

The first who collected *Centaurodendron* was not JOHOW, but BERTERO; still, B. did not discover it. Under the name of *Dendroseris micrantha*, BERTERO no. 1602! (Herb. Kew) there is one sheet with pieces of an old inflorescence of the latter together with a leaf of *Centaurodendron*.

JOHOW discovered this in July, 1892, and found it again in June, 1895; to judge from a specimen in his herbarium it was also gathered by SÖHRENS, probably in April, 1895, on the same occasion when S. found *Robinsonia thurifera*, for it lies together with this under the same name. I rediscovered it in August, 1908, and found the old inflorescence, just as JOHOW did, but there was no trace of new ones. From this I concluded that it flowers late in the summer or even in the autumn, and I expected to get flowers this time, but was cruelly deceived. For all I could do was to state that in certain years not a single specimen produces flowers, and that the year 1916—17 was one of them.

Area of distribution: Endemic in Masatierra; monotypic.

Dendroseris D. Don.

The type of the genus is *D. macrophylla* D. Don, Phil. Mag. XI (1832) 388, collected in Masafuera by CUMING (Herb. Kew!). One year later DECAISNE, in Arch. de Bot. I (1833) 513, described the genus *Rea* Bert. ms., with the following species: *R. macrantha* Bert. et Dcne (Masatierra), *Berteriana* Dcne (Masatierra), *pinnata* Bert. et Dcne (Masatierra), *neriifolia* Dcne (Masatierra), *micrantha* Bert. et Dcne (Masatierra), *marginata* Bert. et Dcne (Masatierra: Portezuelo), *mollis* Bert. et Dcne (Masatierra: Portezuelo). In Comp. Bot. Mag. I. 32 HOOKER and ARNOTT reduced *Rea* to *Dendroseris*, listing the following species: *D. macrophylla* (with *R. macrantha* as syn.), *Berteriana*, *pinnata*, *neriifolia*, *micrantha*, *marginata* and *mollis*.

JOHOW, Estud., reduced these seven species to four, declaring *D. Berteriana* identical with *pinnata* and *marginata* with *macrophylla* and rejecting *D. mollis* altogether. Of this, only the leaves, described as »subincano-velutina» — glabrous in all the others — are known. There is no specimen in Kew, nor in Paris, and I have not been able to discover the type. JOHOW guessed that a stout specimen of *Gnaphalium citrinum* (= cheiranthifolium) or some other similar plant was mistaken for *Dendroseris*. This is hardly probable. In the locality given, Portezuelo, nothing like it is found, unless a young *Robinsonia* or *Rhetinodendron* was mistaken for a *Dendroseris*. With regard to BERTERO's ability as an observer, this is difficult to believe.

The treatment of *Dendroseris* in JOHOW's flora is not quite satisfactory; still, he is not to blame. He had no opportunity to see BERTERO's types, his own material was scarce; further, when HOOKER and ARNOTT reduced *Rea macrantha* to *D. macrophylla* they indicated the wrong course later followed by GAY and JOHOW. HEMSLEY pointed out the validity of *D. marginata*, but JOHOW brought this to *macrophylla*. He was equally critical against his own discoveries, for the peculiar *micrantha* from the coast rocks was only with hesitation classified even as a variety, v. *pruinata*. In the case of *D. Berteriana*,

inflorescence is rather large, more condensed, with numerous heads; these are smaller than in the former and the involucre much more urceolate. The open head in full bloom measures 3,5 cm across; it only contains about 50 florets. The corolla attains a length of 40—42 mm; the whitish tube is soft papillose in the middle part, the deep orange coloured ligule is 3—3,5 mm across. Anthers dark lilac brown with tails considerably longer than the gland of the filament. Style yellowish white below, upwards covered with brown papillae, also on the back and sides of the branches, while their upper surface is clothed with low, light yellow stigma papillae. Branches of the style 4,5 mm long. Achenes larger than in any other species, 7 or even 8 mm, brown, thick, with longitudinal furrows; marginal ones curved with distinct lateral wings and a ventral keel, the others with thick dorsal and ventral wings. Embryo very large, 5—6 mm long, with entire, orbicular cotyledons. Pappus turning dark rufous with age.

Area of distribution: Endemic in Masatierra.

*136. *D. litoralis* nov. spec. — Syn. *D. macrophylla* Joh. ex p. — Plate 19; plate 20, fig. 12; text fig. 37 k—l, p.

Arbuscula 1,5—2 m alta habitu praecedentis sed truncus primarius crassior. Folia ad apicem ramorum pauca dense rosulata; lamina obscure viridis subglaucescens subtus pallidior, coriacea-carnosula, valde nervosa nervis crassis albidis, late ovata, obtusa, cordata, margine laevi ± undulato, ad 25 cm longa et 18 cm lata; petiolus sectione triangularis crassus inferne saltem canaliculatus et marginatus, ad 12 cm longus. Inflorescentia terminalis late paniculata multiceps, foliosa foliis sessilibus amplexicaulibus. Pedunculi 2—4 cm longi. Capitula magna, florida ad 5 cm diam. Involucrum campanato-urceolatum, squamais externis viridi-glaucis ovato-triangularis acutis, interioribus linearibus subhyalinis penicillatis. Receptaculum fibrillis laceratis usque ad 1 cm longis munitum. Flores numerosi certe ad 100; corolla ad 35 mm longa, tubo angusto albido basi excepta molliter papilloso, ligula crocea 3—3,5 mm lata stylo aequilonga vel brevior. Antherae dilute flavae, caudae glandula paulo longiores. Stylus flavescens viridi-papillosus, ramis ad 4 mm longis. Achaenia sordide straminea, illa florum marginalium lateribus alatis ventroque carinato, cetera tenuia lateraliter valde compressa, 5—6 mm longa, basi valde angusta, sat late alata, alis dense ac longitudinaliter striatis. Embryo 3,5—4 mm longus, cotyledonibus integris suborbiculatis radícula paulo longioribus. Pappus sordide stramineus.

Morro Viñillo, a small rock off the south coast of Masatierra (P. ARREDONDO a. o.); cultivated specimens, raised from seeds gathered in Viñillo seen in some of the gardens in Masatierra (plate 19).

Santa Clara: Crevices in the coast cliffs of the main island, and on Morro de los Alelías (fl.-fr. ²⁶/₁ 17, no. 342). Also observed by JOHOW.

Very near *D. marginata*, but distinct. The leaves are thicker, with smooth edge, the heads larger with twice as many flowers, the anthers and style yellow, the tails of the anthers shorter. The achenes are very different and the embryo considerably smaller. These achenes are mature, for I have raised numerous specimens from the portion collected by me in Santa Clara as well as from others of absolutely identical appearance gathered in the garden of ARREDONDO, who introduced the species from Morro Viñillo. My plants are all of the same

type and agree perfectly well with the herbarium specimens as to the leaves. They are 3—4 years old but have not yet flowered.

Area of distribution: Endemic in Santa Clara and Morro Viñillo.

137. **D. pinnata** (Bert. et Dcne) Hook. et Arn. — JOHOW, Estud. 71.

Masatierra: On the higher ridges, at the limit of the forest, among shrubs and small trees, not uncommon. — Between Q. Laura and Q. de la Piedra Agujereada, c. 600 m, large trees; El Pangal, west branch, c. 400 m, and on the narrow crest above Pangal, c. 800 m; north face of Co Damajuana, 500—530 m; V. Colonial, C. Central (JOHOW), solitary in the forest down to 350 m; Portezuelo de Villagra (JOHOW), scattered on both sides, 5—600 m, one specimen (no. 1235) growing on *Blechnum cycadifolium*; C. Salsipuedes (JOHOW), 600—750 m, scattered in the shrubberies (beg. fl. $\frac{8}{12}$ 16, no. 79 — one single tree, all others sterile); Q. de los Helechos, on *Dicksonia*; between Q. Salsipuedes and Pto Ingles; Pto Ingles, central ridge c. 470 m.

var. **insignis** Bert. ms., Johow. — Syn. *Rea Berteriana* Dcne. — **Masatierra:** Q. de la Piedra Agujereada, in wet forest c. 600 m; in the gap between Damajuana and Yunque, c. 580 m, in the humid forest, no. 164 (BERTERO no. 1505! [type] labelled »El Yunque Majo 1830«; the Kew sheet consists of two leaves and one [complete??] inflorescence, the latter very small).

Regarding *D. Berteriana* (*insignis*), the material collected hitherto is very scarce. BERTERO alone has found the flowers, and very late in the season (May). The very few plants seen by us suggested a *pinnata*-form of extreme shade and moisture. A seedling, quite like that of typical *pinnata*, was found with them. The primary leaves are simple but denticulate and reniform.

Area of distribution: Endemic in Masatierra.

*138. **D. regia** nov. spec. — Plate 17, fig. 2; text fig. 38.

Phoenicoseris *D. pinnatae* affinis. Truncus simplex rectus ad 180 cm altus et 13 cm diam. visus, cicatricibus foliorum manifeste notatus, apice rosulam giganteam foliorum circ. 30 cm altam et 1 m latam gerens. Folia plantae juvenilis maxima, ad 150 cm longa et 57 cm lata a me visa, plantae adultae minora, 30—65 cm longa. Lamina crassiuscula, 3—6-pinnata, ambitu late vel latissime ovata, discolor subtus glaucescens, 24—36 cm longa et 16—31 cm lata, praecipue subtus secus nervos \pm irregulariter pulverulento-pubescentis mox glabra; pinnae laterales sinuato-dentatae, versus basin irregulariter et profunde dentato-laciniatae, flabellatim nervosae; terminalis triangulato-semiorbicularis basi totam latitudinem folii fere occupans, plicata, \pm profunde divisa et margine irregulariter dentata, pedato-nervosa; pinnae haud raro valde approximatae sese tegentes; petiolus ad 20 cm longus, crasse carnosus, inferne auriculis membranaceis pulchre reticulato venosis, versus basin angustatis, apice rotundatis et approximatis, 6—11 cm longis et 0,5—2,5 cm latis ornatus. Cetera ignota.

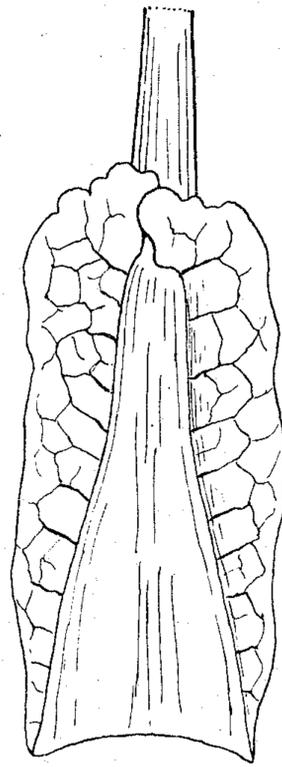


Fig. 38. *Dendroseris regia*, base of leaf showing auricles. $\frac{1}{2}$ nat. size.

Masatierra: Portezuelo de Villagra (BERTERO no. 1601!), on the north-east precipice of Co Pirámide, rock ledge, c. 625 m (fl.-fr. $\frac{3}{12}$ 16, no. 3). Most likely the plants observed on the face of Co Damajuana, c. 530 m, and at the back of Q. de la Choza, c. 450 m, in both places quite out of reach, belonged to this species.

JOHOW wanted to explain *D. marginata* as a local form of *macrophylla*, due to external conditions. Both, however, grow in the same place and do not

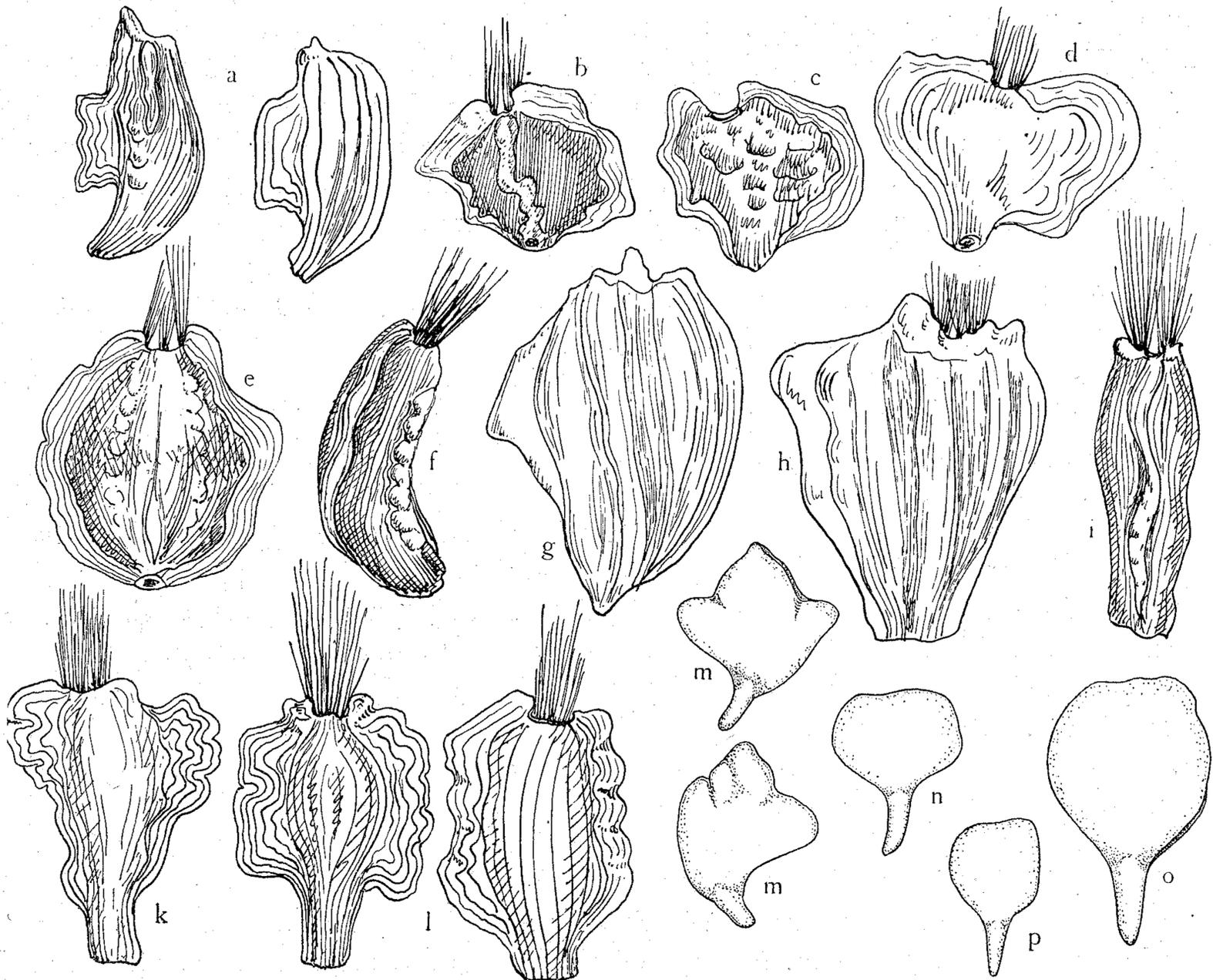


Fig. 37. Achenes (a-l) and embryos (m-p) of *Dendroseris* subgen. *Eudendroseris*. a *D. macrophylla*, two achenes from the side; b-d *D. macrantha*: b marginal achene, ventral view, c-d central achenes, side view; e-i *D. marginata*: e-f marginal achenes, e ventral and f lateral view; g-i central achenes, g-h lateral, i ventral view; k-l *D. litoralis*: k central achene, lateral view and l marginal achenes, dorsal view. m embryos of *D. macrophylla*, n of *D. macrantha*, o of *D. marginata* and p of *D. litoralis*. — All $\times 5$.

only differ in the leaves. BERTERO's specimens were sterile, but another collector, not quoted until now, found the inflorescence (in fruit). A specimen in Herb. Kew labelled »*Rea longifolia* Phil., Reed oct. 1872», consists of a leaf of *D. micrantha* and a piece of an old inflorescence of *D. marginata*.

The leaves are coriaceous, broad ovate with rounded or acuminate tip and cordate base. They are quite entire, but the edge shows scattered warts, visible on the leaf near the rock in plate 18. The petiole is broadly alate. The upper leaves are sessile as in the former. The (hitherto undescribed)

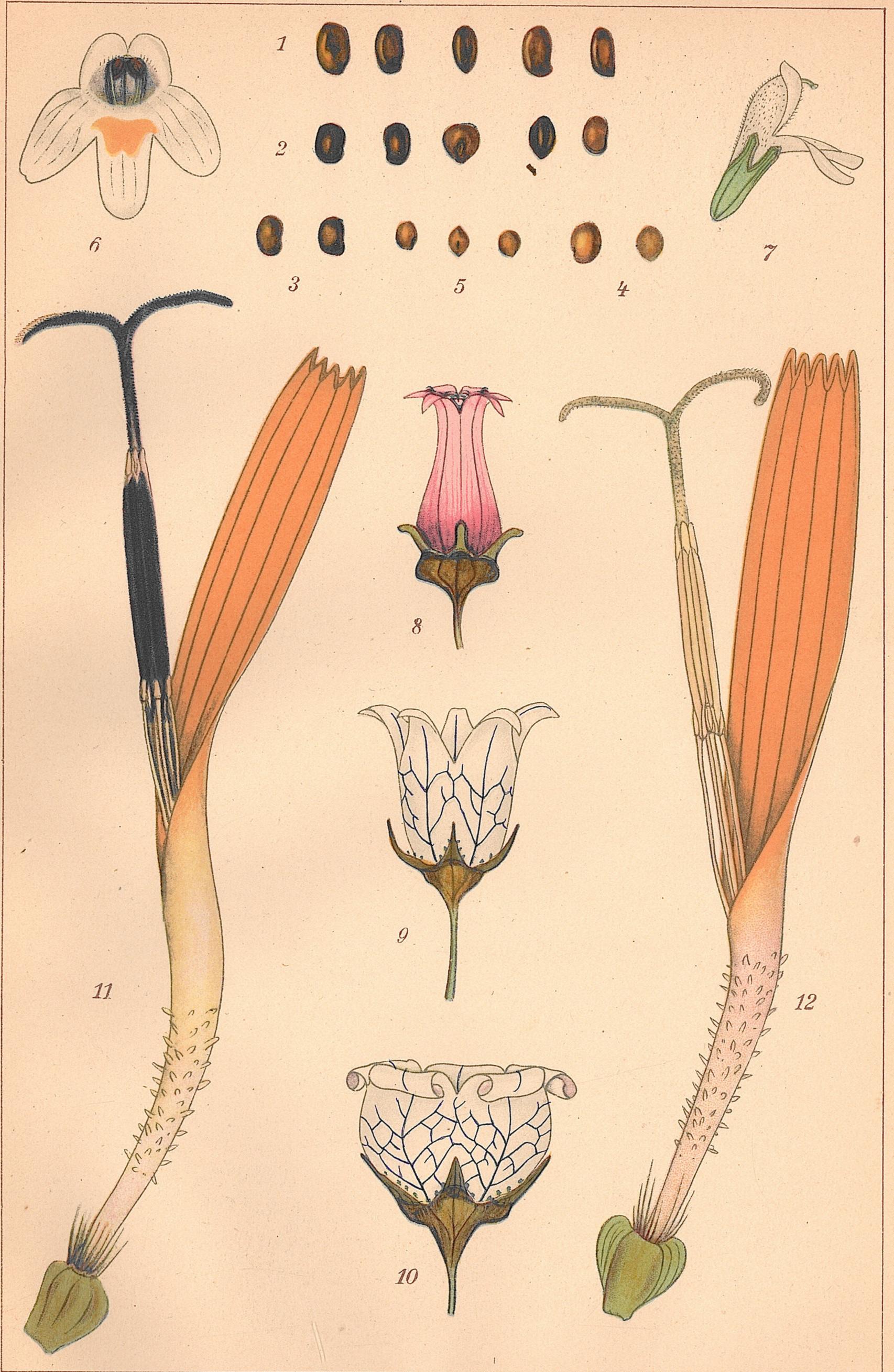
Plate 19.

Dendroseris litoralis Skotts. from Morro Viñillo, in a garden in the colony, Masatierra.

Plate 20.

1—5 Seeds of *Sophora*: 1 *S. fernandeziana* (Phil.) Skotts. var. *Reedeana* (Phil.) Skotts.; 2 *S. masafuerana* (Phil.) Skotts.; 3 »*S. Macnabiana* Grah.» from Chile; 4 *S. microphylla* Ait. from New Zealand; 5 *S. toromiro* (Phil.) Skotts. from Easter Island. All nat. size. 6—7 *Euphrasia formosissima* Skotts., × 3. 8 *Wahlenbergia Berteroi* Hook. et Arn., × 2. 9 *Wahlenbergia fernandeziana* (A. DC.) Skotts., × 2. 10 *Wahlenbergia Grahamae* Hemsl., × 2. 11 *Dendroseris marginata* (Bert.) Hook. et Arn., × 5. 12 *Dendroseris litoralis* Skotts., × 5.





Proofs of this plate, printed by John & Kröstel in Leipzig, were very satisfactory, but in the final print the yellow colour in figs. 11 and 12 is too dull.

C. Skottsberg pinx.