200 (1772); *Apium leptophyllum* F. Muell.**

Collected by C. G. Pringle on the Sierra de San Felipe, altitude 7,500 feet, September 11, 1894 (No. 5546); also collected by E. W. Nelson at Orizaba, January 28, 1894 (No. 17); and by Mr. C. G. Pringle in Baranca near Guadalajara, Jalisco, July 10, 1894 (No. 5552).

***Arracacia bracteata* Coult. & Rose, sp. nov.**

Perennial; stems 9 to 12 dm. high, glabrous and glaucous; radical leaves from 3 to 4 times ternate, with long petioles; leaflets ovate, acute, 2.5 to 5 cm. long, ser-

rate, the terminal leaflet mostly with wedge-shaped base; stem leaves somewhat similar, 2 or 3 times ternate; leaflets often larger, somewhat oblique at base; petiole short with a broad sheath, scarious throughout; peduncles stout, very variable in length, 3 dm. long or less, sometimes wanting; involucre a simple or 3-lobed leaf; involucels of a few green linear or lanceolate bracts much longer than the fruit; rays very variable, 5 to 10 cm. long; pedicels 4 mm. long; flowers yellowish-purple(?); fruit broadly ovate, 6 mm. long, rounded at base, acute; ribs rather sharp and prominent; interval narrow, with a single large oil-tube; styles short, with conical stylopodia; seed with a narrow rather shallow sulcus, strongly indented beneath the oil-tubes.

Collected by Mr. C. G. Pringle, in wet canyons, Sierra de San Felipe, altitude 9,000 feet, June 1, 1894 (No. 4675).

Arracacia brevipes¹ Coult. & Rose, sp. nov.

Stems 9 to 18 dm. high, branching, glabrous; leaves twice ternate, leaflets ovate, 18 to 25 mm. long, slightly lobed and serrate, acute, paler and slightly scarious beneath; peduncles generally long (2.8 dm. or less); involucre a single leaflet or wanting; involucels of several linear bracts longer than the flowers; rays rather variable in length, 2.5 to 7.5 cm. long; pedicels, 4 mm. long; flowers yellow; fruit ovate, 5 to 6 mm. long, with long reflexed styles and conical stylopodia; ribs not prominent; oil-tubes solitary in the intervals, with 1 or 2 shorter and smaller accessory ones, 4 on the commissural face; seed with involute margins inclosing a central cavity.

Collected on the Sierra de San Felipe, altitude 10,000 feet, by Mr. C. G. Pringle, September 17, 1894 (No. 5545); and by Mr. E. W. Nelson, August 20 to 30, 1894 (No. 1097).

Arracacia (?) filiformis Coult. & Rose, ined.²

Collected by Mr. C. G. Pringle on rocky summit ridges, Sierra de San Felipe, altitude 10,500 feet, June 26 and August 4, 1894 (No. 4714); and by Mr. E. W. Nelson on the summit of Mount Zempoaltepec, altitude 11,400 feet, July 9, 1894 (No. 621), Sierra de San Felipe, altitude 9,500 to 11,000 feet, August 20 to 30, 1894 (No. 1088).

Arracacia nelsoni Coult. & Rose, sp. nov.

Stems 2.5 to 5 cm. high, from slender creeping roots, slightly branching; leaves twice ternate; leaflets ovate, 18 to 35 mm. long, serrate, acute, paler and glabrous beneath; peduncles 5 to 10 cm. long; involucre a single scarious bract, 6 mm. long; involucels of several filiform bracts about the length of the pedicels; rays 2.5 to 5 cm. long; pedicels 4 mm. long; fruit ovate, 5 mm. long, beaked, with prominent ribs; styles long, erect; stylopodia conical; oil-tubes solitary in the intervals, 4 on the commissural side; seed with a narrow sulcus extending to the middle.

Collected by Mr. E. W. Nelson from the tops of the mountains 18 miles southwest of the city of Oaxaca, between altitude 7,500 to 9,500 feet, September 10 to 20, 1894 (No. 1382). There is some confusion regarding this number, as Mr. Nelson's notes under it refer to a composite. The number may be duplicated.

Arracacia ovata Coult. & Rose, sp. nov.

Stems 12 to 18 dm. high; radical leaves twice ternate, with long petioles; leaflets pedicellate, broadly ovate, acute, rounded or cordate at base, sometimes with a

¹This may be the plant referred by Mr. Hemsley in *Biologia Centrali-Americana* to *Tauschia coulteri* Gray, Pl. Lindh. ii, 211 (1850). Coulter's species, however, came from Real del Monte, and while it is like *A. brevipes* in habit, has different foliage, longer pedicels, etc. It does not belong with *Tauschia nudicaulis* but its relations are with *Arracacia*, and it may be referred as **Arracacia coulteri** (Gray).—J. N. R.

²The technical description and illustration of this species will appear in a future number of Hooker's *Icones Plantarum*. It was my intention to republish it here, but owing to some delay, the number of the *Icones* to contain the description has not yet been issued. I have, therefore, withdrawn the description from the proof.—J. N. R.



COAXANA PURPUREA Coult. & Rose.

lateral lobe, 5 to 5.7 cm. long, 3 to 5.5 cm. broad, finely serrate; peduncles thick, 5 to 15 cm. long; rays numerous, about equal, 3.5 to 5 cm. long; pedicels 4 mm. long; involuclers present; fruit oblong, 6 mm. long, rounded at base; ribs sharp and prominent; intervals broad, each with 3 small oil-tubes, 4 oil-tubes on the commissural side; styles not long, with conical stylopodia; seed with moderately broad sulcus, extending to middle.

Collected by Mr. E. W. Nelson on rocks near the top of the Sierra Madre near Chilpancingo, Guerrero, altitude 9,500 feet, December 24, 1894 (No. 2223).

Arracacia pringlei Coult. & Rose, sp. nov.

Perennial; stems 3 to 6 dm. high, branching above, glabrous; radical leaves 3 to 4 times ternate, ovate, acute, coarsely lobed or serrate, 18 to 25 mm. long; peduncles 3 to 12.5 cm. long; rays numerous, 12 to 18 mm. long; involucre of 1 or 2 linear scarious-margined bracts as long as or longer than the rays; involuclers of 1 to 3 conspicuous bracts, 12 mm. long, extending much beyond the flowers; pedicels short, 2 mm. long; flowers white (?); fruit narrowly oblong, 8 mm. long, rounded at base, slightly beaked; ribs sharp and prominent; intervals broad, normally with a single large oil-tube; styles long, with slender conical stylopodia; seed with a narrow deep sulcus and slightly indented beneath the oil tubes.

Collected by Mr. C. G. Pringle on summit ledges, Sierra de San Felipe, altitude 10,300 feet, August 29, 1894 (No. 4844).

Mr. Pringle writes: "*Arracacia pringlei* is another rare plant, evidently because it grows on shelves of nearly treeless summit knobs at over 10,000 feet altitude."

Arracacia (?) vaginata Coult. & Rose, sp. nov.

Stems 5 to 7.5 cm. high; radical leaves twice pinnate; leaflets ovate, coarsely serrate or cleft, obtuse, wedge-shaped at the base; peduncles 5 to 17.5 cm. long; involucre of several linear bracts or wanting; involuclers of several bractlets, as long as the flowers; rays short, 6 to 28 mm. long; pedicels 2 to 4 mm. long; fruit ovate, 5 to 6 mm. long; styles long; stylopodia wanting; oil-tubes solitary in the intervals, 2 on the commissural side; seed strongly involute with closed sinus and inclosing a central cavity.

Collected by Mr. C. G. Pringle in borders of woodlands, Sierra de Clavellinas, altitude 9,000 feet, October, 1894 (No. 6008).

Berula erecta (Huds.) Coville, Contr. Nat. Herb. iv, 115 (1893); *Sium erectum* Huds. Fl. Angl. 103 (1762); *Berula angustifolia* Mart. & Koch.

Collected by Mr. E. W. Nelson in the mountains bordering on the valley of Oaxaca, altitude 6,800 to 7,800 feet, October 3, 1894 (No. 1567); also by Mr. C. G. Pringle in springy places in the Sierra de San Felipe, altitude 7,500 feet, September 10, 1894 (No. 5544).

Coaxana, Coult & Rose, gen. nov. (Selineae).

Calyx teeth obsolete. Fruit oblong, glabrous and glaucous, with low conical stylopodium bearing a rather long recurved style. Carpel 3- or 4-winged (the lateral wings always present, with either 2 intermediates or a single dorsal). Oil-tubes 6 to 8, with 2 on the commissural side. Seed (immature) sulcate beneath the oil-tubes with a flattish or concave face.—Caulescent perennials, with ternately compound leaves (having very prominent inflated sheaths), no involucre (or sometimes a single bract), and conspicuous involuclers of narrow toothed bractlets.

Apparently most nearly allied to *Thaspium*, but different from it in its foliage, conspicuous involuclers, conical stylopodia, and numerous oil-tubes.

Coaxana purpurea Coult. & Rose, sp. nov.

PLATE V.

Herbs 9 to 18 dm. high, glabrous and glaucous, more or less purplish throughout; radical leaves 3 dm. long, thrice ternate; leaflets reticulate and much paler beneath, sharply and doubly serrate; stem leaves much smaller, with very much inflated sheaths; peduncles short, 5 to 7.5 cm. long; involucler leaf when present 3.6 cm.

long; involucrel conspicuous, much longer than the flowers, 1.8 to 2.5 cm. long; rays 15 to 20, nearly equal, 3.6 cm. long; pedicels 5 cm. long.

Collected by Mr. E. W. Nelson on the southwest side of the summit of Mount Zempoaltepec, altitude 10,000 to 11,000 feet, July 5 to 13, 1894 (No. 646).

EXPLANATION OF PLATE.—Fig. *a*, dorsal view of carpel, enlarged 5 diameters. *b*, cross section of the fruit, enlarged 8 diameters.

Daucus montanus Humb. & Bonp.; Schult. Syst. vi, 482 (1820).

Collected by Mr. E. W. Nelson on the west slope of Mount Zempoaltepec, altitude 7,700 to 8,000 feet, July 5 to 13, 1894 (No. 571); and by Mr. C. G. Pringle on Sierra de San Felipe, altitude 7,500 feet, September 11, 1894 (No. 4884); also by Mr. E. W. Nelson near the road between Juquila and Nopala, altitude 6,000 feet, March 4, 1895 (No. 2407).

Deanea Coult. & Rose, Bot. Gaz. xx, 372 (1895).

Calyx teeth obsolete. Fruit oval, glabrous, with 2-parted carpophore and broad conical stylopodia bearing short styles. Carpel with dorsal and intermediate ribs thickened-filiform; lateral wings broad and thin, surrounding the fruit. Oil-tubes 1 to 3 in the intervals, 6 to 8 on the commissural side. Seed strongly flattened, the face with a narrow sulcus which connects with a narrow cavity extending laterally across the face of the section, making a strongly involute seed.—Short-caulescent perennials, with filiform or tuberous roots, ternately or pinnately dissected leaves, involucre wanting or of a single bract, involucrel of small linear bractlets, and purple flowers.

There is a general resemblance in habit to *Rhodosciadium* Wats., but the obsolete calyx teeth, more prominent stylopodium, and especially the peculiar cavity of the seed face, plainly separate it. *Prionosciadium* Wats. has a somewhat similar seed-face, but its species are high-caulescent even shrubby plants, with much larger and more prominently ribbed fruit, depressed stylopodium, and short calyx teeth.

The genus is dedicated to Mr. Walter Deane, of Cambridge, Mass., whose interest in American botany and botanists deserves commemoration.

Deanea nudicaulis Coult. & Rose, Bot. Gaz. xx, 372 (1895).

PLATE VI¹.

Shortly caulescent, or acaulescent, 3 to 5 dm. high, from thick branching roots; radical leaves dark-green, 2 to 3 times ternate; leaflets ovate, lobed and toothed, acute, glabrous; stem leaves reduced to inflated sheaths, with 1 to 3 small leaflets, often opposite; fruiting rays (3 to 8), spreading, 2.5 to 5 cm. long, slightly scabrous on the angles; pedicels 3 to 6 mm. long; fruit 5 mm. in diameter; wings thin, as broad or half as broad as body; oil-tubes 2 to 4 in the intervals, 6 on the commissural side.

Collected by Mr. C. G. Pringle on the Sierra de San Felipe, altitude 7,500 to 10,000 feet, May 28, 1891, and August 3, 1894 (No. 4663); and by Mr. E. W. Nelson on the Sierra de San Felipe, at an altitude of 10,000 to 11,000 feet, September 20 to 30, 1894 (No. 1087).

EXPLANATION OF PLATE.—Fig. 1, flowering plant; 2, fruiting umbel; 3, dorsal view of carpel; 4, cross section of same; 3 and 4 enlarged.

Deanea tuberosa Coult. & Rose, Bot. Gaz. xx, 373 (1895).

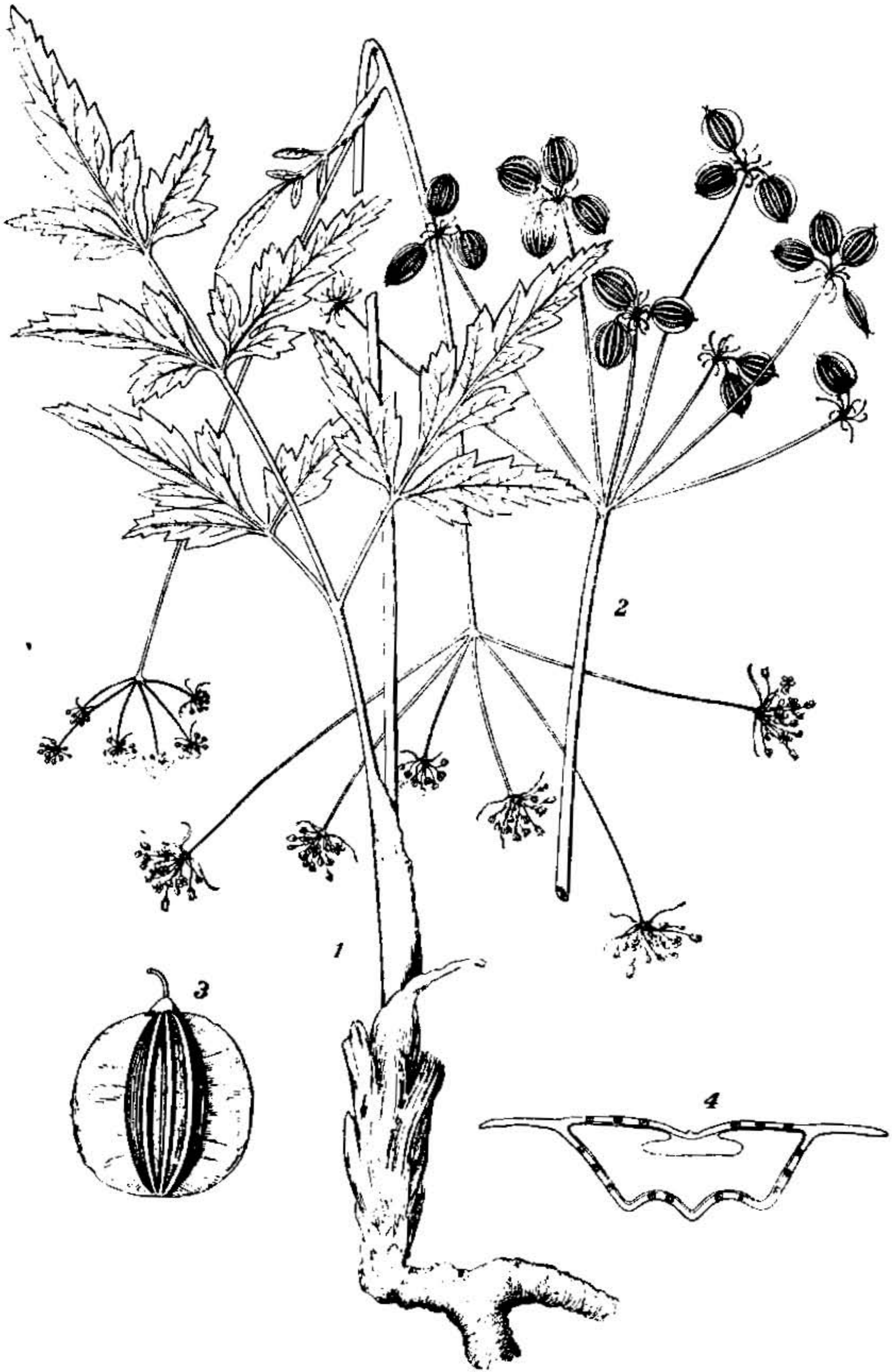
Shortly caulescent, 5 to 7.2 dm. high, from a globose tuber; leaves twice pinnate; leaflets sharply toothed or cleft into linear segments, slightly scabrous beneath; peduncle 2 to 3 dm. long; rays 5 to 8, unequal, 1.2 to 5 cm. long; pedicels 2 mm. long; fruit about 6 mm. in diameter; wings thin, about as broad as body; oil-tubes 1 to 3 in the intervals, 6 to 10 on the commissural side.

Collected by Mr. C. G. Pringle in low meadows, valley of Toluca, State of Mexico, October 3, 1892 (No. 4295). Distributed by Mr. Pringle as a *Rhodosciadium*.

Eryngium alternatum Coult. & Rose, sp. nov.

Stem 9 to 18 dm. high; radical and lower stem leaves linear, 4.5 dm. long, 12 mm. broad; marginal spines in pairs, one very long and one short, or long and short sepa-

¹From the Botanical Gazette by the kind permission of the editors.



DEANEA NUDICAULIS Coult. & Rose.

rate, alternating, the longer spines 25 mm. long; upper stem leaves 3-lobed or 3-cleft; uppermost leaves linear, entire; heads numerous, small, on short peduncles; involueral bracts linear, entire, longer than the heads; involucels conspicuous.

Collected by Mr. E. W. Nelson from near the top of Sierra Madre near Chilpancingo, Guerrero, altitude 9,000 to 10,200 feet, December 21, 1894 (No. 2248).

Eryngium beecheyanum Hook. & Arn. Bot. Beech. 294 (1839 or -40).

Collected by Mr. C. G. Pringle on the continental divide near Las Sedas, altitude 6,000 feet, August 16, 1894 (No. 5544a); also by Mr. E. W. Nelson on mountains at north end of Valley of Oaxaca, altitude 6,800 to 7,800 feet, October 3, 1894 (No. 1565).

We have not seen either type or authentic specimens of this species, but this reference seems reasonably certain.

Eryngium bromeliæfolium Delar. Eryng. Hist. 60, t. 28 (1808).

Collected by Mr. E. W. Nelson near Reyes, October 20, 1894 (No. 1739); summit of Mount Zempoaltepec, altitude 11,400 feet, July 9, 1894 (No. 620); Sierra de San Felipe, September 20 to 30, 1894 (Nos. 1182, 1129); also by Mr. C. G. Pringle, mountains about Oaxaca, altitude 10,000 feet, May 22, 1894 (No. 5540); Sierra de San Felipe, altitude 10,000 feet, November 14, 1894 (No. 6045); Sierra de Reyes, altitude 10,000 feet, November 9, 1894 (No. 6038).

More than one species may be represented among these specimens.

Eryngium carlinæ Delar. Eryng. Hist. 53, t. 23 (1808).

Collected by Mr. C. G. Pringle in fields near Orizaba, State of Vera Cruz, February 2, 1895 (No. 5553).

Eryngium cymosum Delar. Eryng. Hist. 63, t. 31 (1808).

Collected by Mr. E. W. Nelson along the road between Tixtla and Chilpancingo, Guerrero, December 16, 1895 (No. 2172).

Eryngium deppeanum Cham. & Schlecht. Linnaea, v, 207 (1830).

Collected by Mr. E. W. Nelson in the Valley of Oaxaca, altitude 5,500 to 7,500 feet, September 20, 1894 (No. 1443); near the road between Ayusinapa and Petatlan, Guerrero, altitude 5,000 to 7,000 feet, December 14, 1894 (No. 2119); also by Mr. C. G. Pringle, Sierra de San Felipe, altitude 7,500 feet, October 5, 1894 (No. 5548a).

Eryngium ghiesbreghtii Decaisne, Bull. Soc. Bot. France, xx, 21 (1873).

Stems from a cluster of slender fleshy-thickened roots, 6 to 12 dm. high, either simple or more or less branched; radical and lower stem leaves lanceolate, acute, rounded or somewhat cordate at base, serrate, 7.5 to 10 cm. long, on petioles 7.5 to 12.5 cm. long; upper stem leaves much reduced, opposite; peduncles slender; heads oval or short-oblong, 12 to 15 mm. long; involueral bract shorter than the heads, lanceolate, pungent, with 2 to 4 spiny teeth or lobes; bractlets of the involucels linear, entire, pungent.

Collected by Mr. C. G. Pringle in oak woods on the Sierra de San Felipe, altitude 7,500 feet, November 17, 1894 (No. 4746); and by Mr. E. W. Nelson on mountains near Tlapancingo, altitude 6,000 to 8,000 feet, December 7, 1894 (No. 2061).

Eryngium involucratum Coult. & Rose, sp. nov.

Stems low, 6 dm. high; radical and lower stem leaves linear, 15 to 20 cm. long; the margins with spiny teeth, the longer ones longer than the breadth of the leaves; upper stem leaves opposite, deeply cleft; involueral leaves numerous, conspicuous, much longer than the large heads, lanceolate, with pungent teeth; bractlets of the involucels linear, pungent.

Collected by Mr. C. G. Pringle on Sierra de San Felipe, altitude 10,000 feet, November 14 and December 24, 1894 (No. 4747).

Eryngium longirameum Turcz. Bull. Soc. Nat. Mosc. xx, pt. 1, 171 (1847).

Collected by Mr. C. G. Pringle on the Cuesta de San Juan del Estado, altitude 7,500 feet, August 21, 1894 (No. 4910); also by Mr. E. W. Nelson 18 miles southwest

of the city of Oaxaca, altitude 7,500 feet, September 10 to 20, 1894 (No. 1366); La Parada, altitude 7,500 to 8,500 feet, August 19, 1894 (No. 1007); west slope of Mount Zempoaltepec, altitude 7,700 to 8,000 feet, July 5 to 13, 1894 (No. 607); mountains near Tlapancingo, altitude 6,000 to 8,000 feet, December 7, 1894 (No. 2083); on the top of Sierra Madre, near Chilpancingo, Guerrero, altitude 9,000 to 10,200 feet, December 24, 1894 (No. 2213); also by Rev. Lucius C. Smith, mountains of San Juan del Estado, altitude 7,500 feet, August 13, 1894 (No. 119).

We have seen no authentic specimens of *E. longirameum*. Our specimens differ from the description in having leaves cordate-ovate rather than "ovato-ellipticis."

***Eryngium montanum* Coult. & Rose, sp. nov.**

Stems 6 to 7.5 cm. long; leaves numerous at base, linear, 2 to 3.2 dm. long, 12 to 15 mm. broad; the margins with numerous spiny teeth, single and much shorter than the breadth of the leaves; stem leaves much reduced and mostly alternate; stems often monocephalous or sometimes bearing 3 or 4 heads; heads oblong, obtuse, 25 to 30 mm. long; involueral bracts numerous, linear, entire or with a few teeth at base, shorter than the heads; bractlets of the involuclals linear, rigid.

Collected in wet meadows, Sierra de Clavellinas, altitude 9,000 feet, by Mr. E. W. Nelson, September 10 to 20, 1894 (No. 1386); and also by Mr. C. G. Pringle, October 17, 1894 (No. 6040).

***Eryngium nasturtiifolium* Juss.; Delar. Eryng. 46, t. 17 (1808).**

Collected by Mr. E. W. Nelson from the low damp plains about Tlacotalpan, Vera Cruz, May 21, 1894 (No. 518).

***Eryngium nelsoni* Coult. & Rose, sp. nov.**

Stems from a cluster of slender fibrous roots, 15 to 20 cm. high, somewhat branching; leaves spatulate, obtuse, tapering at base into a winged petiole, with callous margins, crenate and apiculate, 3.5 to 7.5 cm. long including the petiole; upper leaves reduced, opposite and more or less lobed; peduncles either single or in threes, slender, 6 to 15 cm. long; involueral bracts about 10, little if at all longer than the oval heads, linear-oblong, apiculate, entire or often with a small tooth on the side, greenish or bluish without, white and shining within; involuclal bractlets linear, rigid, about the length of the flowers; fruit obovate, with small scales, especially above.

Collected by Mr. E. W. Nelson near La Parada, altitude 7,500 to 8,500 feet, August 19, 1894 (No. 1011), and on mountains about Yalalag, altitude 6,000 feet, August 1, 1894 (No. 972).

Near *E. scaposum*, but apparently distinct.

***Eryngium scaposum* Turcz. Bull. Soc. Nat. Mosc. xx, pt. 1, 172 (1847).**

Collected by Mr. E. W. Nelson near Reyes, altitude 7,500 to 10,400 feet, October 20, 1894 (No. 1747), and in the vicinity of Sierra de San Felipe, altitude 9,500 to 11,000 feet, 1894 (No. 1091); also by Mr. C. G. Pringle on Sierra de San Felipe, altitude 10,400 feet, June 26 and August 25, 1894 (Nos. 4834 and 5538).

We have no authentic specimens of *E. scaposum*, in fact the species has not been collected since the original collection made by Galeotti from this same State. The leaves are oblong, with tapering bases, hardly "oblongo-lanceolatis." The scapes, while usually bearing single heads, often in vigorous plants produce additional heads from the axils of the leafy bracts.

This species appears to be near *E. gracile*.

***Eryngium seatonii* Coult. & Rose, Proc. Amer. Acad. xxviii, 118 (1893).**

Stem erect, stout, 9 to 12 dm. high; leaves linear, parallel-nerved; radical leaves 3 to 3.75 cm. long, 8 to 10 mm. wide, the margin toothed with paired spines, one much longer and about equal to the breadth of leaf; stem leaves all alternate, with marginal spines often in threes and fours, clasping at base; heads few, terminal and axillary, shortly pedunculate, oblong, 20 mm. long; involuclere of 11 or 15 bracts,

oblong-linear, sharp-pungent, 5 cm. or more long, with 3 or 4 pairs of spines or the inner ones sometimes entire; bractlets blue, pungent, a little longer than the flowers.

Collected by Mr. E. W. Nelson on Mount Orizaba, altitude 10,500 to 13,800 feet, March 18, 1894 (No. 271).

The type was collected by Mr. Henry Seaton from this mountain in 1891.

Near *E. protaeflorum*, but with more scattered stem leaves, narrower radical leaves, and fewer bracts, and bearing several heads. Galeotti's No. 2763, which was found on Mount Orizaba at exactly the altitude of the type and referred to *E. protaeflorum*, is in all probability the above plant.

Foeniculum foeniculum (L.) Karst. Deutsch. Fl. 837 (1880-83); *Anethum faniculum* L. Sp. Pl. i, 263 (1753).

Collected by Mr. E. W. Nelson on the side of the trail between Coixtlahuaca and Tamazulapan, Oaxaca, November 12, 1894 (No. 1934).

Reported as very rare. This species we have not seen before from Mexico, although it has doubtless become established in some places.

Hydrocotyle bonariensis Lam. Encycl. iii, 153 (1789).

Collected in the vicinity of Cuicatlan, altitude 2,000 feet, by C. G. Pringle, November 6, 1894 (No. 5551); and by Mr. E. W. Nelson, October 8 to 24, 1894 (No. 1624); also by Rev. Lucius C. Smith, August 20, 1894 (No. 120).

Hydrocotyle mexicana Cham. & Schlecht. Linnaea, v, 208 (1830).

Collected by Mr. C. G. Pringle in damp woods, Sierra de Reyes, altitude 8,000 feet, November 8, 1894 (No. 6036); and by Mr. E. W. Nelson in the vicinity of Totontepec, altitude 5,500 to 7,000 feet, July 15 to 20, 1894 (No. 769); vicinity of Cuicatlan, altitude 1,800 to 2,500 feet; October 8 to 24, 1894 (No. 1751); mountains near Tlapancingo, December 7, 1894 (No. 2081); vicinity of Choapam, altitude 3,800 feet, July 28 to 29, 1894 (No. 864); also by Mr. Pringle along shaded banks, Orizaba, Vera Cruz, February 4, 1895 (No. 5555); and by Mr. Nelson near Plunia, altitude 3,000 to 4,800 feet, March 17, 1895 (No. 2470).

Hydrocotyle prolifera Kellogg, Proc. Cal. Acad. i, 14 (1854).

Collected by Mr. E. W. Nelson at Orizaba, January 28, 1894 (No. 41); also by Mr. C. G. Pringle on moist sands near Vera Cruz, April 23, 1894 (No. 5554).

Micropleura renifolia Lag. Oeios Esp. Emigr. iv, 347 (1825); Obs. Aparas. 15 (1826).

Collected by Mr. C. G. Pringle on the Sierra de San Felipe, September 10, 1894 (No. 4664); also by Mr. E. W. Nelson on the west slope of Mount Zempoaltepec, altitude 7,700 to 8,000 feet, July 5 to 13, 1894 (No. 588); vicinity of Totontepec, altitude 5,500 to 7,000 feet, July 15 to 20, 1894 (No. 746); and near La Parada, altitude 7,500 to 8,500 feet, August 19, 1894 (No. 1019).

Musenopsis Coult. & Rose, Revision Umbelliferae, 123 (1889), enlarged.

Calyx teeth obsolete. Stylopodium wanting or low and depressed: fruit flattened laterally, oblong to ovate, often cordate at base, rounded or slightly beaked, glabrous: carpels terete or slightly flattened laterally, with equal filiform ribs and thin pericarp: oil-tubes indefinite: seed face strongly involute, often inclosing a central cavity.—Low and acaulescent or taller, caulescent, and much branched. Leaves mostly much dissected, either toothed or with long filiform segments. Umbels mostly numerous and small; involucre and involucels generally wanting; flowers always yellow.

This genus differs from *Eulophus* proper in the absence of calyx teeth, in the small or wanting stylopodia, in the flattening of the carpel, in the seed face, the color of the flowers, etc. From *Arracacia* it differs especially in its habit, smaller fruit, more indefinite oil-tubes, etc. We have experienced more difficulty in separating it technically from *Velea* than from either of the above genera, although we consider it as equally distinct. Typical *Velea* is stouter, with broader leaves, strongly toothed

leaflets, and much larger fruit, is always scapose, occasionally has calyx teeth, and its umbels are stouter, with much more numerous rays.

Ever since our study of *Eulophus* and the related genera in 1886-'87 we have felt dissatisfied with Bentham and Hooker's treatment of this group in the *Genera Plantarum*. In the Revision of Umbelliferae we attempted to express our idea of the relationship of the forms found in the United States. This led to the cutting off as a new genus (*Museniopsis*) *E. texana* Benth. & Hook., which had been originally placed by Dr. Gray in a separate section of *Tauschia*, and the combining with *Eulophus americana* the two western species of *Podosciadium* (*P. californica* and *P. bolanderi*) along with two undescribed species (*E. pringlei* and *E. parishii*). This made what we then thought and still think a very natural genus of 5 species. As we then stated, this genus is remarkably well defined, being readily recognized by such external characters as its elongated linear entire leaflets, fascicled tubers, conspicuous involuclers, prominent calyx teeth, conical stylopodium, and long recurved styles. Its nearest alliance is to *Pimpinella*, from which it differs, not only in most of the characters just noted, but also in the concavity of the seed face. The broad concavity of the seed face, as well as its comparative shallowness, is one of the marked characters of this genus, and not only separates it from certain allied genera, but also excludes from it the Mexican species which have been referred to it. These are *E. ternatus* and *E. tenuifolius*, at the time referred to above just described by Dr. Sereno Watson, and *E. peucedanoides* Benth. & Hook.

This last species has also been referred to *Smyrniium*, *Silaus*, and *Cnidium*. Since our Revision was published in 1888, material has come to hand which shows 7 additional Mexican species. A careful study of a very large supply of material has led us to combine the Mexican species of *Eulophus* with our single border species under the name of *Museniopsis*. It is true that *M. texana* is hardly a typical representative of the genus, but is more like an outlying form of a genus whose center of distribution is somewhere in Central Mexico. The species grade easily through *M. ternata* into the taller caulescent Mexican species. *Museniopsis* is much nearer *Arracacia* and *Velva* than *Eulophus*. Dr. Watson¹ thought it could be "separated only by its smaller obsolete ribbed fruit with numerous irregular vittae." The confusion of *Museniopsis* with *Eulophus* is probably due partly at least to the figure of the fruit section of *Eulophus* as originally published in De Candolle.² The seed is there shown as strongly involute, while Dr. Torrey's sketches and our examination of many carpels show a seed with a broad face and but slightly concaved.

The following key will be found useful in determining the species:

- A. *Acaulescent or nearly so; peduncles single, terminal, and elongated; involuclers toothed.*
 - B. *Leaflets ovate, toothed; peduncles 1 to 1.2 dm. long; fruit obtuse.*
 - 1. ***Museniopsis texana*** (Gray) Coult. & Rose, Rev. Umb. 123 (1889); *Tauschia texana* Gray, Pl. Lindh. ii, 211 (1850); *Eulophus texanus* Benth. & Hook. Gen. Pl. i, 882, 885 (1867).
 - BB. *Leaflets filiform; peduncles 3 dm. long; fruit acutish.*
 - 2. ***Museniopsis tenuifolia*** (Watson); *Eulophus tenuifolius* Watson, Proc. Amer. Acad. xxiii, 276 (1888).
 - AA. *More or less caulescent, much branched; peduncles numerous, both terminal and lateral, short; involuclers either wanting or filiform and entire.*
 - C. *Biennials from small globose or spindle-shaped tubers.*
 - D. *Radical leaves with ovate, toothed leaflets; involucre and involuclers present.*
 - 3. ***Museniopsis ægopodioides*** (H. B. K.); ? *Smyrniium ægopodioides* H. B. K. Nov. Gen. et Sp. v, 16 (1821).
- Biennials from fusiform tubers; stems slender, 4 to 12 dm. high, branching above; radical leaves with petioles 3 to 5 cm. long, twice ternate, with ovate toothed leaf-

¹ Proc. Amer. Acad. xxii, 415.

² Memoire Ombelliferes, pl. 2, H, 3.

lets; upper leaves much reduced, often with linear leaflets; peduncles either wanting or short; pedicels 4 to 5 mm. long.

Collected by Mr. C. G. Pringle in pine woods on hills of Pascuaro, State of Michoacan, October 25, 1893 (No. 4620). It was distributed by Mr. Pringle in his 1893 set as *Smyrniium argopodioides*.

Mr. Hemsley in a recent letter states that Seeman No. 2134 belongs here. As he says, it is very doubtful whether this is the true *Smyrniium argopodioides*.

DD. *Radical leaves with linear leaflets; involucre and involucels wanting.*

4. **Museniopsis tuberosa** Coult. & Rose, sp. nov.

Biennials from a small round or spindle-shaped tuber; stems very slender, somewhat zigzag, 3 to 6 dm. high, much branched above; leaves much dissected into linear entire segments, 4 to 10 mm. long; peduncles short, 1.2 to 3.6 cm. long; rays (2 to 6) 12 to 25 mm. long; pedicels 1 to 3 mm. long; fruit oval, 2 mm. long, obtuse.

Collected by Mr. C. G. Pringle on Sierra de San Felipe, altitude 7,500 feet, August 7 and November 17, 1894 (No. 4868); and by Mr. E. W. Nelson in oak woods on the mountain ridge on west side of the Valley of Cuicatlan, altitude 7,500 to 8,000 feet, November 10, 1894 (No. 1900a); from the top of the Sierra Madre near Chilpancingo, State of Guerrero, altitude 9,000 to 10,200 feet, December 24, 1895 (No. 2241).

CC. *Perennials from long slender and sometimes thickened roots.*

E. *Radical leaves with linear elongated leaflets.*

F. *Glaucous; fruit obtuse, with obsolete ribs; lateral umbels often sessile.*

G. *Involucral leaf 1, elongated; fruit smaller and leaflets shorter than in the next.*

5. **Museniopsis ternata** (Watson); *Eulophus ternatus* Watson, Proc. Amer. Acad. xxiii, 276 (1888).

Museniopsis ternata filifolia Coult. & Rose, var. nov.

Much like the type but more slender, with filiform leaflets, longer pedicels, etc.

Collected by Mr. C. G. Pringle in canyons, Sierra Madre, Chihuahua, October 1, 1887 (No. 1519).

This may prove a distinct species. Dr. Watson thought it a possible variety of *E. peucedanoides*, but to us its relationships seem nearer the above. Dr. Watson's herbarium name is continued.

GG. *Leaflets very long; involucre wanting; fruit large for the genus.*

6. **Museniopsis schaffneri** Coult. & Rose, sp. nov.

Roots slender and elongated; stem tall, slender, glabrous, and glaucous; radical leaves twice ternate; leaflets linear, elongated, 10 cm. long or less, with strong medial and intermarginal nerves; rays spreading, slender, 4 to 7.5 cm. long; pedicels slender, 6 to 10 mm. long; involucre and involucels wanting; fruit (immature) broadly ovate, 4 mm. long, cordate at base, capped with low stylopodia.

Collected by Dr. J. G. Schaffner in "rupestris prope San Miguelito," San Luis Potosi, 1876 (No. 5), and in 1879 (No. 550); also by Parry & Palmer from the same State, 1878 (No. 293).

This species has been confused with *Eulophus peucedanoides*, from which it is distinct, differing chiefly in its longer rays and pedicels, the shape and size of fruit, distinct stylopodia, and perhaps in leaflets and habit.

FF. *Glabrous, not glaucous; involucre wanting; no umbels sessile.*

H. *Fruit ovate or oblong, longer than broad, with a short beak and rounded base; ribs thick, filiform.*

7. **Museniopsis peucedanoides** (H. B. K.); *Cnidium peucedanoides* H. B. K. Nov. Gen. et Sp. v, 15 (1821); *Eulophus peucedanoides* Benth. & Hook. Gen. Pl. i, 885 (1867).

Collected from Sierra de San Felipe by Mr. C. G. Pringle, October 13, 1894 (No. 5543); and by Mr. E. W. Nelson, August 20 to 30, 1894 (No. 1190).

HH. *Fruit broadly ovate, broader than long, cordate at base, obtuse; ribs filiform.*

8. *Museniopsis cordata* Coult. & Rose, sp. nov.

Perennials with slender either simple or somewhat branched roots; stems slender, 5 to 7.5 dm. high, nearly simple or more or less branched; radical leaves with slender petioles, 7.5 to 12.5 cm. long, 3 to 4 times ternately parted; leaflets linear and entire, somewhat wedge-shaped and 3-lobed, 3.6 cm. or less long; upper leaves more simple; peduncles rather short, usually 5 to 10 cm. long; rays of the umbel 4 to 6, nearly equal, 2.5 to 6 cm. long; pedicels 4 to 6 mm. long; involucre and involucels wanting; fruit ovate, cordate at base, 3 mm. or less high, broader than high, with a low stylopodium; ribs filiform, indistinct.

Collected by Mr. C. G. Pringle in dry pine woods, Sierra de San Felipe, altitude 9,300 feet, August 28, 1894 (No. 5548), Sierra de Reyes, altitude 8,000 feet, November 7, 1894 (No. 5549), also by Mr. E. W. Nelson, in mountain range west side of Cuicatlan, altitude 6,500 to 8,000 feet, November 10, 1894 (No. 1900).

EE. *Radical leaves with broader, shorter, more or less toothed leaflets.*

I. *Umbels all peduncled; leaflets glabrous; involucels present.*

9. *Museniopsis dissecta* Coult. & Rose, sp. nov.

Perennials from thick roots; stems 3 to 6 dm. high, branching; leaves ternately dissected; leaflets ovate and cleft; pedicels 5 to 7.5 cm. long; rays 3 to 6, 12 to 30 mm. long; involucre wanting or of a single linear leaf; involucels of a few linear bracts; fruit oblong-ovate, 4 mm. long.

Collected by Mr. E. W. Nelson from the mountains near Tlapaneingo, altitude 6,000 to 8,000 feet, December 7, 1894 (Nos. 2062, 2091a), and from the top of the Sierra Madre near Chilpaneingo, State of Guerrero, December 24, 1894 (No. 2242).

II. *Lateral umbels often sessile; veins of the leaflets scabrous; involucels wanting.*

K. *Leaflets elongated, linear, nearly entire.*

10. *Museniopsis scabrella* Coult. & Rose, sp. nov.

Perennials with slender roots; stems slender, 6 to 10.5 dm. high, somewhat branched above; radical leaves with slender petioles, 10 to 17.5 cm. long, 2 to 3 times ternate; leaflets linear and entire, 5 to 7.5 cm. long, or broader and shorter, more or less toothed, all more or less scabrous on the veins, margins, and petioles; upper leaves more simple; peduncle rather short or wanting; rays 3 or 4, rather variable in length, but nearly equal in the same umbel, 2.5 to 7.5 cm. long; pedicels 4 mm. long; involucre and involucels wanting; fruit ovate, 3 mm. long; ribs filiform, indistinct.

Collected by Mr. C. G. Pringle on the Sierra de San Felipe, altitude 7,000 feet, September 10, 1894 (No. 5550), and by Mr. E. W. Nelson in oak woods on the mountain ridge on west side of the Valley of Cuicatlan, altitude 7,500 to 8,000 feet, November 10, 1894 (No. 1900).

KK. *Leaflets ovate, serrate.*

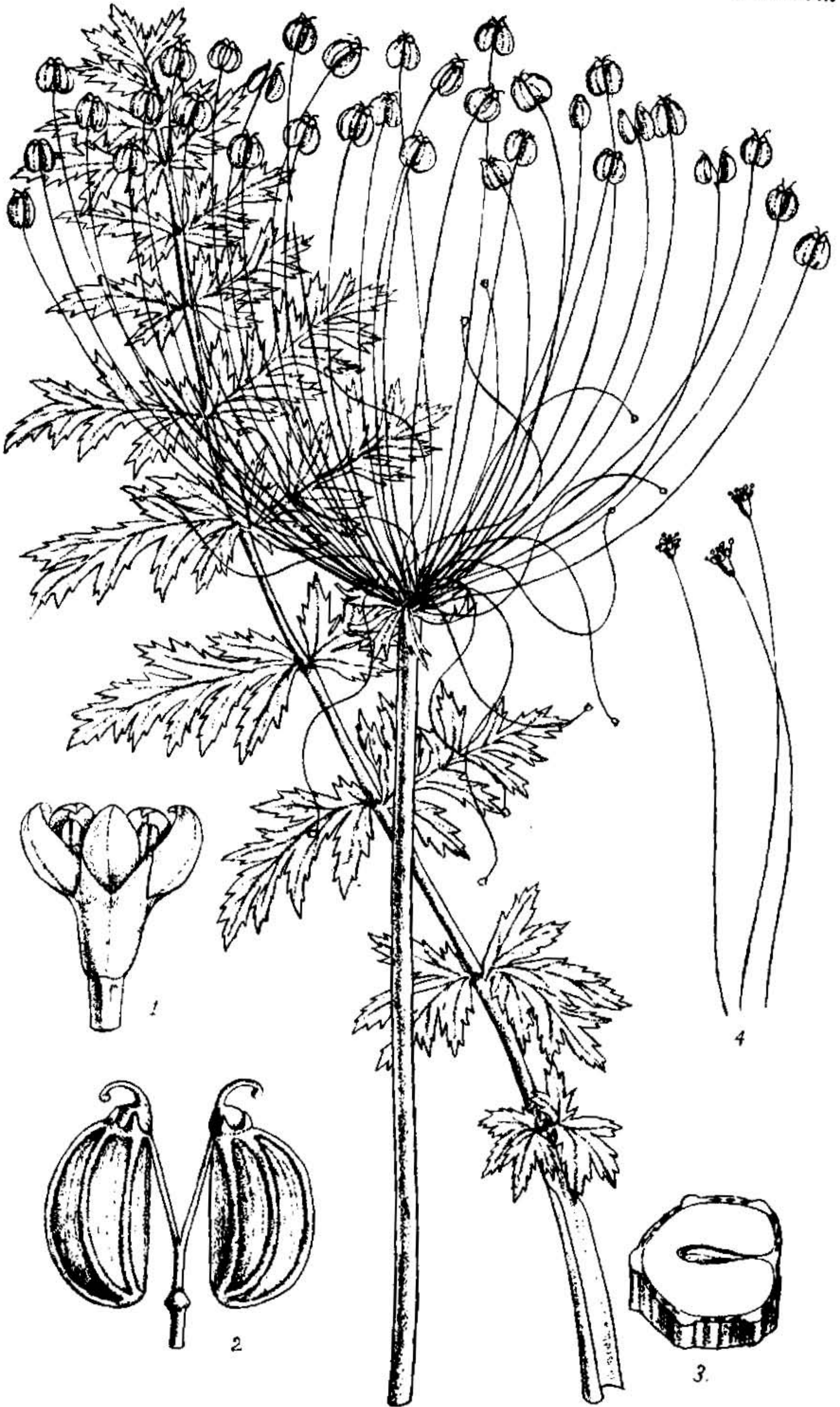
11. *Museniopsis serrata* Coult. & Rose, sp. nov.

Perennials from slender roots; radical and lower stem leaves twice ternate; leaflets ovate, acute, serrate; upper stem leaves reduced, with filiform leaflets; peduncles short; rays 5, 18 to 35 mm. long; fruit ovate, cordate at base.

Collected by Mr. C. G. Pringle from the Cuesta de San Juan del Estado, altitude 7,000 feet, August 21, and from the continental divide near Las Sedas, altitude 6,300 feet, November 7, 1894 (No. 5542); also by E. W. Nelson, near Las Sedas, October 3, 1894 (No. 1539).

Musineon alpinum Coult. & Rose, Bot. Gaz. xx, 260 (1895).

Acaulescent, in dense mats, from a thick branching caudex, 5 to 10 cm. high, glabrous throughout, or nearly so; leaves once to twice pinnate, somewhat shorter than the peduncles, the primary segments ovate and more or less lobed or pinnately parted, and usually with a pubescent ring on the rachis at the junction; peduncles thick, bearing a few-flowered 4- to 6-rayed umbel, with no involucre, the involucels of few linear bractlets longer than pedicels; rays unequal, 6 to 12 mm. long; pedicels 2 to 4 mm. long; flowers not seen; fruit glabrous, oblong-ovate, with notched



NEOGOEZIA GRACILIPES Hemsley.

base and blunt apex, 3 mm. long, with filiform ribs and long, flat (strap-shaped) styles.

Cold summit slopes, Nevada de Toluca, State of Mexico, altitude 14,000 feet, September 2, 1892. Pringle's No. 4247 of 1892.

This species is referred to *Musineon*, although it is widely separated geographically from the other species, which belong to the northern plain region. Its habit and general characters are those of the genus as already known, but the obsolete calyx teeth, two-parted carpophore, and peculiar styles, as well as the wide geographic separation, suggest a possible generic separation if supported by further Mexican material. The fact that it occupies the high mountain region of central Mexico makes its claim to be congeneric with the northern forms more reasonable.

***Neogoezia* Hemsley, Kew Bull. 1894, 354 (1894).**

The translation of Mr. Hemsley's description, and his remarks concerning the establishment of the genus, are as follows: Calyx teeth prominent, colored. Petals broad, entire. Disk depressed or subconical. Fruit didymous, heart-shaped, scarcely compressed laterally, sulcate at the commissure. Carpels almost terete, gibbous at base, striate with the superficial oil tubes: primary ribs almost obsolete: oil-tubes 3 in the intervals, 4 to 6 on the commissural side, all very slender: carpophore entire. Seed subterete, deeply sulcate.—Glabrous Mexican herbs, perennial or biennial, scapose, with tuberous-fascicled roots. Leaves pinnately dissected, all radical. Umbels simple, solitary on a slender scape, with filiform pedicels. Involucral bracts numerous, linear. Flowers polygamous or unisexual; sepals purplish; petals deep yellow or lemon-yellow.

“Dedicated to Dr. Edmond Goeze, inspector of the botanic garden at Greifswald, Pomerania, and formerly a fellow-student of the writer at Kew. The affinity of the genus is not obvious, as it is one of the very few genera, outside of the *Heterosciadiceae*, having simple umbels. In this character it agrees with *Oreomyrrhis*, in which two of the species were provisionally placed; but, as suggested by Mr. Rose, the characters of the fruit are rather those of the *Smyrniaceae*, and similar to those of the American genus *Arracacia*.

“Through the courtesy of Mr. J. N. Rose, Assistant Botanist in the United States Department of Agriculture at Washington, we are able to establish this very distinct and elegant genus of Mexican Umbelliferae. Two species were collected by Hartweg upward of fifty years ago, but only flowering specimens were obtained. Since then, so far as our knowledge goes, no other collector has met with any member of this genus until this year; and now Mr. C. G. Pringle has discovered, in the mountains above Oaxaca, what we have described as a third species. His specimens include almost ripe fruit, thus affording material for founding the genus. Hartweg's two species were provisionally published under the genus *Oreomyrrhis*, and are here transferred to *Neogoezia*.”

***Neogoezia gracilipes* Hemsley, Kew Bull. 1894, 355 (1894); *Oreomyrrhis gracilipes* Hemsley, Diag. Pl. Nov. pt. 1, 16 (1880).**

PLATE VII.¹

Stems from a cluster of deep-seated tuberous roots, as in *N. minor*, 7.5 to 15 dm. high; petiole above the vaginate sheath very variable in length, sometimes nearly wanting, often 7.5 cm. long; leaflets generally close together along the rachis, sometimes much separated, occasionally 7.5 cm. or more; bractlets of the involuclers rarely short and entire (as figured), but generally all or nearly all 3- to 5-toothed and 12 to 18 mm. long; pedicels very numerous, in fruit 3.5 to 7.5 cm. long; fruit rather variable, 4 to 6 mm. long, nearly orbicular to ovate, slightly cordate at base, sometimes beaked.

¹Through the kindness of the Bentham Trustees and Mr. W. Botting Hemsley of Kew, we have received advance sheets of the two plates of *Neogoezia* and now reproduce them almost simultaneously with their appearance in *Hooker's Icones Plantarum*.

Collected by Mr. C. G. Pringle on the mountain sides of Santa Inez del Monte, 8,500 feet altitude, October 5, 1894 (No. 4997); also by Mr. E. W. Nelson from the foothills on the west side of the Valley of Oaxaca, at between 5,500 and 7,500 feet altitude, in the lower Sonoran zone, September 20, 1894 (No. 1118), and on mountain sides near Tlapancingo, 6,000 to 8,000 feet altitude, in upper Sonoran zone, December 7, 1894 (No. 2088).

This species was first collected by Galeotti some fifty years ago on the Cordillera of Oaxaca, and has not been collected since until obtained by Messrs. Pringle and Nelson. Mr. Pringle, in a letter of March 19, 1895, to Mr. J. N. Rose, writes as follows: "As respects *Neogoezia*, No. 4997, it was found first by Mr. Nelson, then by myself more widely scattered, on a range of mountains 25 miles west of Oaxaca, which range has an altitude of 9,000 feet and may be regarded as the margin of the mountainous tract called the Mixteca Alta, over which runs in a zigzag course the continental divide. The plant is abundant on somewhat dry ridges and slopes of these mountains, at an elevation of about 8,000 feet, among a sparse growth of oaks and pines. Frankly it is my opinion that there is but one species there, though a variable one, as the conditions, fertility and humidity of soil and exposure to open sunlight, vary. The specimens were all gathered on a tract 2 or 3 miles in extent; the fruits which lie in the sheets with flowers (they are scarcely mature enough) were gathered at the same time with the flowers."

EXPLANATION OF PLATE.—Fig. 1, flower; 2, fruit; 3, cross section of carpel; 4, pedicel and flower. Figs. 1, 2, and 3, enlarged; 4, natural size.

Neogoezia minor Hemsley, Kew Bull. 1894, 355 (1894).

PLATE VIII.

Collected by Mr. C. G. Pringle on mountain sides about Oaxaca, Sierra de San Felipe, at an altitude of 9,000 to 10,000 feet, in flower June 29, and at an altitude of 10,500 feet, in fruit August 25, 1894 (No. 4725); also by Mr. E. W. Nelson on Sierra de San Felipe, August 20 to 30, 1894 (No. 1418a).

Mr. C. G. Pringle sends this interesting note regarding the species: "It presents a rosette of leaves which lie close upon the surface of the soil (black humus) in little meadows and flats along the creeks of the Sierra de San Felipe, 10,000 feet elevation. This mountain chain is the continental divide, at whose base on the Pacific side, some 10 miles distant from and 5,000 feet below its summit, is located the city of Oaxaca. The flowering peduncles of this plant at anthesis rise 1 to 4 or 5 inches above the leaves, but in fruit some of them recline on the ground, while others rise quite erect."

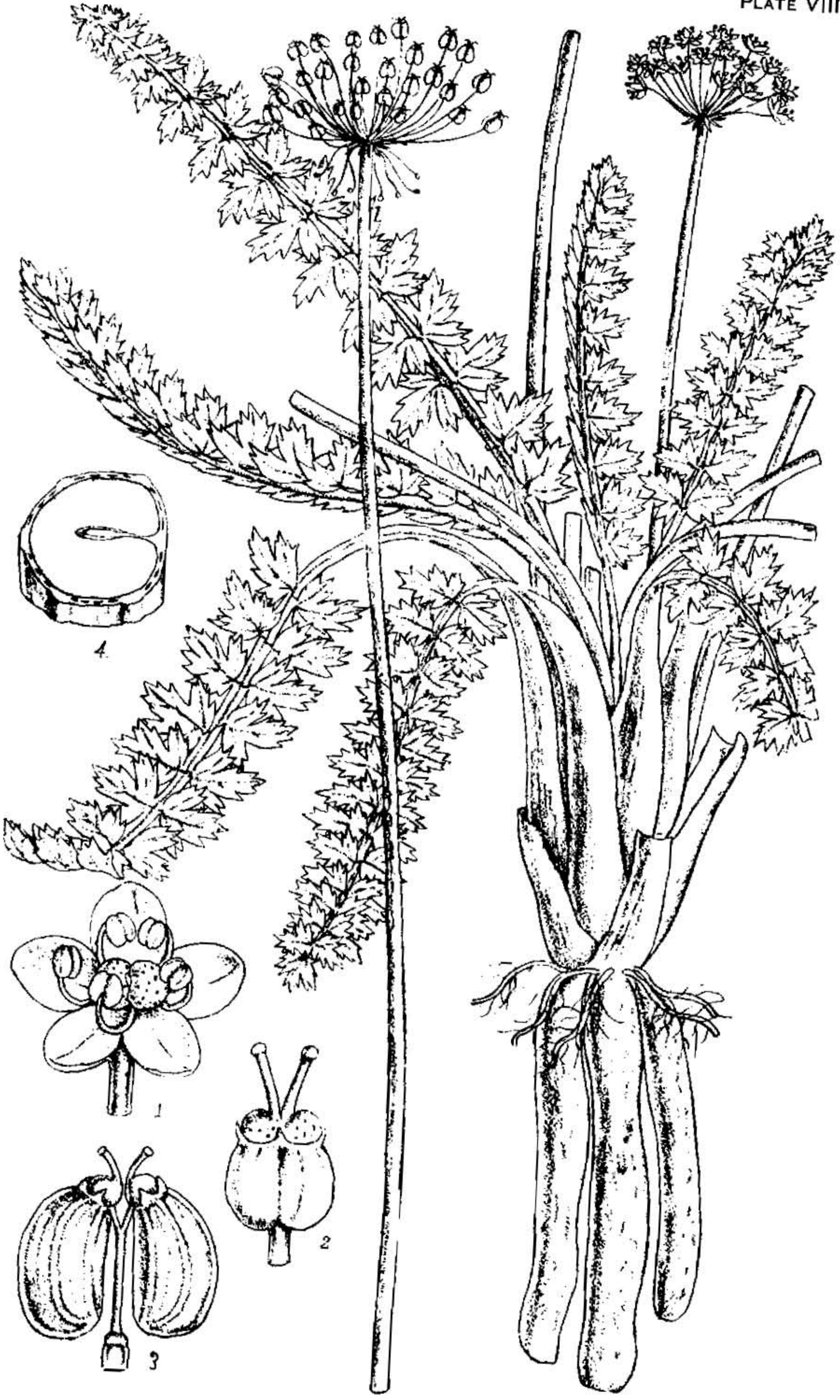
EXPLANATION OF PLATE.—Fig. 1, flower; 2, ovary; 3, fruit; 4, cross section of carpel. Figs. 1, 2 and 3, enlarged.

Neonelsonia Coult. & Rose, gen. nov. (Smyrniacæ.)

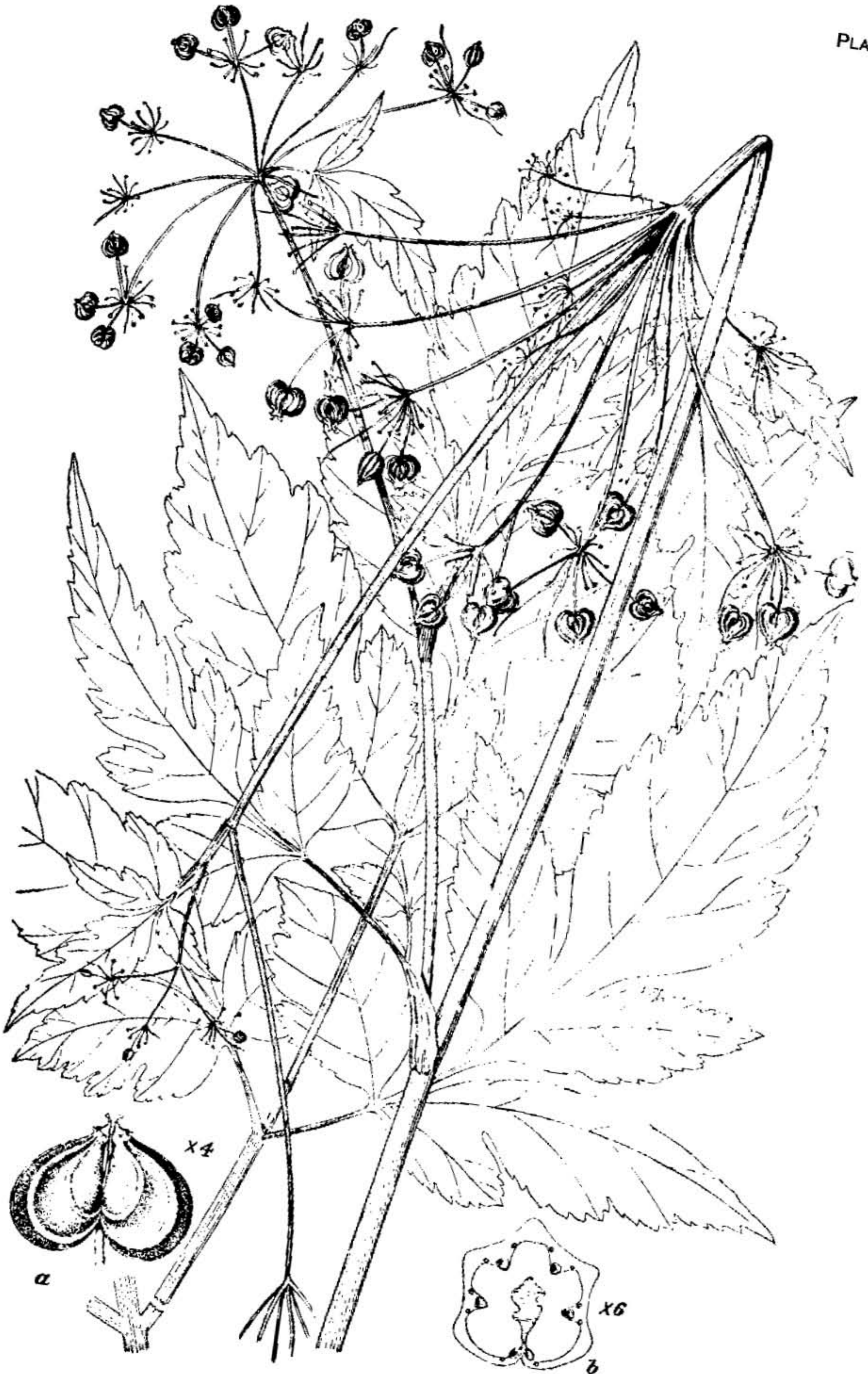
Calyx teeth minute. Petals broader than long, with short inflexed tip. Fruit broadly ovate-cordate, didymous and beaked, glabrous, with 2-parted carpophore and low conical stylopodia bearing short recurved styles. Carpel globose-ovate, beaked and incurved, the entire surface divided among five more or less wrinkled ridges which bear filiform ribs on the back. Oil-tubes large and solitary in the intervals of the ridges, with a small accessory one on each side on the slope of the adjoining ridge, 2 to 4 on the very narrow commissural side. Seed section nearly circular in outline, strongly indented beneath the large oil-tubes, with a deep and narrow sulcus which enlarges more or less into a central cavity.—Low caulescent perennials, with ternately compound leaves, no involucre, involucrels of elongated filiform bractlets, and greenish-yellow flowers.

This is nearest *Smyrniacium* and *Arracacia*, but its peculiarities are so marked that it does not seem to be closely allied to any genus.

Named for Mr. E. W. Nelson, the ornithologist, who has also been an indofatigable collector of Mexican plants.



NEOGOEZIA MINOR Hemsley.



NEONELSONIA OVATA Coult. & Rose.



OSMORRHIZA MEXICANA Griseb.

Neonelsonia ovata Coult. & Rose, sp. nov.

PLATE IX.

Stems 3 to 9 dm. high, glabrous throughout; root leaves large, 3 dm. or more long, 3-ternate; leaflets often 3-lobed, ovate, acute or acuminate, rounded at base or the terminal one with cuneate base, crenate with apiculate teeth, 3.5 to 7.5 cm. long; stem leaves more simple; umbels long-peduncled or sessile; rays 3.5 to 10 cm. long; pedicels 12 to 18 mm. long; bractlets of the involuclcs 18 to 50 mm. long; fruit 4 mm. high, 7 mm. broad.

Collected by Mr. E. W. Nelson 18 miles southwest of the city of Oaxaca, altitude 7,500 to 9,500 feet, September 10 to 20, 1894 (No. 1385); also by Mr. C. G. Pringle in deep moist woods of the Sierra de Clavellinas, 9,000 feet altitude, October 18, 1894 (No. 6007).

EXPLANATION OF PLATE.—Fig. *a*, side view of the fruit, enlarged 4 diameters; *b*, cross section of carpel, enlarged 6 diameters.

Ceananthe pringlei Coult. & Rose, sp. nov.

Stems often creeping and rooting at the joints, glabrous, with upright stems 6 to 9 dm. high; leaves twice pinnate, somewhat triangular in outline; leaflets ovate, acute, sharply serrate with cuspidate teeth, often with 1 or 2 lateral lobes, 12 to 25 mm. long; peduncles lateral and terminal, 5 to 7.5 cm. long; rays of umbel 15 to 20, nearly equal, 2.5 cm. long or less; pedicels 3 mm. long; involucre wanting; involuclcs of several linear bracts oblong, 4 mm. long, with thick corky ribs.

Collected by Mr. C. G. Pringle in cold bogs of the Sierra de Clavellinas, altitude 9,000 feet, October 25, 1894 (No. 6009). Most resembling our United States species, but the leaves have a more dissected appearance, the leaflets are more numerous, acute, and sharply cuspidate-serrate, the rays shorter, the fruit not in such dense umbels, more corky, making it much larger in cross section.

This is the first species of *Ceananthe* described from Mexico, although Mr. Hemsley reports (in the *Biologia Centrali-Americana*) an unnamed species¹ from near Zacoalco.

Osmorrhiza mexicana Grisebach, Goett. Abh. xxiv, 147 (1879).

PLATE X.

Stems rather slender, 6 to 9 dm. high, somewhat hairy; leaves more finely dissected than in *O. nuda*; umbels with few spreading rays; involucre and involuclcs of linear bracts; style and stylopodium minute, very unlike those of *O. brevistylis*. Rather common in the mountains of Mexico. Generally referred to *O. brevistylis* by writers on Mexican plants, but more resembling *O. nuda*.

Collected by Mr. C. G. Pringle on the Sierra de San Felipe, altitude 10,000 feet, September 19 and in November, 1894 (No. 5547); also by Mr. E. W. Nelson in the Sierra de Clavellinas, September 10 to 20, 1894 (No. 1383). The following specimens are also in the National Herbarium: Mr. Henry E. Seaton's, from Mount Orizaba, August 6, 1891 (No. 195); Mr. C. G. Pringle's, from the State of Mexico, September 11, 1892 (No. 5208); and M. Bourgeau's, from the forest of the Desierto Viejo, 1865-66 (No. 781).

A western Cordilleran type seems to extend through North and South America, which is *O. nuda* in the United States, *O. mexicana* in Mexico, and *O. berterii* in South America.

We had described and figured this species as new, under the above name, but learned before publishing that Grisebach had anticipated us in both description and name, and had published the species in his flora of the Argentine Republic, as cited above. He includes in it the already described species from South America, which, however, seems to be distinct; but as he evidently takes Schaffner's Mexican plant as his type, his name should be retained as applying to the Mexican species.

EXPLANATION OF PLATE.—Fig. *a*, fruit, enlarged 3 diameters; *b*, cross section of carpel, enlarged 9 diameters.

¹Mr. Hemsley now considers his plant to be *Arracacia multifida* Watson.

Ottoa œnanthoides H. B. K. Nov. Gen. et Sp. v, 20 t. 423 (1821).

Stems rather variable in height, 2 to 4.5 dm. high; leaves fistulose, nodose; rays variable in length; flowers white; fruit on pedicels 5 to 8 mm. long, or the central one sessile or nearly so, ovate to ovate-oblong, 5 to 6 mm. long; styles long; stylopodia conical; ribs filiform; oil-tubes solitary in the intervals; seed face involute, inclosing a small cavity.

Collected by Mr. E. W. Nelson on northwest side of the summit of Mount Zempoaltepec, altitude 10,000 to 11,000 feet, June 9, 1894 (No. 643); altitude 8,000 to 10,000 feet, July 10, 1894 (No. 661); Reyes, altitude 7,500 to 10,000 feet, October 17, 1894 (No. 1734); summit of Sierra de San Felipe, altitude 10,500 feet, August 20 to 30, 1894 (No. 1119); also by Mr. C. G. Pringle, May 22 and August 4, 1894 (No. 4644).

This hitherto very rare plant has been collected in great abundance by these two diligent collectors. It has long been a desideratum in American herbaria, and until recently sent in by Capt. John Donnell Smith has been unrepresented in the National Herbarium. This monotypic genus was first collected in the Andes of South America, and has since been found on the summits of the highest mountains in Mexico and Central America. The plant was originally described by Humboldt, Bonpland & Kunth, but apparently without mature fruit. The illustrations of fruit and carpel are very unsatisfactory, as they give a very erroneous idea of the seed, ribs, and stylopodium. The genus was originally referred near to *Enanthe*, and by Bentham & Hooker was placed in the subtribe *Scandicinea*. Its relationships are much nearer *Arracacia*, from which it scarcely differs, except in its peculiar leaves and white flowers.

Prionosciadium megacarpum Coult. & Rose, sp. nov.

Stem 2.4 to 4.5 meters high; radical leaves (2 or 3) 9 to 12 dm. long and nearly as broad, thrice ternate; leaflets large, 15 to 20 cm. long, ovate, acute, crenately toothed with a small apiculation, paler and pubescent beneath; upper leaves opposite, twice ternate; leaflets lanceolate, acute, cuneate at base, hispidulous above, villous beneath; peduncles verticillate; involucrel bractlets several, linear, scarious; flowers white; fruit large; carpels oblong, 14 to 20 mm. long, obtuse, notched at base, with narrow body and broad thin wings; dorsal and intermediate ribs slightly winged; oil-tubes 3 in the interval, the central one much the larger, 6 on the commissural side; seed but slightly flattened dorsally, with narrow sulcus opening into a large central cavity, strongly indented beneath the oil-tubes.

Collected by Mr. C. G. Pringle on Sierra de San Felipe, altitude 7,500 feet, June 1 and October 10, 1894 (No. 4688).

Here also should be referred Andrieux No. 352, fide Hemsley in lit.

Prionosciadium linearifolium (Watson) Coult. & Rose; *Cicuta linearifolia* Watson, Proc. Amer. Acad. xxii, 415 (1887); *P. watsoni*, Watson in part, Proc. Amer. Acad. xxv, 150 (1890).

Dr. Watson, in publishing our species of this genus which bears his name, referred to it not only *Peucedanum mexicanum*, which was our type, but also *Cicuta linearifolia*. If the two species are the same, present usage would require the substitution of the name *linearifolium*. A careful study of our material shows evidence of two fairly well-marked species, one of which is found east and the other west of the Sierra Madre.

The eastern species, which is based upon *Peucedanum mexicanum* Watson, may very properly bear the name of Dr. Watson as we had intended, with the following synonymy: *Prionosciadium watsoni* Coult. & Rose; Watson, Proc. Amer. Acad. xxv, 150 (1890), in part; *Peucedanum mexicanum* Watson, Proc. Amer. Acad. xvii, 361 (1882).

Prionosciadium sp.

Herb 3 to 5 feet high. Only seeds obtained. Collected by Mr. E. W. Nelson on the road between Tlapa and Tlaliscatilla, Guerrero, altitude 3,900 to 4,500 feet, December 5, 1894 (No. 2051)

Rhodosciadium dissectum Coult. & Rose, sp. nov.

Stems from fusiform roots, 3.5 to 7.5 dm. high; leaves ternately dissected, ultimate segments linear, entire or few-toothed, glabrous above, scabrous beneath on the veins, as also the petioles and rachis; involucre wanting; involucels few, linear, a little longer than the pedicels; rays of the umbel few (3 to 6), short (12 to 18 mm. long); flowers purple; wings of the fruit rather unequal, often very narrow or becoming as broad as body.

Collected by Mr. C. G. Pringle on calcareous hills, Las Sedas, altitude 6,000 feet, August 2, 1894 (No. 4764).

Rhodosciadium glaucum Coult. & Rose, sp. nov.

Stem from somewhat tuberous roots, 9 dm. high, purplish and somewhat glaucous, glabrous throughout, or in some species more or less scabrous; radical leaves sometimes on petioles 3 dm. or more long, with leaflets often 7.5 to 10 cm. long; stem leaves twice or thrice ternate; leaflets lanceolate, sharply serrate, acuminate, 5 cm. or less long; upper leaves much reduced, the inflated scarious petiole appearing conspicuously; inflorescence much branched, irregular, peduncle either wanting or more or less elongated; flowers yellow; involucre of broad scarious bracts tipped with linear leaf-like appendages; involucel bractlets filiform, longer than the pedicels; rays somewhat unequal, 2 to 3.7 cm. long; pedicels 6 mm. long; fruit 6 to 8 mm. long.

Collected by Mr. C. G. Pringle on foothills above Oaxaca, 7,000 feet altitude, June 20, 1894 (No. 5539); hills above Sierra de San Felipe, August 23, 1894 (No. 4823), and Salome Canyon, altitude 4,000 feet, November 2, 1894 (No. 5541); also by Mr. E. W. Nelson, near Reyes, altitude 6,000 to 7,500 feet, October 17, 1894 (No. 1711); Valley of Oaxaca, altitude 6,000 feet, September 20, 1894 (No. 1431); also by Rev. Lucius C. Smith, at the Rancho de Calderon, 5,000 feet altitude, September 10, 1894 (No. 255).

Rhodosciadium glaucum lineare Coult. & Rose, var. nov.

Like the type, but with more simple leaves, the leaflets linear with remote teeth. It appears to be connected with the type through certain forms of Mr. Pringle's No. 4823. Collected by Mr. E. W. Nelson in the Valley of Oaxaca, at the base of Sierra de San Felipe, September 1, 1894 (Nos. 1189 and 1193), and a single specimen obtained by Mr. C. G. Pringle, June 20, 1894, from the mountains of Oaxaca, altitude 7,000 feet, with No. 5539.

Spananthe paniculata Jacq. Coll. iii, 247 (1789).

Collected by Mr. E. W. Nelson in the vicinity of Choapam, 3,800 to 4,500 feet altitude, July 28 and 29, 1894 (No. 905); and between Tlapa and Ayusinapa, Guerrero, 4,500 to 5,700 feet altitude, December 13, 1894 (No. 2101).

Tauschia nudicaulis Schlecht. Linnaea, ix, 608 (1834).

Low caulescent or acaulescent, much branched at base from a long slender tap-root; radical leaves forming a rosette at the base of the stem, once or twice pinnate; leaflets 6 to 18 mm. long, strongly toothed or cleft; peduncles slender, 2.5 cm. or less long; involucre wanting; bractlets of the involucels several, rather conspicuous, 3-cleft and the lobes often toothed or cleft; pedicels short, 2 mm. long; fruit oblong, obtuse, 4 mm. long; styles long, stylopodia wanting; oil-tubes solitary in the intervals, occasionally a shorter accessory one, 4 on the commissural side; seed strongly involute, with closed sinus and inclosing a central cavity.

Collected by Mr. C. G. Pringle in the State of Mexico on Sierra de las Cruces, altitude 10,000 feet, August 23, 1893 (No. 5210), and July 25, 1894 (No. 4741).

The genus *Tauschia*, based on the above species, is very near certain forms of *Arracacia*, especially *A. decumbens*, *A. edulis*, and *A. mariana*. If the genus is retained these species must undoubtedly be referred to it.

Tauschia coulteri Gray, as shown above is a good *Arracacia*, while *T. texana* is the type of the genus *Museniopsis*.