

South American Santalaceae I: *Acanthosyris*, *Cervantesia* and *Jodina*

(Santalales Studien VII)

(H. U. Stauffer. 1961. Vierteljahrsschrift d. Naturf. Ges. Zürich. 106:406-412))

Based on EGGERS collected voucher under NR. 15649, STAPF described in 1906 *Cervantesia glabrata*. In 1960 when I was offered the opportunity to study this voucher at Kew, I was able to review some of morphological findings that in STAPF's diagnosis were not inaccurately mentioned:

1. One of the branches shows clear axillary shoot thorns.
2. The inflorescences normally bears a terminal bloom, laterally single flowers arise from the highest bract followed then by triads. The inflorescences peduncle emerge in the axils at the base of short or long shoots; two to five inflorescences individually in the axils of the bractate basal leaves.
3. The ovary is \pm half inferior, the two hanging seed structures stand at the point of a long, wound and threadlike placenta, those lying closely pushed together in the ovary locule (STAPF does not indicate that the placenta is erecta and short columnar, it has the whole, often stuck together things in compact described something).

From characters 1. and 2. mentioned above besides others (habit, leaf venation and texture, hairs) point substantially to those the genus *Cervantesia* and point much rather to the genus *Acanthosyris*.

Now A. C. SMITH 1937 likewise had described from Colombia a new species of *Cervantesia* (*C. colombiana*), based on the voucher DUGAND 991 as type and some sterile vouchers provided with blooms. In his discussion of the relationships, SMITH points to *C. glabrata*, which he knew, however, only from the description. SMITH mentions parenthetically a voucher DUGAND 858 with fruits, that possibly likewise to *C. colombiana* belongs, its fruits however, did not agree with those from other *Cervantesia* species.

In 1950 CUATRECASAS shifts *Cervantesia colombiana* to *Acanthosyris*, primarily due to the fruits of the voucher DUGAND 858, with the remaining coincide: "the of character of the flowers, too, agree with this genus."

The voucher material of this species was presented to me on loan. There is not a doubt, that DUGAND 858 with the remaining vouchers belongs to this species. Also immediately clear similarities show up between *Cervantesia glabrata* STAPF and *Acanthosyris colombiana* (SMITH) CUATRECASAS. Habit of the branches, development of the thorn formation, size and structure of the flowers agree. The inflorescence is similar, but only single flowers in the shoulders of the bracts are present with *A. colombiana*, no triads. The position of the inflorescence is the same, except that with *A. colombiana* occasionally the short shoots also carry a terminal inflorescence. The most remarkable difference exists in the leaf form: while *C. glabrata* shows elliptical blades, to 9.8 cm long and to 5 cm broad, and *A. colombiana* has elliptical oblong to narrowly oblong-ovate blades, meanwhile the different collection strongly varies: largest blades in each case 7.8 to 20 cm long and 2.6 to 4.2 cm broad. It concerns here that partially sterile, recent branches produce the accordingly large and differently arranged blades. An anatomical investigation resulted in, that the fine structure of the blades of the two taxa agree in all characteristics, among other things, in the occurrence of irregularly stored, after the Rubiaceae-type constructed gap openings only on blades under the light, in by supporting tissue strengthened, untermittels before-stepping central nerve and in the building of the epidermis.

With consideration of the few vouchers of *A. colombiana* showing variability in the leaf morphology, I do not hesitate, therefore, to combine the two taxa, whereby *C. glabrata* possesses nomenclatural priority.

The next task was an examination of the generic affiliation of *C. glabrata*. Since obviously the demarcation of *Cervantesia* and *Acanthosyris* was more or less unclear, I decided to draw some characteristics comparisons in both genera and in addition the genus *Jodina* which follows closely with *Cervantesia*. The results are arranged, and also by way of the illustrations are described, in table 7.

In many characters the three genera agree; they all possess a long, back and forth wound placenta with two to three hanging seed structures, a well developed disk with large lobes, probably (ausgebildete) post staminal hairs and each stamen emerges with one longitudinal fissure per theca. Also in wood anatomy the close relationship of the three genera (data concerning *Jodina* and *Acanthosyris* with RECORDS 1938 and SWAMY shows up 1949, *Cervantesia* after own investigations), likewise in the structure of the pollen (*Cervantesia* illustrated with

SWAMY 1949, *Acanthosyris* and *Jodina* after own investigations).

Table 7. Differentiation of *Jodina*, *Cervantesia*, and *Acanthosyris*

	<i>Jodina</i>	<i>Cervantesia</i>	<i>Acanthosyris</i>
branching position of inflorescences	no axillary shoot spines. Inflor. axillary, along whole length of long shoots. Inflor. strongly condensed, sparsely paniculate, inflor. sessile, rarely pedunculate	no axillary shoot spines; inflor. terminal on more or less developed lateral axis; inflor. more or less elongated, paniculate and pedunculate	axillary shoot spines sometimes but not always present in all species; as a rule, axillary at the base or short and long shoots, rarely terminal on short shoots; inflor. more or less condensed, racemose and clearly pedunculate
flowers and fruits	flowers completely sessile, ovary more or less inferior (also in fruit); base of the tepals separating in the fruiting state and tepals individually caducous; valves basally and apically dehiscent	flower completely sessile, ovary more or less superior (in the fruiting stage half superior); base of tepals separating in the fruiting state and tepals individually caducous; valves basally and apically dehiscent	flower shortly pedicellate, ovary more or less half superior, but in fruit inferior; tepals stay fused at the base (even in fruit), in fruit only the free tips break off
indumentum	inflor. flowers and fruits hairy; very young leaves more or less hairy at margins, early glabrescent, axis glabrous	inflor and flowers densely hairy, fruits glabrous (glabrescent); young leaves densely hairy on both surfaces, old leaves only abaxially densely hairy; axis hairy	flowers and inflor. slightly hairy, fruits glabrous, leaves and axes slightly hairy when young, later glabrous
leaf	flat; apex spiny, margin on each side with one spiny tooth, sessile	leaf margin revolute, apex not spiny, leaf entire	leaf flat, apex not spiny, entire

From the table 7 follows, that EGGERS NR. 15649 is certainly to be placed in *Acanthosyris*. I form therefore:

Acanthosyris glabrata (STAPF) H. U. STAUFFER combo nov.

Synonyma:

Cervantesia glabrata STAPF 1906 (Basionym)

Cervantesia colombiana A. C. SMITH 1937

Acanthosyris colombiana (SMITH) CUATRECASAS 1950

In the end still some remarks are added for the taxonomy of the three genera: *Jodina* HOOKER et ARONTT is a monotypic genus with the species *J. rhombifolia* HOOKER et ARNOTT.

For *Cervantesia*, with the exception of the taxa already discussed above, were already described:

Cervantesia tomentosa RUIZ et PAVON 1794

Cervantesia bicolor CAVANILLES 1799

Cervantesia Kunthiana BAILLON 1861/62

Cervantesia macrocarpa CUATRECASAS 1950

I saw type material from all species, in addition some further vouchers. The material of this genus in European herbaria is however meager. Due to the past investigations consider I the genera likewise monotypic. Certain differences are not to be misjudged between the different gathering, they concern leaf morphology and size, type and density of the hairs on the lower blade surface as well as fruit size. These differences seem to be appropriate for me within the range of variability for a species. A confirmatory evaluation can take place, however, only, if I saw more and more plentiful vouchers.

For the genus *Acanthosyris*, DAWSON 1944 still recognizes *A. spinescens* (MARTIUS et EICHLER) GRISEBACH (*A. platensis* SPEGAZZINI must be counted as a synonym) and *A. falcata* GRISEBACH from Argentina and the surrounding areas. The two species are certainly close themselves. To them comes now as the third species *A. glabrata* of Colombia and Ecuador.

Summary [from German]

Cervantesia glabrata STAPF 1906 (EGGERS NR. 15649) due to a detailed morphological investigation of the genus, one transfers to *Acanthosyris*:

Acanthosyris glabrata (STAPF) H. U. MORE STAUFFER combo nov.

The three genera *Jodina*, *Cervantesia* and *Acanthosyris* are analyzed concerning the common and the differentiating features. Some remarks on the taxonomy of these genera are attached: *Jodina* and probably also *Cervantesia* are monotypic. For *Acanthosyris* three species can be recognized.

Summary [English]

Cervantesia glabrata STAPF 1906 (EGGERS No. 15649) is transferred to *Acanthosyris*: *Acanthosyris glabrata* (STAPF) H. U. STAUFFER comb. nov.

This transfer is based on a new morphological investigation of the type specimen at Kew.

The genera *Jodina*, *Cervantesia* and *Acanthosyris* are analyzed in their common and in their differentiating features. A few taxonomic remarks concerning the mentioned genera are given: *Jodina* and probably also *Cervantesia* are monotypic. *Acanthosyris* is now known to possess three species.

Literature

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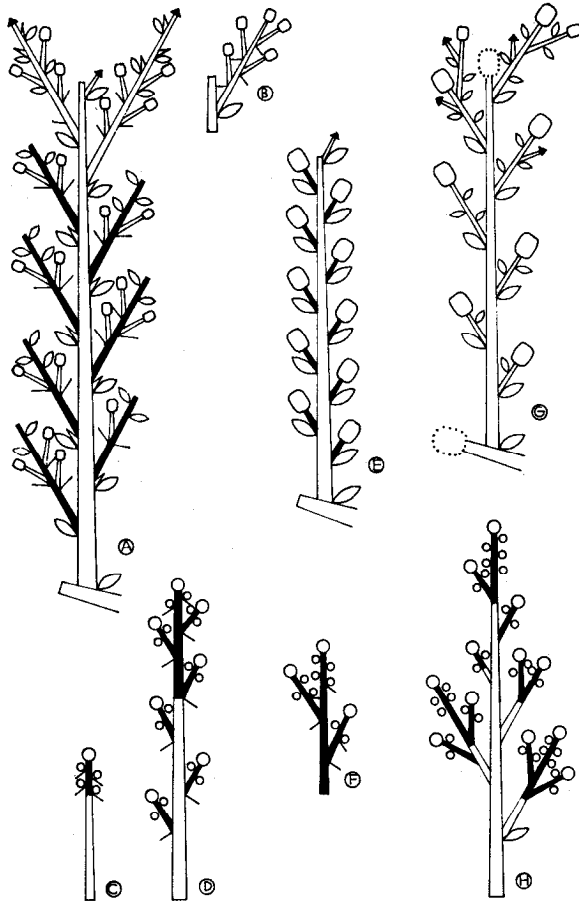


Figure 6. *Acanthosyris*, *Jodina*, *Cervantesia*: branches (ramifications) and inflorescences (axillary parts black)

Acanthosyris:

- A. branching diagram (after LORENTZ 502)
- B. modification of the scheme (after DUGAND 991)
- C, D. inflorescences (C: after LORENTZ 502, D: after EGGERS 15549)

Jodina:

- E. branching diagram
- F. inflorescence (E, F: after Herter 91363)

Cervantesia

- G. branching diagram
- H. inflorescence (G, H: after CAVANILLES 77)

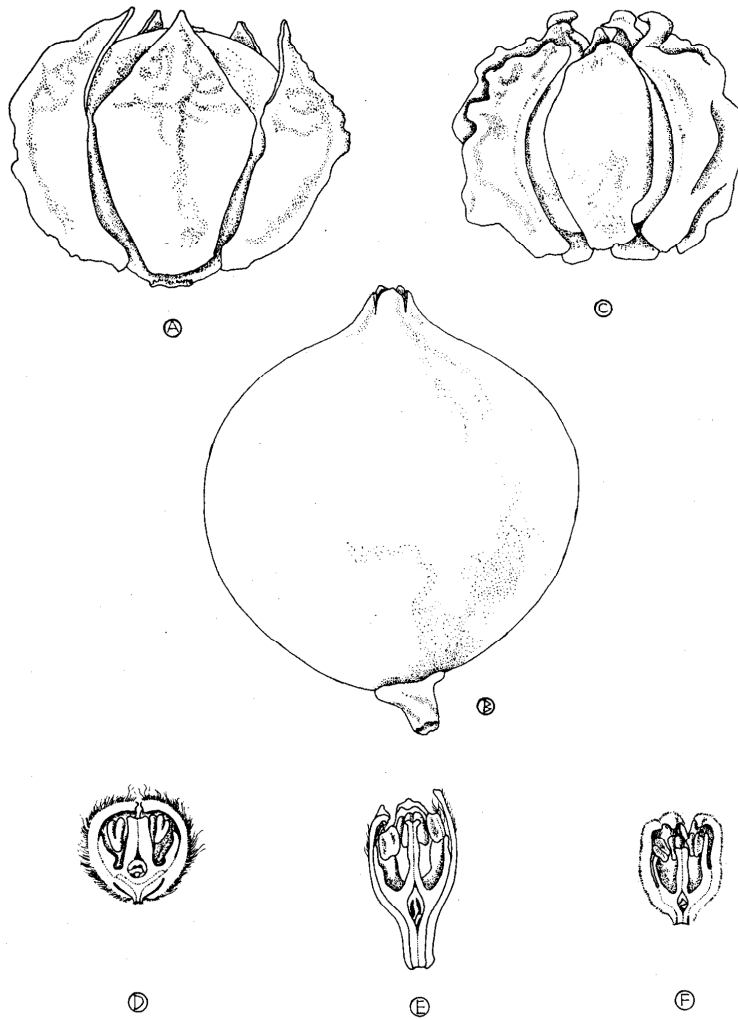


Fig. 7. *Cervantesia*, *Acanthosyris*, *Jodina*: fruits: A-C, flower longitudinal sections: D-F
 A. *Cervantesia*, 3:1 (CUATRECASAS 19330)
 B. *Acanthosyris*, 3:1 (DUGAND 858)
 C. *Jodina*, 6:1 (HERTER 93818)
 D. *Cervantesia*, 15:2 (DOMBEY s.n.)
 E. *Acanthosyris*, 15: 2 (EGGERS 15649)
 F. *Jodina*, 15: 2 (HERTER 913563)