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SUMMARY

Ten new taxa are described: *Ficus aripuanensis* C.C. Berg & F. Kooy, *F. blepharophylla* Vázquez Avila, *F. cremersii* C.C. Berg, *F. insipida* Willd. ssp. *scabra* C.C. Berg, *F. jacobii* Vázquez Avila, *F. lauretana* Vázquez Avila, *F. leiophylla* C.C. Berg, *F. piresiana* Vázquez Avila & Berg, *F. roraimensis* C.C. Berg, *F. vittata* Vázquez Avila.

During floristic studies on the *Ficus* species of Peru and Bolivia (by Vázquez Avila), Amazonian Brazil (by Berg & Kooy) and the Guianas (by Berg) several new taxa were found. Although some of them belong to species-complexes (cf. Berg & Simonis, 1981), they are sufficiently distinct to warrant their description as new species.

1. *Ficus aripuanensis* C.C. Berg & F. Kooy spec. nov.

Fig. 1.

Arbor. Ramuli glabri. Folia oblonga, 6.5-12.5 x 2-4.2 cm, apice acuminata, basi acuta usque obtusa. Folia utrinque glabra; venis lateralibus utroque latere 6-10; petiolo 1-2(-3.5) cm longo. Stipulae 0.3-1 cm longae, puberulae; pilis albis adpressis. Syconia in axillis foliorum; pedunculo 0.3-0.7 cm longo; receptaculo globoso, 0.7-1 cm diam.; ostiolo leviter impresso.

Tree up to 10 m tall. Leafy twigs 2-3 mm thick, glabrous. Lamina oblong (to lanceolate or to elliptic), 6.5-14 x 2-4.2 cm, coriaceous, apex acuminate, base acute to obtuse, margin entire; both surfaces glabrous; lateral veins 2x (5-)6-10(-14), tertiary venation ± reticulate; petiole 1-2(-3.5) cm long, ca. 1.5 mm thick, glabrous, stipules 0.3-1 cm long, white-puberulous, caducous. Figs in pairs in the leaf axils; peduncle 0.3-0.7 cm long, minutely puberulous; basal bracts 2, ca. 2 mm long, puberulous; receptacle (sub)globose, when dry 0.7-1 cm in diameter, (densely) minutely puberulous, at maturity green with brown spots(?); ostiole ca. 2 mm in diameter, slightly prominent, slightly sunken or surrounded by a low, circular rim. Staminate flowers disperse; ped-

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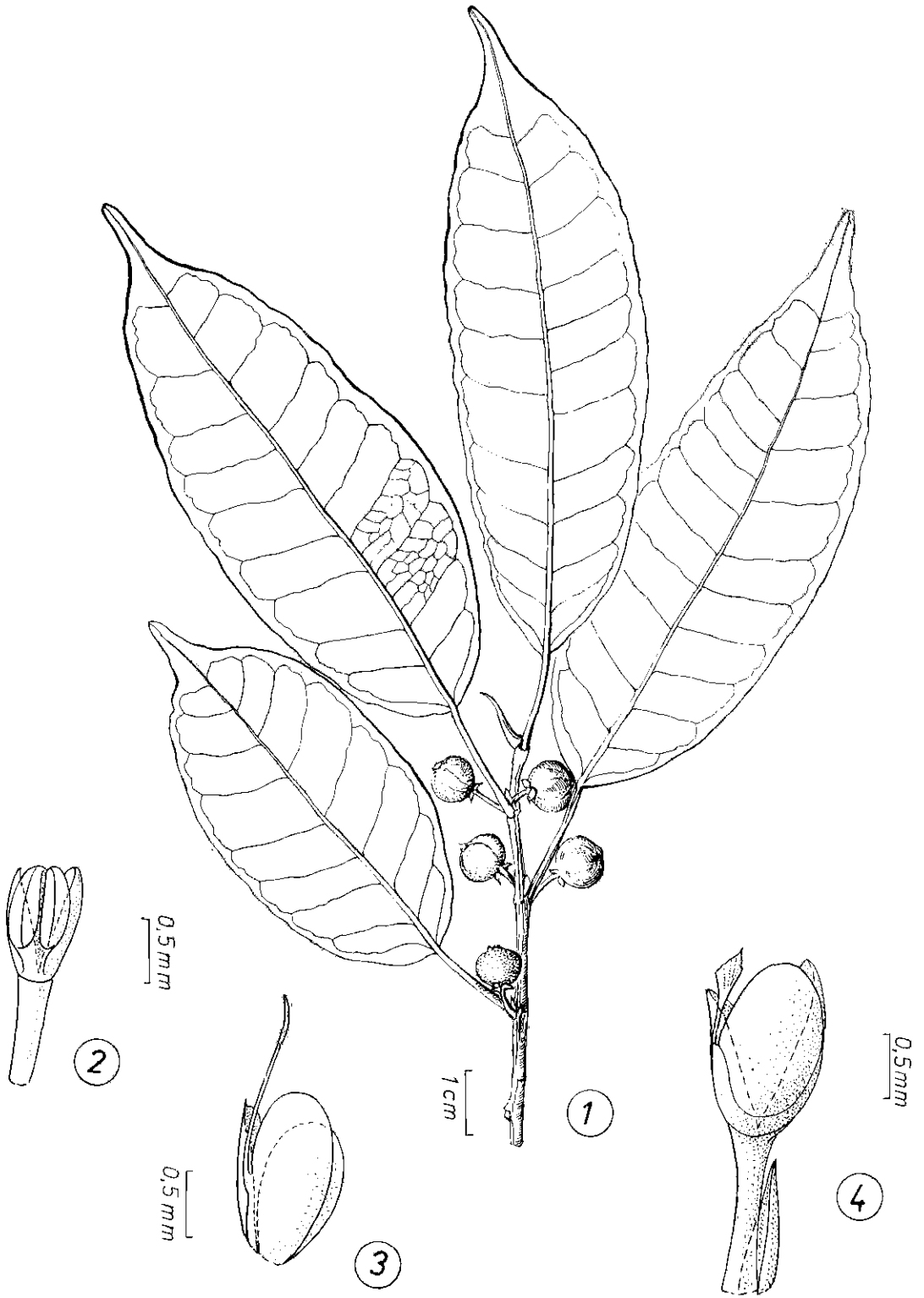


Fig. 1. *Ficus aripuanensis*: 1, leafy twig with figs; 2, staminate flower; 3, seed flower; 4, gall flower with interfloral bract (Anderson 10871).

icel 0.5-1 mm long; tepals 3, (almost) free, 0.8-1 mm long; stamen 1, filament short, anther ca. 0.7 mm long. Pistillate flowers with tepals 3, (almost) free; seed flowers sessile, style (incl. stigma) ca. 1.5 mm long; gall flowers 1-1.5 mm long pedicellate, style (incl. stigma) ca. 0.5 mm long. Fruit ellipsoid to ovoid, 1-1.2 mm long; gall fruit ellipsoid, 1-1.2 mm long. Interfloral bracts up to 1.2 mm long.

Types: Berg et al. P.18477, Brazil, Mato Grosso, Rio Aripuana, Salto dos Dardanelos, ca. 59°21'W, 10°12'S, 13 Oct 1973 (holotype MG; isotypes COL, K, U).

Additional collections: Brazil: Pará, Rio Cururu, 1-10 km upriver (SE) from Pratai, ca. 08°S, 57°05'W, Anderson 10871 (IAN, U); Mato Grosso, Rio Jurueua, Igarapé Chuini, M.G. Silva & J. Maria 3341 15 Jul 1977 (MG,U).

F. aripuanensis belongs to subg. *Urostigma* sect. *Americanae*. Its relationships with other species are not clear. It may prove to be related to *F. amazonica* (Miq.) Miq., one of the members of the *F. citrifolia* complex (cf. Berg & Simonis, 1981), but it also shows morphological affinities to *F. pertusa* L.f.

2. *Ficus blepharophylla* Vázquez Avila spec. nov.

Fig. 2.

Arbor. Ramuli tomentosi. Folia oblonda, late elliptica usque subobovata, 1.5-5 x 1-2.5 cm, apice breviter acuminata, basi obtusa usque (sub)cordata, margine ciliata, supra glabra, subtus tomentosa usque hirtella; venis lateralibus utroque latere 5-7; petiolo 0.1-0.8 cm longo. Stipulae 0.4-1 cm longae. Syconia geminata, in axillis foliorum sessilia; receptaculo globoso, circa 0.5 cm diam.; ostiolum annulo 3 vel 4 lobato circumcinctum.

Tree 5-10 m tall. Leafy twigs 2-3 mm thick, brown- to whitish-tomentose. Lamina oblong to elliptic to (sub)obovate, 1.5-5 x 1-2.5 cm, coriaceous, apex short-acuminate to rounded, base obtuse to subcordate, margin entire, ciliate; upper surface glabrous, punctate, lower surface brown- to whitish-tomentose to -hirtellous on the main veins, otherwise glabrous; midrib and lateral veins prominent beneath; lateral veins 2x 5-7, tertiary venation reticulate; petiole 0.1-0.5 cm long, brown- to whitish-sericeous; stipules 0.4-1 cm long, brown-sericeous to woolly, subsistent. Figs in pairs in the leaf axils, sessile; basal bracts ca. 1.5 mm long, membranous, puberulous; receptacle subglobose, when dry ca. 0.5 cm in diameter, densely whitish-puberulous; ostiole ca. 1.5 mm in diameter, slightly sunken and surrounded by distinct, slightly 3- or 4-lobed rim. Staminate flowers disperse; pedicel 0.5-0.7 mm long; tepals 3 or 4, almost free, 0.9-1.1 mm long; stamen 1, filament ca. 0.5 mm long, anther 0.5-0.6 mm long. Pistillate flowers with tepals 3, almost free; seed flowers sessile, style ca. 1 mm long, stigma ca. 0.5 mm long; gall flowers ca. 2.5 mm long pedicellate, style (incl. stigma) 0.5-0.6 mm long. Fruit ellipsoid, 1-1.2 mm long; gall fruit ovoid, 1-1.1 mm long. Interfloral bracts up to 1.3 mm long.

Types: Ule 7987, Brazil, Roraima, Serra do Paran, Feb 1909 (holotype MG; isotypes L, G, SI).

The new species belongs to subg. *Urostigma* sect. *Americanae* and may be related

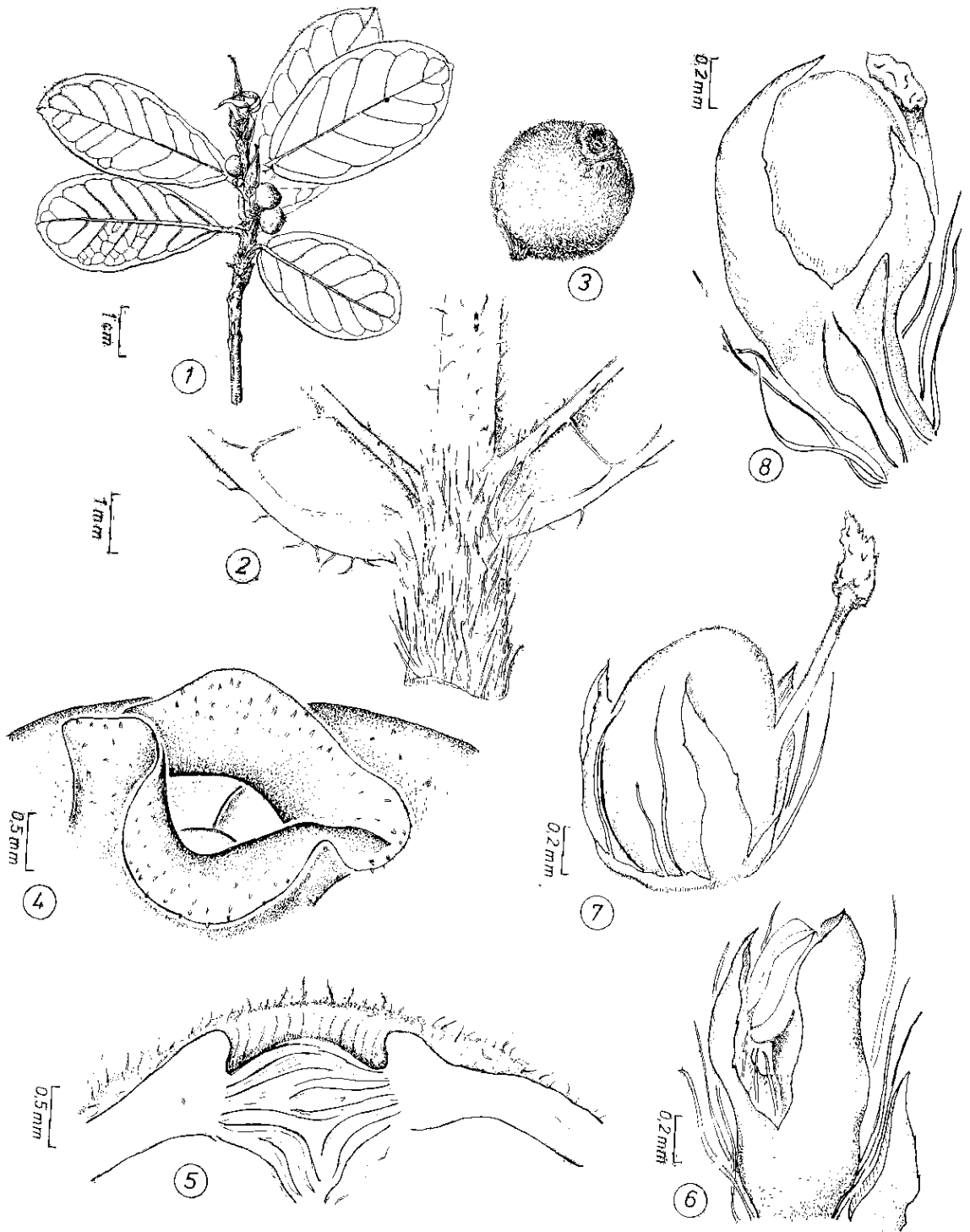


Fig. 2. *Ficus blepharophylla*: 1, leafy twig with figs; 2, base of the lamina and the petiole; 3, fig; 4, ostiole; 5, longitudinal section of the ostiole; 6, staminate flower; 7, seed flower; 8, gall flower (Ule 7987).

to *F. panurensis* Standl. In *F. panurensis* the figs are larger and they are covered with long, brownish hairs; the leaves are lanceolate to long-obovate, densely sericeous all over the lower surface, with the petiole glabrescent.

3. *Ficus cremersii* C.C. Berg spec. nov.

Fig. 3.

Arbor. Ramuli puberuli. Folia oblonda, 7.5-16 x 3.5-5.5 cm, apice acuminata, basi cordata vel truncata, supra puberula, subtus puberula vel hirtella; venis lateralibus utroque latere 8-12; petiolo 2-4 cm longo. Stipulae circa 1 cm longae. Syconia in foliorum axillis geminatae; pedunculo 0.4-0.6 cm longo; receptaculo globoso usque turbinato, 0.8-1.2 cm diam.; ostiolum annulo demisso circumcinctum.

Tree. Leafy twigs 2-3.5 mm thick, puberulous. Lamina oblong, 7.5-16 x 3.5-5.5 cm, (sub)coriaceous, apex acuminate, base cordate to truncate, margin entire; upper surface (sparsely) puberulous, at least on the midrib, lower surface hirtellous to puberulous; lateral veins 2x 8-12, tertiary venation reticulate; petiole 2-4 cm long, 1-1.5 mm thick, puberulous; stipules ca. 1 cm long, puberulous, caducous. Figs in pairs in the leaf axils; peduncle 0.4-0.6 cm long, puberulous; basal bracts 2, ca. 2 mm long, puberulous; receptacle globose to broadly turbinate, when dry 0.8-1.2 cm in diameter, minutely puberulous; ostiole ca. 3 mm in diameter, surrounded by a low circular rim. Staminate flowers disperse; pedicel ca. 0.5 mm long; tepals 2 or 3, (almost) free, 0.8-1 mm long, slightly fleshy; pistillate flowers with tepals (2-)3-4, almost free, ca. 1 mm long, slightly fleshy; seed flowers sessile, style (incl. stigma) 1.2-1.5 mm long; gall flowers 0.5-1 mm long pedicellate, style (incl. stigma) ca. 0.5 cm long. Fruit ellipsoid to ovoid, ca. 1.8 mm long; gall fruit subglobose to broadly ovoid, 1-1.2 mm long, bicolorous. Interfloral bracts up to ca. 1 mm long, slightly fleshy.

Types: **Cremers 8233**, French Guiana, Paul Isnard region, between Citron and Mont Décou Décou. 9 Sep 1983 (holotype CAY; isotypes BR, P, U).

Additional collection: French Guiana, Acarouany, 1856, **Sagot 962** (P).

F. cremersii belongs to subg. *Urostigma* sect. *Americanae*. It shows morphological affinities to *F. amazonica* (Miq.) Miq., and *F. donnell-smithii* Standl. The collection Krukoff 5402 from Acre, Brazil, shows strong similarities to the two collections of *F. cremersii* from which it differs mainly in having subacute to subcordate leaf bases. It may prove to represent a form of *F. cremersii*.

4. *Ficus insipida* Willd., Sp. Pl. 4(2): 1143. 1806.

a. ssp. *insipida*

Leafy twigs glabrous or minutely puberulous. Lamina glabrous (except for minute, ovoid-capitate, pluricellular, "glandular" hairs); petiole glabrous or sometimes minutely puberulous; stipules glabrous.

Distribution: Central America, northern Lesser Antilles, Trinidad, Andean region, Upper Amazon Basin.

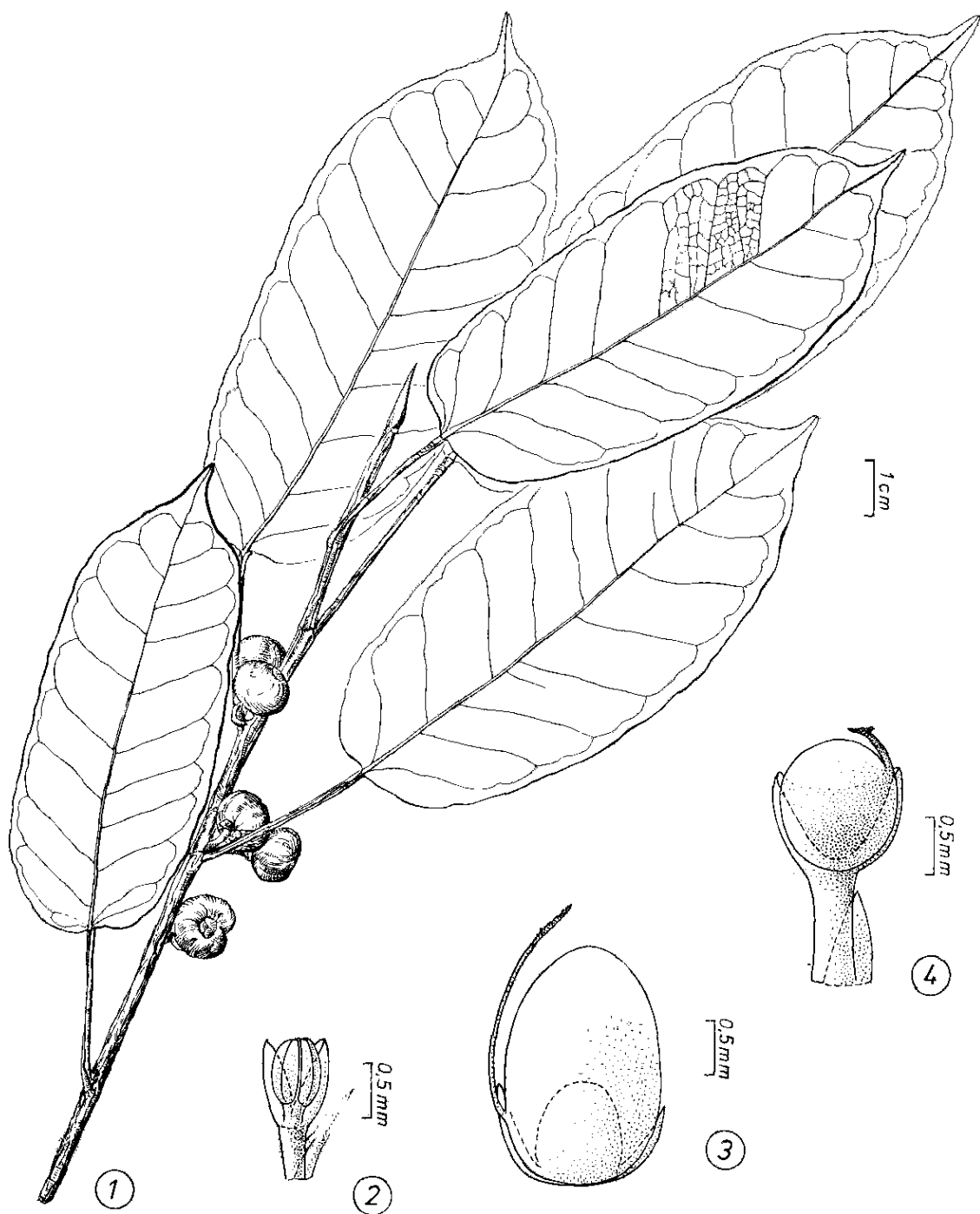


Fig. 3. *Ficus cremersii*: 1, leafy twig with figs; 2, staminate flower with interfloral bract; 3, seed flower; 4, gall flower (Creemers 8233).

b. ssp. *scabra* C.C. Berg subsp. nov.

Differt a ssp. *insipida* foliis supra scabris, subtus hirtella; stipulis atque ramulis hirtellis.

Leafy twigs hirtellous. Lamina above scabrous, hispidulous to puberulous, beneath hispidulous to hirtellous; petiole puberulous; stipules appressed-puberulous.

Types: Oldeman T.321, French Guiana, Oyapock River, Saut Armontabo, 5 Jul 1969 (holotype CAY; isotypes P, U).

Additional collections: Brazil: Pará, Rio Tapajós, near Fordlandia, 15 Apr 1943, Archer 8383 (IAN); Amapá, Rio Oiapoque, near Trois Sauts, 9 Nov 1974. Lescure 499 (CAY); Rio Oiapoque, Sta. Izabela, 23 Aug 1981, Rabelo 1369 (MG); Pará, Fazenda Krimet, km 51 - Tucumã, 6 Dec 1982, Sérgio 167 (IAN); Pará, Rio Jari region, between Bandeira and Pilão, km 39, 6 Jan 1969, N.T. Silva 2126 (IAN). French Guiana: Arataye River, Sauts Parare, Aug-Sep 1983, Barrier 3887 (CAY, P); Saül, Monts La Fumée, 14 Oct 1982, Boom et al. 2071 (CAY, NY); Montagne de Trinite, 6 Feb 1984, de Granville et al. 6534 (CAY, P, U). Suriname: Brownsberg, 20 Jul 1916, BW 2151 (U), 20 Nov 1916, BW 2434 (U), 9 Oct 1923, BW 6199 (U); distr. Nickerie, Kabalebo Dam project, 8 Sep 1980, Lindeman et al. 285 (K, U). Guyana: Essequibo River, Groete Creek, 17 Apr 1944, Fanshawe 1802 (= FD4538) = Maguire & Fanshawe 22877 (K). Venezuela: Bolívar, along border between Bolívar and Delta Amacuro, ca. 60°44'W, 8°14'N, 8 Apr 1967, de Bruijn 1666 (U, WAG); Delta Amacuro, depto. Tucupita, ESE of Sierra Imata, 4-6 Apr 1979. Davidse et al. 16516 (MO, U, VEN); Delta Amacuro, ENE of El Palmar, 19 Aug 1964, Marciano Berti 398 (ME, U). Colombia: Meta, Caño Rosa Blanca, near Villavicencio, 7 Sep 1967, Kirkbride 390 (MO).

The two subspecies appear to be allopatric or almost so.

5. *Ficus jacobii* Vázquez Avila spec. nov.

Fig. 4.

Arbor hemi-epiphytica circa 10 m alta. Ramuli hirtelli usque subtomentosi, pilis aureis atque pallide fuscis. Folia oblonga usque elliptica, 7-15 x 4-8 cm, apice rotunda usque leviter et breviter acuminata, basi subcordata, supra puberula, subtus subtomentosa usque subhirsuta; venis lateralibus utroque latere 8-13; petiolo subhirsuto usque hirticulo, 0.7-1.5 cm longo. Stipulae 0.5-1 cm longae, luteo-sericeae. Syconia in foliorum axillis geminatae; pedunculo 0.2-0.3 cm longo, luteo-hirtello; receptaculo globoso, (0.8-1)-1.3 cm diam.; ostiolum annulo pseudo-glandulosum circumcinctum.

Tree ca. 10 m tall. Leafy twigs 4-10 mm thick, when dry ± angulate, pale brown- to yellow-hirtellous to -subtomentose, with hairs of different lengths. Lamina oblong to elliptic, 7-15 x 4-8 cm, coriaceous, apex rounded to faintly short-acuminate, base (sub)cordate, margin entire; upper surface white-puberulous, on the midrib densely so to hirtellous, lower surface pale brown- to yellow-subtomentose to -subhirsute; venation prominent beneath; lateral veins 2x 8-13, tertiary venation reticulate; petiole 0.7-1.5 cm long, 2-3 mm thick, pale brown- to yellowish-subhirsute to whitish-hirtellous; stipules 0.5-1 cm long, yellow-subsericeous. Figs in pairs in the leaf axils; peduncle 0.2-0.3 cm long, yellow-hirtellous; basal bracts 2, ca. 2.5 mm long, yellow-strigillose to

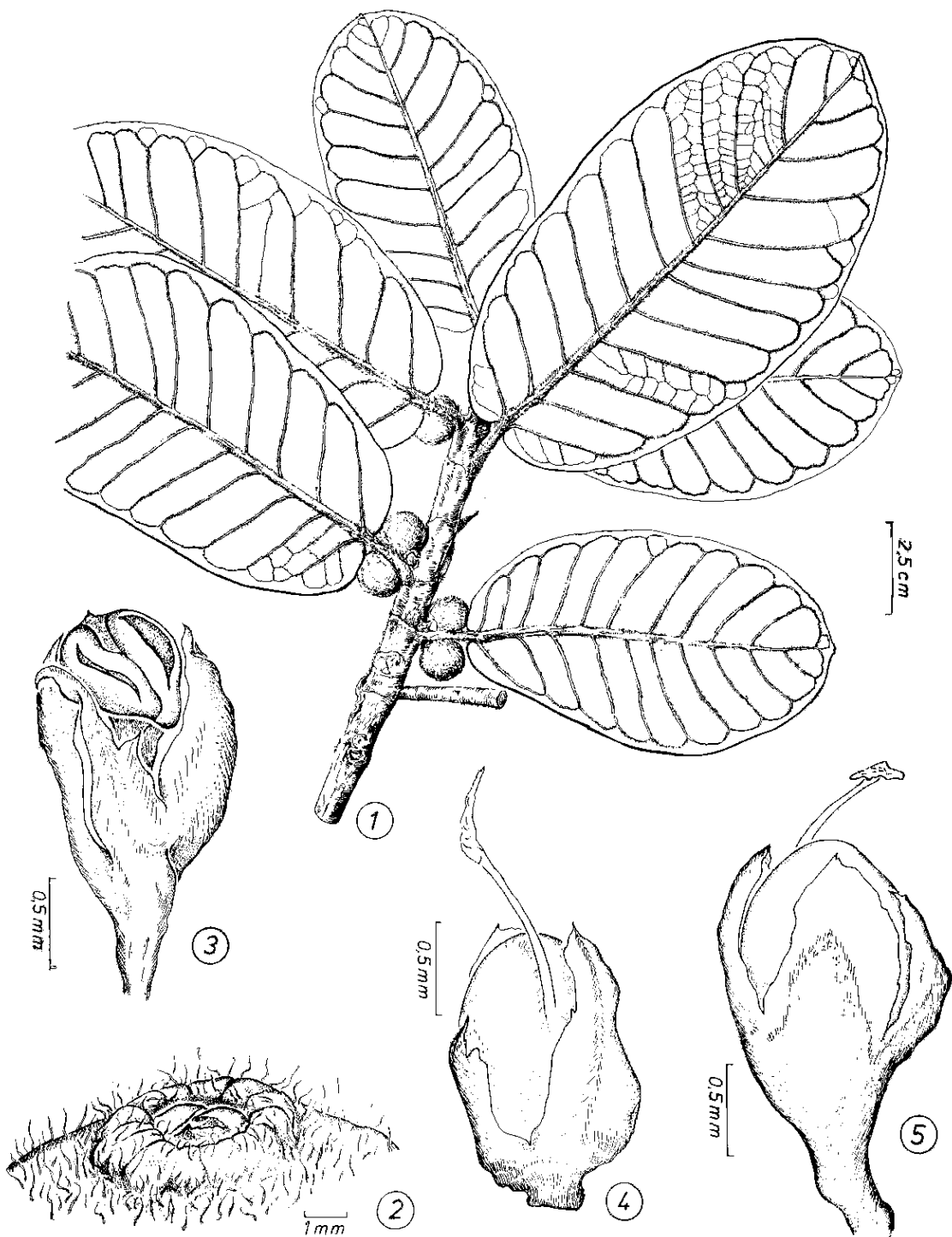


Fig. 4. *Ficus jacobii*: 1, leafy twig with figs; 2, ostiole; 3, staminate flower; 4, seed flower; 5, gall flower (Hutchinson & Wright 6708).

to -puberulous; receptacle globose, when dry (0.8-)1-1.3 cm in diameter, densely yellowish-hirtellous, the yellow hairs intermingled with much shorter white hairs; ostiole 1.5-2 mm in diameter, surrounded by a circular rim, in dry material gland-like. Staminate flowers disperse; pedicel 0.6-0.8 mm long; tepals 3, almost free, 0.9-1.2 mm long; stamen 1, filament short, anther ca. 1 mm long. Pistillate flowers with tepals 3, almost free; seed flowers sessile, style ca. 1.3 mm long, stigma 0.3-0.4 mm long; gall flowers 2.5-3 mm long pedicellate, style (incl. stigma) ca. 0.8 mm long. Fruit ellipsoid to ovoid, 1.2-1.4 mm long; gall fruit ovoid, 1.1-1.3 mm long. Interfloral bracts up to 2 mm long.

Types: **Hutchinson & Wright 6708**. Peru, Lambayeque, 17 km E of Olmos, 1964 (holotype F; isotype G).

This species belongs to subg. **Urostigma** sect. **Americanae** and appears to be closely related to *F. gomelleira* Kunth & Bouché, from which it differs in its shorter petiole and its relatively small, short-pedunculate fig.

This new species is named for Jacobus T. Wiebes who has contributed so much to our knowledge of fig-wasps.

6. *F. lauretana* Vázquez Avila spec. nov.

Fig. 5.

Arbor hemi-epiphytica. Ramuli puberuli. Folia anguste oblona usque lanceolata, 5-9 x 1.5-3.5 cm, apice subacuta vel acuminata, basi acuta usque obtusa; costa minute puberula; venis lateralibus utroque latere 9-12; petiolo 0.3-0.8 cm longo. Stipulae 0.3-0.5 cm longae. Syconia in foliorum axillis geminata; pedunculo 0.1-0.5 cm longo; receptaculo subgloboso, 0.4-0.6 cm diam.; ostiolo in receptaculi apice crateriformi depresso.

Tree up to 15 m tall. Leafy twigs 2-3 mm thick, minutely puberulous. Lamina oblong to elliptic or to lanceolate, 5-9 x 1-3 cm, (sub)coriaceous, subacute to bluntly acuminate, base obtuse to acute; upper surface minutely puberulous on the midrib, lower surface minutely puberulous on the midrib, sometimes also puberulous on the lateral veins; lateral veins 2x 9-2, tertiary venation reticulate, petiole 0.3-0.8 cm long, ca. 1 mm thick, minutely puberulous; stipules 0.3-0.5 cm (on new growth up to 2 cm) long, puberulous, caducous. Figs in pairs in the leaf axils (or sometimes just below the leaves); peduncle 0.1-0.4 mm long, glabrous or sparsely puberulous; basal bracts 2, 1-1.5 mm long, puberulous; receptacle (sub)globose, when dry 0.4-0.6 cm in diameter, glabrous, at maturity brown to orange-red, unspotted; ostiole ca. 1 mm diameter, sunken in the crateriform apex of the receptacle. Staminate flowers disperse; pedicel ca. 0.3 mm long; tepals 3, almost free, 0.6-0.8 mm long; stamen 1, filament ca. 0.3 mm long, anther 0.3-0.5 mm long. Pistillate flowers with tepals 3, 0.9-1.1 mm long; seed flowers sessile, style 0.8-1 mm long, stigma ca. 0.3 mm long; gall flowers ca. 1.3-1.7 mm long, style (incl. stigma) 0.7-0.8 mm long. Fruit oblongoid, 1-1.1 mm long, whitish; gall fruit ovoid to oblongoid, ca. 1 mm long. Interfloral bracts up to 1 mm long.

Types: **Krukoff 8740**, Brazil, Amazonas, São Paulo de Olivença, 26 Oct - 11 Dec 1936 (holotype U; isotype K).

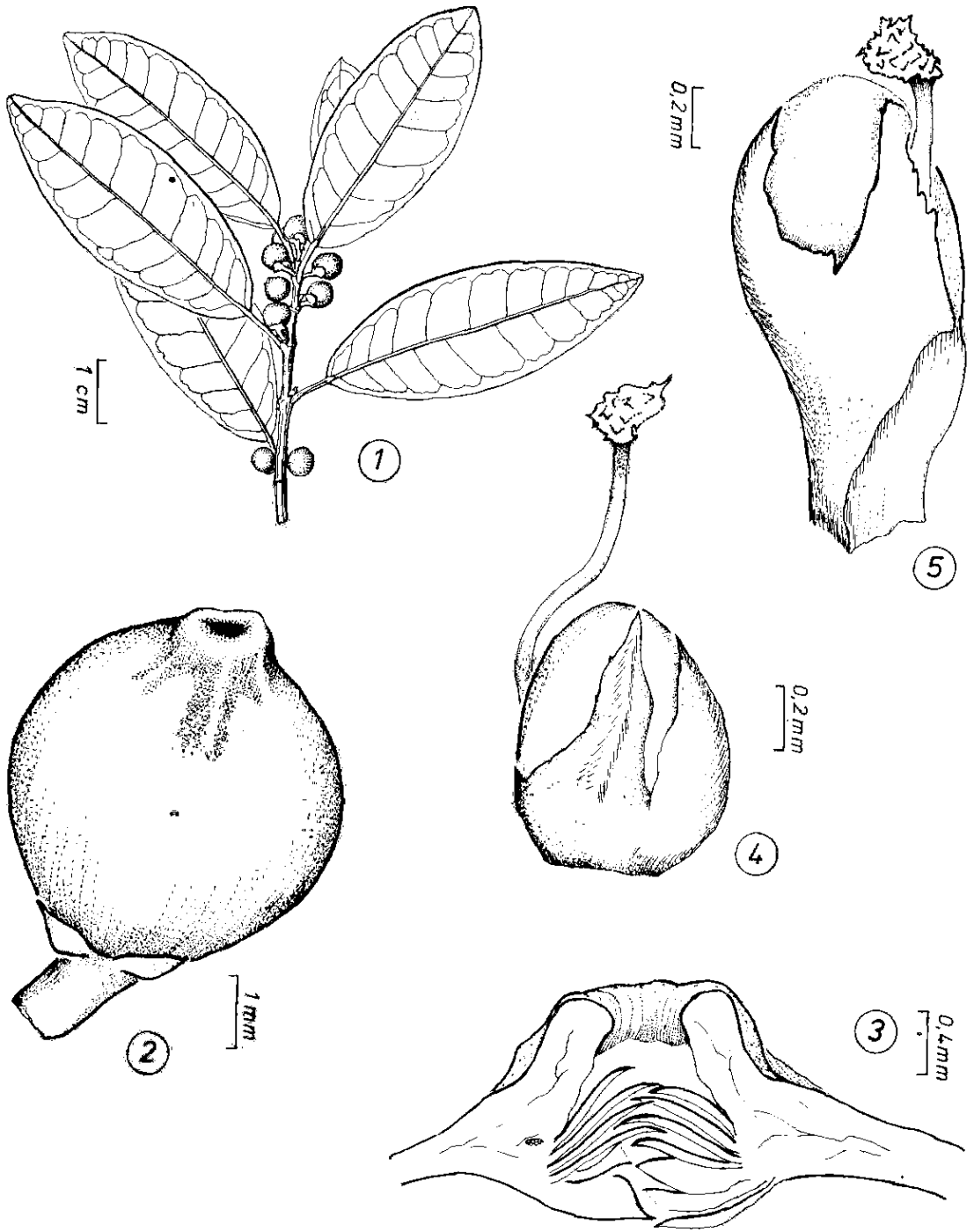


Fig. 5. *Ficus lauretana*: 1, leafy twig with figs; 2, fig; 3, longitudinal section of the ostiole; 4, seed flower; 5, gall flower (Prance et al. 24694).

Additional collections: Brazil: Acre, Rio Acre, Itú, 9 Nov 1933 **Kuhlmann 797** (U). Colombia: Amazonas, Río Igaraparaná, between Quebrada Menaje and Río Putumayo, 15-17 Jul 1942, **Schultes 3978** (COL, U, US). Peru: Loreto, prov. Maynas, Río Nanay, between Iquitos and Puerto Almendra, 13 Jul 1976, **Gentry et al. 16692** (U), Río Nanay, near Morana Cocha, 3 Nov 1977, **Gentry et al. 20319** (U), Río Nanay, Puerto Almendra, 22 Feb 1979, **Gentry et al. 24883** (U), Río Nanay, near Nina Rumi, 23 Feb 1976, **Revilla 204** (U); prov. Maynas, Lower Río Ampiyacu, 6 Mar 1977, **Prance et al. 24694** (U); prov. Maynas, Río Ampiyacu, near Estiron del Cuzco, 11 May 1976, **Revilla 513** (U).

This species belongs to subg. *Urostigma* sect. *Americanae* and appears to be related to *F. pertusa* L.f. It is distinguished from the other members of the *F. pertusa* complex (cf. Berg & Simonis, 1981) easily by the short indument on the leaves and in lacking ascending basal lateral veins.

7. *Ficus leiophylla* C.C. Berg spec. nov.

Fig. 6.

Arbor. Ramuli puberuli. Folia lanceolata, 2.7-9 x 0.7-2 cm, apice leviter acuminata usque subacuta, basi acuta usque obtusa. Folia utrinque glabra; venis lateralibus utroque latere 8-16; petiolo 0.3-1.5 cm longo. Stipulae 0.7-1.7 cm longae. Syconia ad brachyblastos inserta; pedunculo 0.2-0.3 cm longo; receptaculo globoso, 0.3-0.4 cm diam.; ostiolo plano usque leviter prominente.

Tree up to 20 m tall. Leafy twigs 2-3 mm thick, sparsely and minutely puberulous. Lamina lanceolate to almost linear, 2.7-10(-16) x 0.7-2.5 cm, coriaceous, apex faintly acuminate to subacute, base acute to obtuse, margin entire, often \pm revolute; both surfaces glabrous or puberulous at the base of the midrib; the midrib, prominent above, the other veins flat and obscure; lateral veins 2x 8-16, connected by a barely arcuate submarginal vein, tertiary venation \pm parallel to the lateral veins; petiole 0.3-1.5(-2.5) cm long, 0.5-1 mm thick, sparsely minutely puberulous; stipules (0.3-)0.7-1.7(-2) cm long, minutely puberulous, caducous; the terminal buds \pm curved. Figs up to 4 together on minute spurs in the leaf axils and also below the leaves; peduncle 0.2-0.3 mm long, sparsely and minutely puberulous; basal bracts 2, ca. 1.5(-2) mm long, minutely puberulous; receptacle (sub)globose, when dry 0.3-0.4(-0.5) cm in diameter, puberulous with appressed, brown hairs, at maturity probably green, unspotted; ostiole ca. 1.5 mm in diameter, slightly prominent. Staminate flowers disperse; pedicel 0.2-0.4 mm long; tepals 3, free, 0.6-0.7 mm long; stamens 1, filament short, anther 0.3-0.4 mm long. Pistillate flowers with tepals 3, free or basally connate, 0.6-1 mm long; seed flowers sessile, style (incl. stigma) 0.8-1 mm long, gall flowers sessile or up to 0.6 mm long pedicellate, style (incl. stigma) 0.3-0.5 mm long. Fruit ellipsoid to ovoid, ca. 0.8 mm long; gall fruit obovoid to subglobose, 0.6-0.7 mm long, evenly colored. Interfloral bracts few, narrowly triangular to lanceolate, up to 0.7 mm long.

Types: **de Granville & Kahn 5410**, French Guiana, Saül, route de Belizon, 12 Mar 1983 (holotype CAY; isotypes BR, P, U).

Additional collections: Brazil: Pará, Belém, grounds of Museu Goeldi, near the herbarium building, 15 Mar 1984, **Berg s.n.** (MG, NY, U). French Guiana: near Kourou,

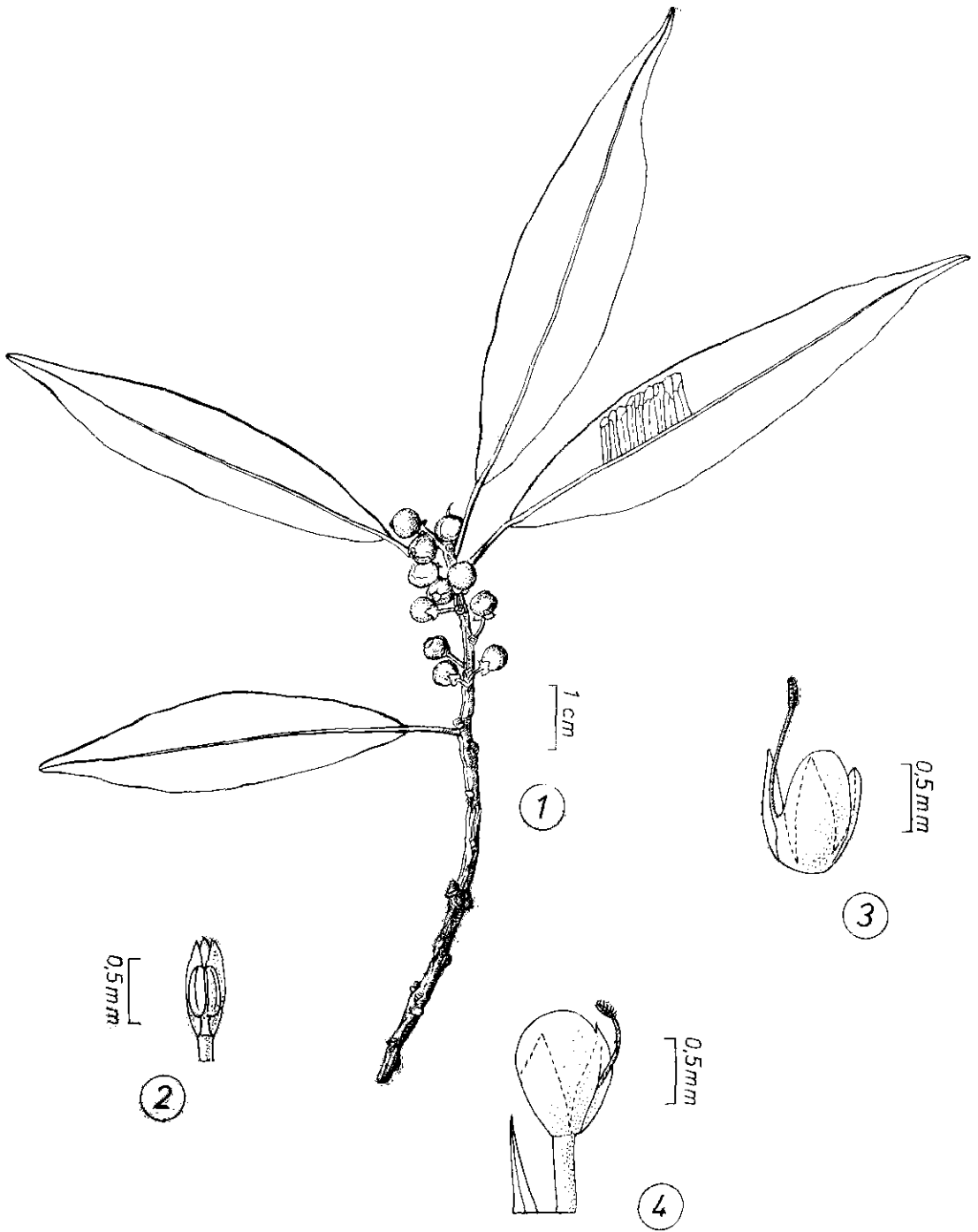


Fig. 6. *Ficus leiophylla*: 1, leafy twig with figs (de Granville & Kahn 5410); 2, staminate flower; 3, seed flower; 4, gall flower with interfloral bract (de Granville 4956).

20 Oct 1981, **Billiet & Jardin 1052** (BR, CAY, U); Montagne de Kaw, PK 34, 14 Mar 1983, **Cremers 8056** (CAY, U) = **Feuillet 888** (CAY); Montagne de Cacao, S of Cayenne, 14 Dec 1980, **de Granville 4258** (CAY, P, U); Kourou, Montagne de Singes, 20 Oct 1981, **de Granville 4956** (CAY, U); Oyapock River, Trois Sauts, 24 Nov 1974, **Grenand 546** (CAY, U); piste de St. Elie, ARBOCEL, 3 Sep 1984, **F. Hallé 3042** (U), 7 Sep 1984, **F. Hallé 3053** (U); Arataye River, Sauts Parare, 25 Aug 1983, **Poncy 579** (CAY, U); piste de St. Elie, km 14, 29 Feb 1979, **Prévost 832** (CAY, MPU, P, U).

This species belongs to subg. **Urostigma** sect. **Americanae** and is probably related to the **F. americana** complex (cf. Berg & Simonis, 1981). It is distinct in having stipules up to 2 cm long, in contrast to the members of the **F. americana** complex, which have stipules only up to 1 cm long; in dried leaves of **F. leiophylla** the lateral veins are obscure above while they are usually distinct in the leaves of members of the **F. americana** complex. The new taxon shows strong similarities to **F. mathewsii** (Miq.) Miq. but it diverges in its longer peduncle (up to 0.2 mm long in **F. mathewsii**) and in its subacute leaf apices (mostly rounded to obtuse, or sometimes obtusely short-acuminate in **F. mathewsii**). **F. leiophylla** can be easily confused with **F. schumacheri** (Liebm.) Griseb., a member of the **F. pertusa** complex. **F. schumacheri** differs from **F. leiophylla** in having the distinct lateral veins in dried leaves, axillary figs, and spotted receptacles.

8. **Ficus piresiana** Vázquez Avila & Berg spec. nov.

Fig. 7.

Arbor. Ramuli puberuli. Folia oblonda, elliptica usque obovata, 6.5-14.5 x 2.5-6 cm, apice rotundata, basi obtusa. Folia utrinque glabra; venis lateralibus utroque latere 20-50; petiolo 0.8-2 cm longo. Stipulae 1-2.5 cm longae. Syconia in foliorum axillis solitaria; pedunculo 0.8-1.2 cm longo; bracteis basalibus 3, persistentibus; receptaculo globoso, 2-3 cm diam.; ostiolo parvo.

Tree up to 30 m tall, with buttresses up to 4 m high. Leafy twigs 2-6 mm thick, sparsely puberulous or glabrous, periderm when dry often flaking off. Lamina oblong to elliptic to (sub)obovate, 6.5-14.5 x 2.5-6 cm, coriaceous, apex rounded to obtuse or (especially when juvenile) acuminate, base obtuse to rounded or to subacute, margin entire; both surfaces glabrous; lateral veins 2x 20-50, connected by a barely arcuate, submarginal vein; glandular spots at the base of the midrib beneath conspicuous; petiole 0.8-3(-3.5) cm long, 1.5-2.5 mm thick, glabrous, epidermis persistent; stipules 1-2.5 cm long, minutely puberulous, caducous. Figs solitary in the leaf axils; peduncle 0.8-1.2 cm long, puberulous; basal bracts 3, 1.5-2 mm long, persistent; receptacle globose, when dry ca. 2-3 cm in diameter, puberulous; ostiole ca. 2.5 mm in diameter, plane or prominent. Staminate flowers disperse, sessile or up to 1 mm long pedicellate; perianth ca. 3 mm high, 4-lobed, sparsely and minutely puberulous, mainly ciliolate; stamens 2, filament ca. 3 mm long (elongating up to 5 mm), anther ca. 2 mm long, apiculate. Pistillate flowers with tepals 4, free, lanceolate to linear (1.5-)2-2.5 mm long, sparsely puberulous, mainly ciliolate; stigmas 2; seed flowers sessile or up to 1 mm long pedicellate, style ca. 2.5-3.5 mm long; gall flowers ca. 2-3 mm long ped-

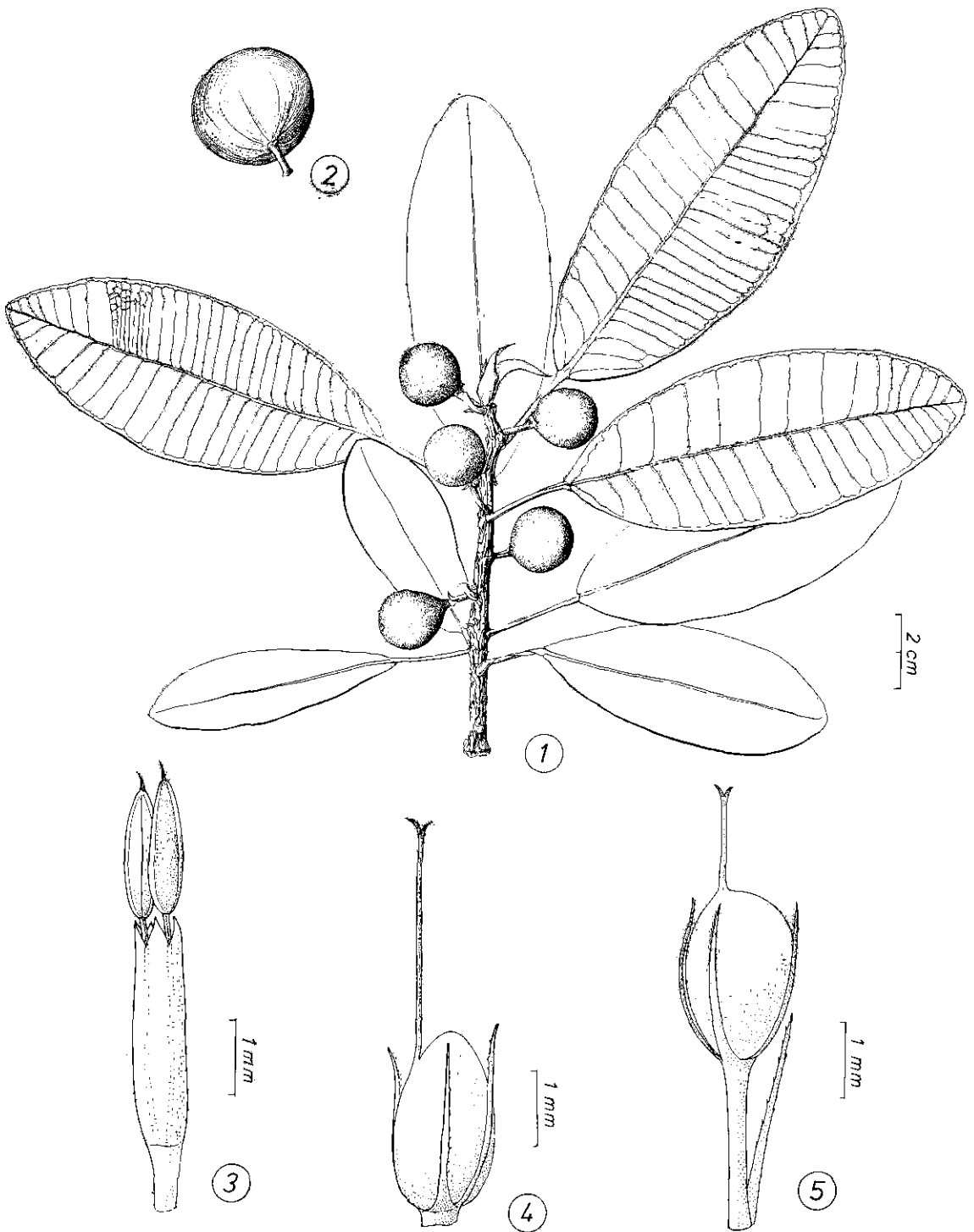


Fig. 7. *Ficus piresiana*: 1, leafy twig with figs (Pires & N.T. Silva 10272); 2, fig; 3, staminate flower; 4, seed flower; 5, gall flower with interfloral bract (Pires 4335).

icellate, style ca. 1-2 mm long. Fruit (sub)ovoid to oblongoid to ellipsoid, ca. 2.5 mm long; gall fruits ellipsoid to obovoid to subglobose, ca. 2 mm long. Interfloral bracts lanceolate to linear, up to 4 mm long, sparsely and minutely puberulous, mainly ciliate.

Types: **Pires 4335**, Brazil, Par , Bel m, IAN (= EMBRAPA) grounds, 10 Oct 1952 (holotype IAN; isotype RB).

Additional collections: Brazil: Par , Maraj , Aranal, 26 Feb 1900, **Huber (HAMP) 1846** (MG); Amap , Rio Oiapoque, near mouth of Rio Ingarari, 25 Sep 1960, **Pires 7789** (IAN); Par , Bel m, Igap  de Mocambo, 4 Nov 1966, **Pires 10187** (IAN); Par , Bel m, IAN (= EMBRAPA) grounds, 5 Nov 1945, **Pires & Black 576** (IAN); Par , Bel m, Igap  do Cat , 21 Oct 1966, **Pires & N.T. Silva 10272** (IAN). French Guiana: piste de St. Elie, Crique Toussaint, 10 Feb 1984, **de Foresta 525** (CAY); 16 Sep 1984, **F. Hall  3068** (U); Approuague River, between Fini Saut and Crique Par pou, 16 Sep 1968, **Oldeman T.140** (CAY, P, U); piste de St. Elie, km 17, 10 Apr 1983, **Pr vost 1291** (CAY, MPU, P, U); Godebert, Wachenhein **76** (P).

F. piresiana belongs to subg. *Pharmacosycea* sect. *Pharmacosycea*. It shows morphological affinities to *F. pulchella* Schott. The epidermis of the petiole flakes off in *F. pulchella* but persists in *F. piresiana*. The petiole is up to 1 cm long in *F. pulchella*, up to 3(-3.5) cm long in *F. piresiana*. The basal bracts are caducous in *F. pulchella*, persistent in *F. piresiana*.

9. *Ficus roraimensis* C.C. Berg spec. nov.

Fig. 8.

Arbor. Ramuli in sicco subangulati, pilis albis, minutis atque aureis, longioribus immixtis. Folia subobovata usque oblonga, 9-13 x 4.5-6.5 cm, apice rotundata usque emarginata, basi obtusa usque subacuta, utrinque puberula, subtus pilis patulis albis, appressis brunneis necnon secus nervos longioribus luteolis sparsim immixtis obsita; venis lateralibus utroque latere 8-12; petiolo 0.8-2 cm longo. Stipulae 0.3-0.7 cm longae, luteo-sericeae usque hirtella. Syconia in foliorum axillis geminata; pedunculo 0.2-0.3 cm longo, luteo-hirtella; receptaculo globoso, 0.6-1 cm diam., puberulo; ostiolo leviter impresso.

Tree. Leafy twigs 2-5 mm thick (when dry \pm angulate), with dense, minute, white hairs, intermixed with longer yellowish hairs. Lamina subobovate to oblong, 9-13 x 4.5-6.5 cm, subcoriaceous, apex rounded (to emarginate), base obtuse to subacute, margin entire; upper surface sparsely and minutely puberulous on the veins, lower surface on the veins minutely puberulous with patent, white hairs and appressed, brown hairs, on the main veins, intermixed with sparse, longer, yellowish hairs; lateral veins 2x 8-12, tertiary venation reticulate; petiole 0.8-2 cm long, ca. 1.5 mm thick, with rather dense, minute, white hairs, intermixed with longer, yellowish hairs; stipules 0.3-0.7 cm long, yellow-hirsute to -hirtellous to -subsericeous, caducous. Figs in pairs in the leaf axils (or just below the leaves); peduncle 0.2-0.3 cm long, yellow-hirtellous; basal bracts 2, 1.5-2 mm long, yellow-hirtellous; receptacle globose, when dry 0.6-1 cm in diameter, puberulous, at maturity probably green; ostiole ca. 2 mm in diameter, slightly

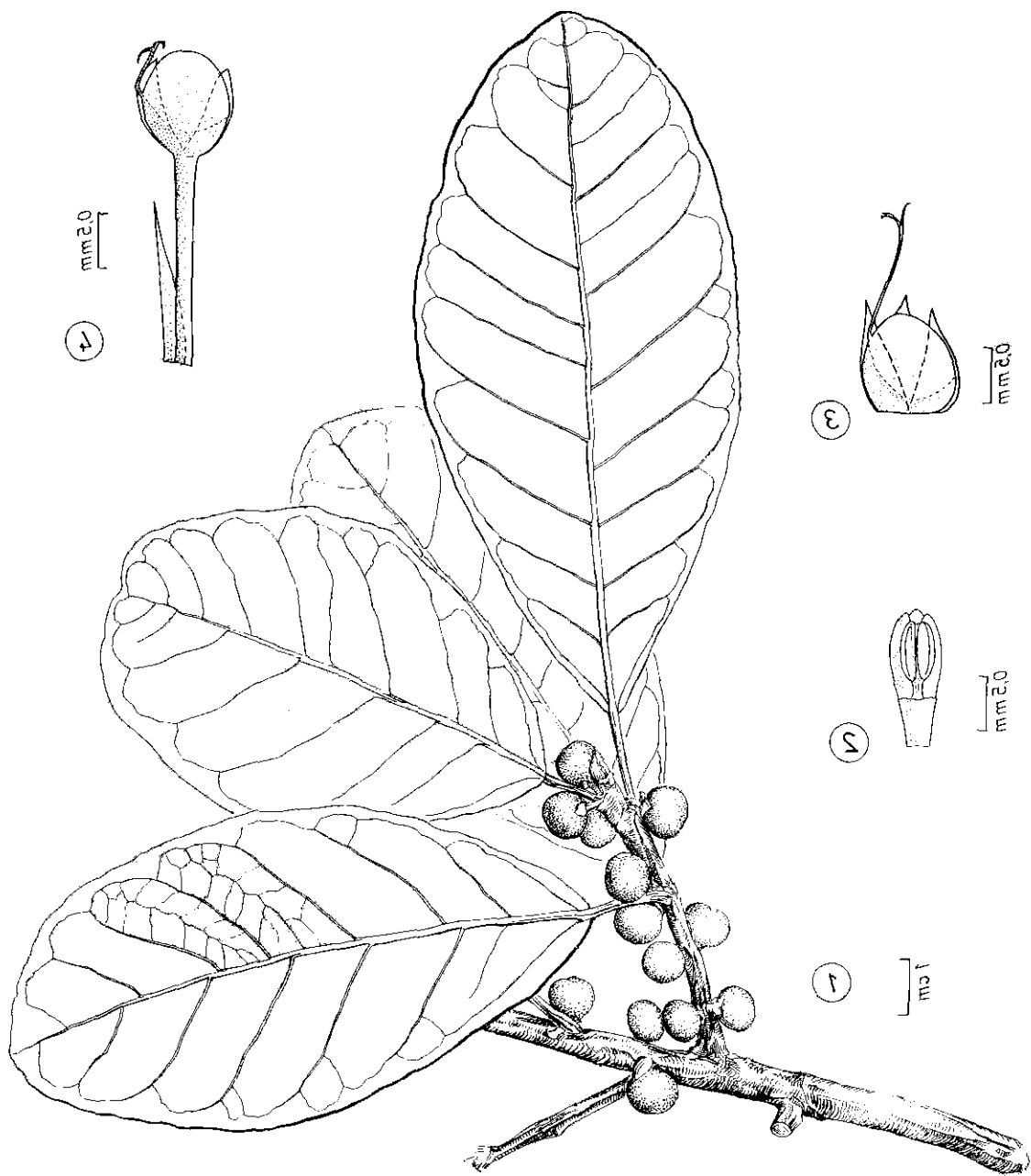


Fig. 8. *Ficus roraimensis*: 1, leafy twig with figs; 2, staminate flower; 3, seed flower; 4, gall flower with interfloral bract (Black & Magalhães 51-12915).

impressed. Staminate flowers disperse; pedicel 0.5-0.7 mm long; tepals 3, (almost) free, ca. 0.8 mm long; stamen 1, filament short, anther ca. 0.6 mm long. Pistillate flowers with tepals 3, (almost) free, 0.8-1.2 mm long, stigmas 2; seed flowers (sub) sessile, style (incl. stigmas) ca. 1.2 mm long; gill flowers 1-2 mm long pedicellate, style (incl. stigmas) 0.5-1 mm long. Fruit ovoid to subglobose, ca. 1 mm long, slightly 2-colored; gill fruit subglobose, ca. 1 mm long. Interfloral bracts up to 1.5 mm long.

Type: **Black & Magalhães 51-12915**, Brazil, Roraima, Rio Mucajaí, Colônia Fernando, 25 Aug 1951 (holotype IAN).

This new species belongs to subg. **Urostigma** sect. **Americanae**. It may be related to *F. gomelleira* Kunth & Bouché, from which it differs in several features, including the presence of appressed brown hairs on the main veins of the lamina beneath, the smaller figs and the lack of a distinct rim around the ostiole.

10. *Ficus vittata* Vázquez Avila spec. nov.

Fig. 9.

Arbor 10-13 m alta. Ramuli in sicco angulati, hirtelli usque subhirsuti. Folia oblonga usque subobovata, 3.5-11 x 1.2-5 cm, apice acuminata, basi obtusa vel acuta, margine revoluta, supra glabra, subtus glabrescentia; venis lateralibus utroque latere 12-15; petiolo 0.6-1.7 cm longo, subhirsuto. Stipulae 1.5-2 cm longae, luteo- usque albo-sericeae. Syconia in foliorum axillis geminata, sessilia, bracteis basalibus connatis; receptaculo subglobozo, 0.5-0.7 cm diam.; ostiolo conico, prominente.

Tree 10-30 m tall. Leafy twigs 2-4 mm thick, angular when dry, pale brown- to yellowish- hirtellous to -subhirsute. Lamina oblong to subobovate, 3.5-11 x 1.2-5 cm, coriaceous, apex acuminate, acumens sharp, base acute to obtuse, margin entire, revolute; upper surface glabrous or with sparse hairs at base of the midrib, lower surface sparsely white-subhirsute on midrib, otherwise glabrescent; midrib prominent beneath; lateral veins 2x 12-15, tertiary venation reticulate; petiole 0.6-1.7 cm long, 1-2 mm thick, white-subhirsute; stipules 1.5-2 cm long, partly (on the basal and median part) yellowish- to white-(sub)sericeous, for the rest puberulous, terminal buds mostly curved. Figs in pairs in the leaf axils, sessile; basal bracts 2, 2.5-3 mm long, mostly connate, coriaceous (the margins membranous), minutely puberulous; receptacle (sub)globose, when dry 0.5-0.7 cm in diameter, with minute, red-brown hairs, when dry the receptacle pale-brown with red-brown longitudinal stripes; ostiole ca. 2 mm in diameter, prominent, conical. Staminate flowers scarce, disperse; pedicel 0.3-0.6 mm long; tepals 3, free, ca. 1.2 mm long; stamen 1, filament short, anther ca. 0.8 mm long, apiculate. Pistillate flowers with tepals 3, free; seed flowers sessile, style ca. 1.6 mm long, stigma 0.3-0.4 mm long; gill flowers 2-2.6 mm long pedicellate, style (incl. stigma) 0.7-1 mm long. Fruit broadly ellipsoid to lenticular, ca. 1 mm long; gill fruit ovoid, 0.8-1 mm long. Interfloral bracts up to 1.8 mm long.

Types: **Simpson & Schunke V. 487**, Peru, Tumbes, prov. Zarumilla, Matapalo, Bosque Nacional de Tumbes, near Campo Verde, 25 Dec 1967 (holotype F; isotypes COL, US).

Additional collections: Colombia: Caldas, Palestina, Hacienda La Prata, Ja-

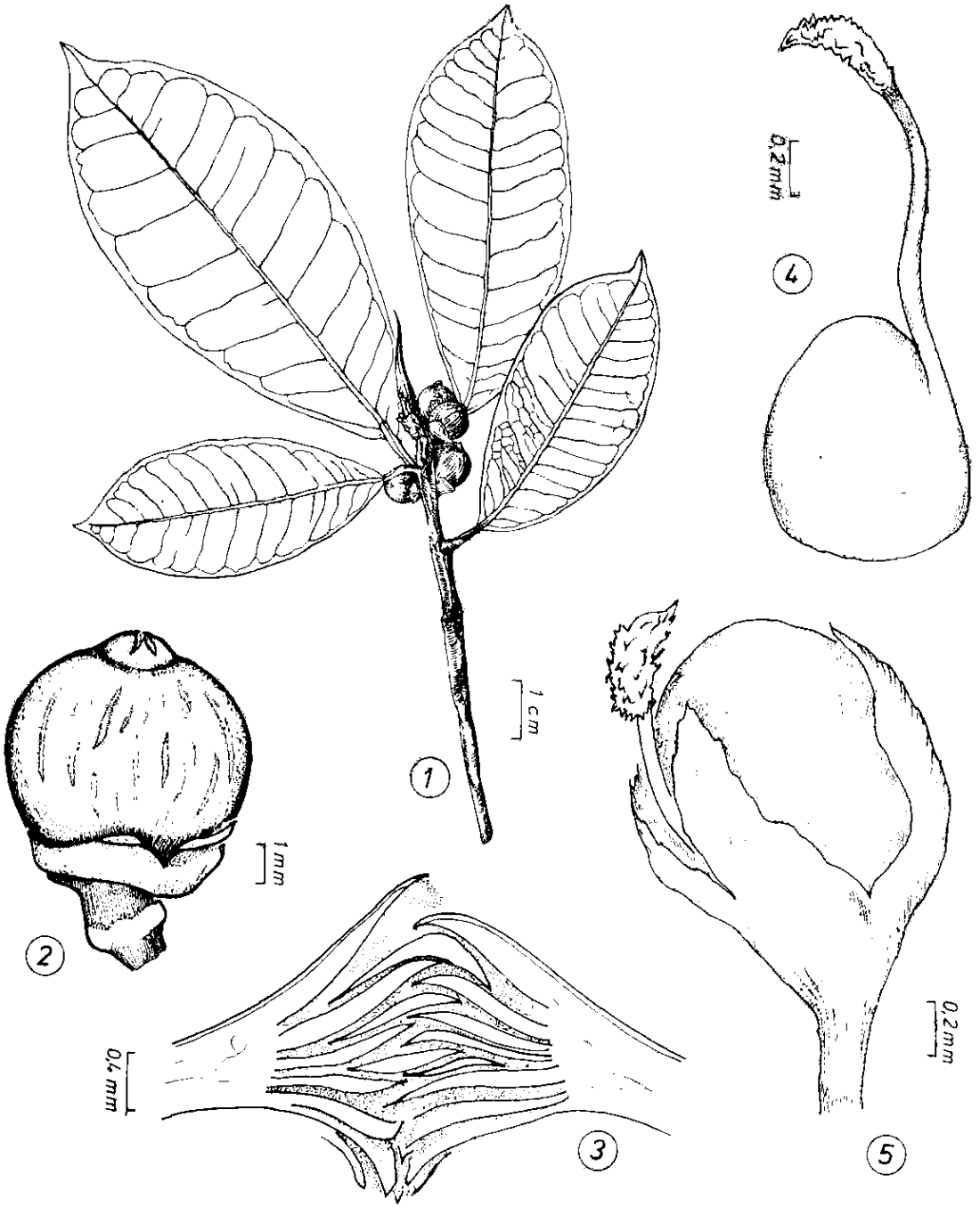


Fig 9. *Ficus vittata*: 1, leafy twig with figs; 2, fig; 3, longitudinal section of the ostiole; 4, seed flower; 5, gall flower (Simpson & Schunke V. 487).

ramillo 200 (COL). Ecuador: Chimborazo, Cañon of Río Chanchan, between Naranjapata and Huigra, Camp E-3877 (NY); Imbabura, between Shashipamba to Pimampiro, ca. 2750 m, Acosta Solis 14538 (F); El Oro, trail between Portovelo and Zaruma, Steyermark 53988 (F).

This new species belongs to subg. *Urostigma* sect. *Americanae* and appears to be related to *F. hartwegii* (Miq.) Miq., from which it differs in the angular leafy twigs (in dried specimens) and longer, usually curved, terminal buds. Moreover, the basal lateral veins of the lamina are almost at right angles to the midrib in *F. vittata*, but conspicuously ascending in *F. hartwegii*.

RESUMO

Dez novas taxa são descritas para Amazônia e as Guianas: *Ficus aripuanensis* C.C. Berg & F. Kooy, *F. blepharophylla* Vázquez Avila, *F. cremersii* C.C. Berg, *F. insipida* Willd. ssp. *scabra* C.C. Berg, *F. jacobii* Vázquez Avila, *F. lauretana* Vázquez Avila, *F. leiophylla* C.C. Berg, *F. piresiana* Vázquez Avila & Berg, *F. roraimensis* C.C. Berg e *F. vittata* Vázquez Avila.

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