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Systena silvestrii Bechyné (Coleoptera: Chrysomelidae): Redescription, New distribution and adult host records

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ABSTRACT

The flea beetle *Systena silvestrii* Bechyné 1957 was studied in context with the evaluation of natural enemies of the alligator weed, *Alternanthera philoxeroides* (Martius) Grisebach (Amaranthaceae). The female is described and the holotype male is redescribed adding new diagnostic characters: mouthparts, hind wings, metendosternite, male and female genitalia. Differences in color patterns between *S. silvestrii*, *S. marcapatensis* Bechyné, *S. scurra scurra* Scherer and *S. scurra ajonjoli* Bechyné &Bechyné are considered. This flea beetle was collected mostly on alligator weed but also on *Phyla canescens* (Vebenaceae), in Argentina, Uruguay, Paraguay and Brazil. Therefore, further evaluation is strongly recommended prior to its consideration for biocontrol of *A. philoxeroides*.

Key words: Alticinae, *Alternanthera philoxeroides*, *Systena silvestrii*, biological control, alligatorweed.

INTRODUCTION

Alligator weed, *Alternanthera philoxeroides* (Martius) Grisebach (Amaranthaceae) is an amphibious perennial native to southern South America. Two forms of the plant occur in Argentina: *A. philoxeroides* f. *philoxeroides* (Mart.) Griseb. in the southern range (Buenos Aires Province), and *A. philoxeroides* f. *angustifolia* S¸ssenguth in the northern range (northeastern Argentina). The latter is also present in northwest Argentina, but it is uncertain whether those are relict or introduced populations (Vogt 1961, Sosa et al. 2004). Alligator weed was introduced into several countries, including the United States and Australia, and is now considered a serious aquatic and terrestrial weed.

We have recently conducted surveys in Argentina, Uruguay, Paraguay and Brazil to detect the native range of alligator weed and its natural enemies. Most of the biolcontrol research efforts on alligator weed were concentrated on a group of flea beetles in the genera *Disonycha* Chevrolat, *Agasicles* Jacoby, and *Systena* Chevrolat.

The New World genus *Systena* contains about 100 species, including 11 species and subspecies in temperate and subtropical areas of Argentina (Cabrera and Roig-JuÒent 1998). Some members of this genus cause severe damage to cultivated plants (Jolivet and Hawkeswood 1995), however little is known about their role as possible biological control agents of weeds. Vogt (1961) suggested three

species of *Systena* as possible suppressants of alligator weed; but they were not identified and their biologyies, and host ranges, were not reported.

In our field studies we found several species of *Systena* feeding on alligator weed. One of these, *S. nitentula* Bechyné was recently described (Cabrera et al. 2005). In this work, we focus on the species *Systena silvestrii* Bechyné, recorded from Brazil and Argentina in 1957. Since then, only one collection record of this species (Bechyné and Bechyné 1961) has been available. Bechyné's original description was based on color pattern and some detail of external morphological characters. However, other morphological features in addition to color have been used to distinguish *Systena* species, like mouthparts, hind wings, metendosternite, binding patch, and details of male and female genitalia (Lingafelter et al. 1998), which provide a more suitable treatment of this genus.

We deemed it necessary to provide detailed descriptions and accurate determinations of the species of *Systena* as a first step towards a better understanding of the relation insect-host plant relationships, needed to conduct studies for biocontrol of *A. philoxeroides*. The purpose of this paper is to enlarge the original description of the holotype male of *Systena silvestrii* and to provide the first description of the female adding morphological characters like those of mouthparts, wing venation, biding patch, metendosternite, and some details of male and female genitalia. Additionally, biological notes, including field and laboratory host range, and geographical distribution are presented.

MATERIAL AND METHODS

Surveys were conducted in Argentina, southern Paraguay, Uruguay, and southern Brazil (30ſ-40ſ S, 65ſ-50ſW) to look for natural enemies of alligator weed, particularly the flea beetle *S silvestrii*. Adults were collected from plants and preserved in 70% ethyl alcohol and identified up to species in the laboratory.

Morphological descriptions were based on the male holotype and field-collected and laboratory reared specimens. Other specimens that we studied belong to the collections of the following institutions: Museu de Zoologia, Universidade S„o Paulo, S„o Paulo, Brazil (MZSP), Instituto de Zoología Agrícola, Maracay, Venezuela (IZAV) and Naturhistorisches Museum, Basel, Switzerland (NHMB). Morphological terminology generally follows Lingafelter et al. (1998), mouthparts (Cabrera and Durante 2001), hind wing (Kukalova-Peck and Lawrence 1993), metendosternite (Lingafelter and Konstantinov 2000) and metafemoral spring (Furth 1982), male genitalia (Lindroth and Palmén 1970) and (Mann 1985), female genitalia (Konstantinov 1998, 2002). The abbreviations used to mention the venation scheme are: SC: subcosta, RA: radial anterior, RP: radial posterior, r4: radial cross vein 4, MP: medial posterior, RP-MP2: radio-medial cross-vein 2, CuA: cubital anterior, AA: anal anterior.

Measurements were taken using an ocular micrometer on a Wild dissecting microscope at 25X. Ranges are indicated in millimeters with the average and standard error in brackets. Measurements and abbreviations used in the text are eye length (eL); eye width (eW); interocular distance (OD); interantennal distance (AD); antennomeres length (A1, A2); length of pronotum (PL); pronotum width (PW); humeral width (HW); elytral length (EL); elytral width (EW) (as defined by Cabrera and Cabrera Walsh (2004), and Cabrera et al. (2005)). Body length was measured from the posterior margin of the eyes to the apex of the

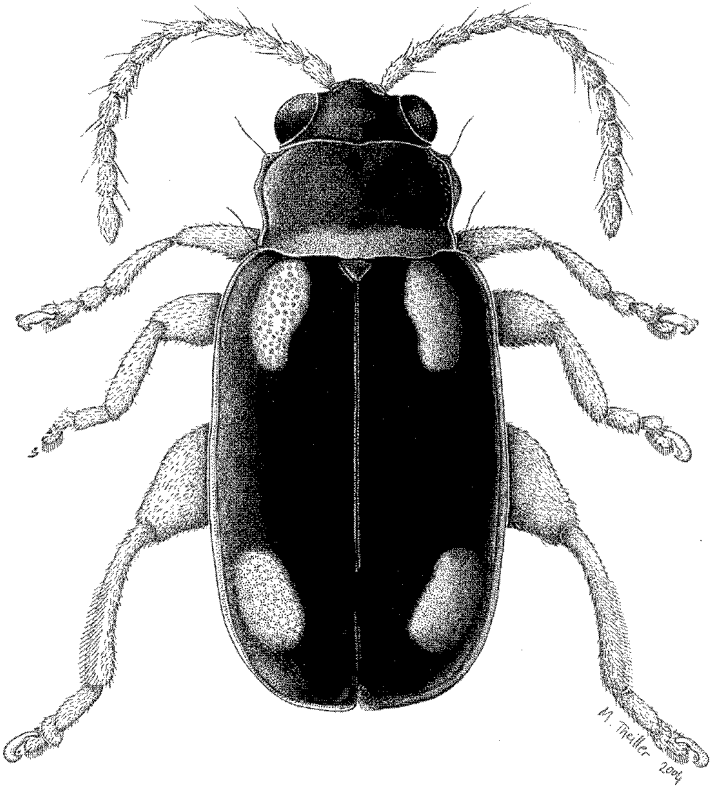


Fig. 1. *Systena silvestrii* Bechyné. female, dorsal habitus.

ongest elytron. Relative proportions for eL/eW, AD/eW, AD/OD, PW/PL, HW/
PW and EW/HW were computed.

Drawings were made using a camera lucida on a Leitz compound micro-
cope and a Wild dissecting microscope. The head and binding sites of elytra
vere mounted on metal studs and coated with gold-palladium for electron micro-
graphs with a Scanning Electron Microscope (SEM) Jeol SMZ 1500.

Voucher specimens have been deposited at the Museo de La Plata, (MLP),
Argentina, and the USDA-ARS-South American Biological Control Laboratory
(SABCL), Hurlingham, Buenos Aires.

RESULTS AND DISCUSSION

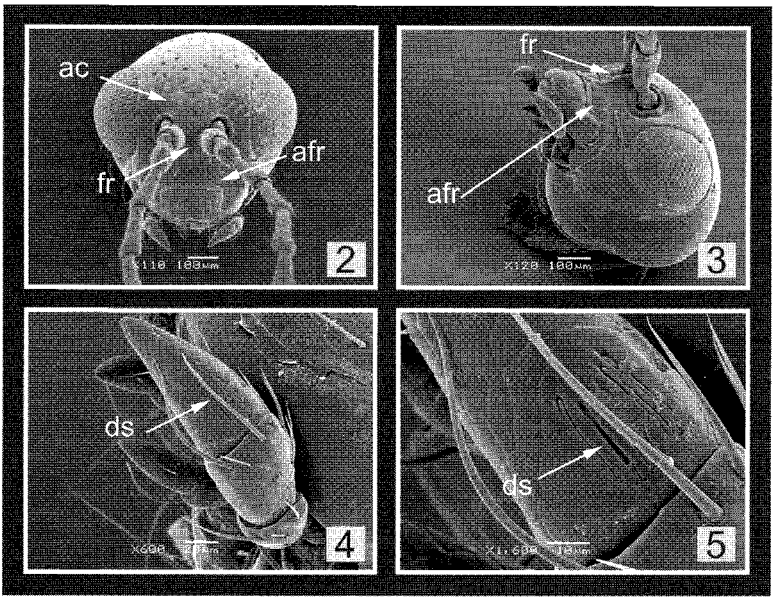
Systena silvestrii Bechyné, 1957
Figs. 1- 25

Systena silvestrii Bechyné, 1957. Ann. Mus. civ. Stor. Nat. Genova 69: 55.
Systena silvestrii Bechyné & Bechyné, 1961. Bol. Mus. Para. E. Goeldi 37: 65.

Male. (Fig. 1) Small-sized species, length. 2.85 mm, width. 0.85 mm, habitus oval, slightly convex.

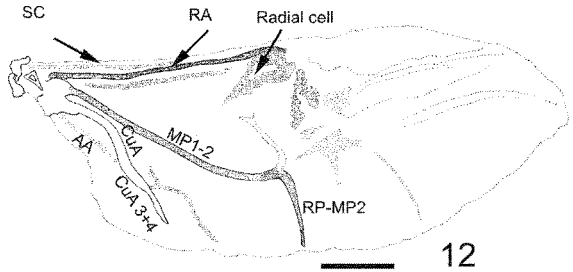
Color. Head capsule piceous, mouthparts yellowish, the apical one-third of mandibles dark brown, antennomeres 1-6 flavous, outer margin light brown, antennomeres 7-11 brown. Pronotum piceous with a flavous central vitta basally. Procoxae yellowish tinged with flavous brown, femora and tibiae yellow, basal one-third of metafemora brown; tarsi light brown. Scutellum and elytra piceous, elytropleura flavous, each elytra with two yellow spots, one antemedial, small, elongate, comma-shaped, extending from basal margin to approximately one-third of elytra and a postmedial rounded spot not reaching the apical margin. Venter: Prosternum yellowish between coxae, dark brown laterally, meso-metasternum and abdomen dark brown, sternite seven yellowish.

Head. (Figs. 2-3) Vertex finely punctate, some sparse coarse punctures above the antennal calli; antennal calli slightly convex, subtriangular, narrower than the antennal sockets; midfrontal sulcus deeply impressed; antennal sockets close to the anterior margin of eyes, distance antennal sockets/ eye approximately less than the half the interantennal distance; interantennal space 0.26 as wide as transverse diameter of eye. Eyes convex, eL/eW 1.69mm, supraorbital pore above eye, almost in the middle of the longitudinal middle line of the eye. Frontal ridge raised; anterofrontal ridge lower than the frontal ridge. Antennae 11-segmented, inserted below midline of eyes, extending beyond humeral calli; antennomere 2 shorter than 3, antennomeres 4-10 elongate, similar in length, antennomere 11 apically acuminate. Antennomeres 1-4 scarcely setose, antennomeres 5-11 densely setose throughout, all antennomeres with erect, sparse setae at apex. Clypeus with eight preapical setae. Labrum, (Fig. 6) with lateral margins rounded, dorsal surface covered with short sensilla on lateral and near apical margin, a row of four long setae at mid length, ventrally ten short, thick setae in apical margin. Mandibles (Fig. 7) five-toothed, teeth 1-2 visible on internal face, moderately acute, tooth 1 less than one-half the length of the 2nd , teeth 3-5 visible on external face, tooth 3 narrow, acute, 2.0 times longer than 4, tooth 4 scarcely longer than the 5th tooth 5, short, blunt at apex, mola absent. Maxillae (Fig. 8) with cardo apically broadened, with two short setae near outer margin; basistipes with one setae close to outer margin; galea and lacinia well developed, with a fringe-like pilosity apically; apex of galea rounded, distal part subequal to the base. Maxillary palpi well developed, surpassing the galea, palpomere 1, short, subquadrangular, palpomere 2 subcylindrical palpomere 3 subquadrate, more than one half the length of palpomere 2, palpomere 4 subconical with wide base, longer than 3rd , tapering strongly apically, digitiform sensillum patch (Figs. 4-5) on the external-basal corner, subrectangular, formed by seven imbedded sensilla. Labium (Fig. 9) with ligula globose, bearing five setae. Bases of palps close to each other, palpomere 1 rectangular; palpomere 2 subquadrate, 2.0 times shorter than the 3rd; palpomere 3 subconical with narrow base, 1.5 times longer than 2.



Figs. 2-5. *Systena silvestrii* Bechyné, 2, head, frontal view; 3, head, lateral view; 4, maxilla, detail of maxillary palp; 5, maxilla, detail of palpomere 4 with digitiform sensillum. Abbreviations: ac, antennal callus; afr, anterofrontal ridge; ds, digitiform sensillum; fr, frontal ridge.

Thorax. Pronotum slightly convex, rectangular, 1.73 times wider than long, widest at middle, PW 0.85 mm; surface shiny, densely covered by minute punctures; anterior margin almost straight, lateral sides slightly expanded anteriorly, posterior margin arched; anterior callosity well produced, rounded, posterior callosity poorly developed, dentiform; each one bearing a long seta. Prosternum convex; intercoxal prosternal process thin, strongly widened between procoxae; procoxal cavities closed, oval. Scutellum triangular, rounded at apex. Mesepimeron narrow, developed beyond basal 1/3 of mesepisternum. Mesosternum short, intercoxal mesosternal process strongly bilobed, reaching more than half the length of mesocoxae. Metanotum transverse, metanotal ridge *d* (Fig. 10) intersecting *c* posterior to midpoint of *c*, ridge b_1 intersecting *a* below the median groove. Metendosternite (Fig. 11) with stalk longer than wide; lateral arms, bent apically; mesofurcal-metafurcal tendons inserted almost middle of lateral arms. Hind wings (Fig. 12) with veins RA, MP, CuA well sclerotized, whereas veins CuA_2 RP-MP_2 and AA scarcely sclerotized. Vein SC connected to RA about the half its length, radial cell darkly pigmented, elongate, subtriangular; RP-MP_2 not reaching r_4; vein AA unbranched and connected to CuA_{3+4} less than half the distance from the origin of CuA; CuA_2 attached to CuA, cubital anal cell closed, elongate; cubital anal cell 2 absent. Elytra oval, convex, surface densely, uniformly punctuate; punctures somewhat coarser than on pronotum, more finely punctuate at apex; elytra slightly wider than pronotum, HW/PW 1.39, humeral calli rounded, slightly



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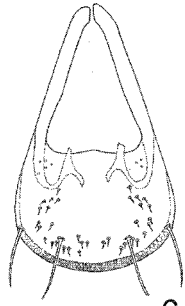

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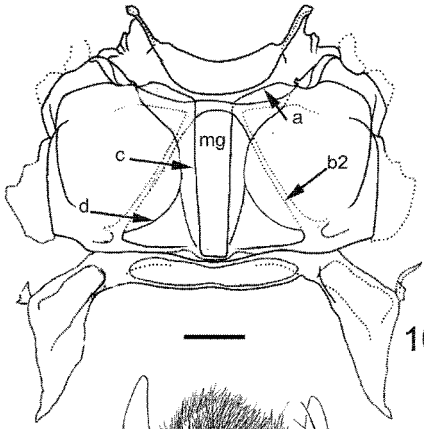

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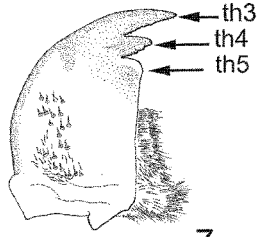

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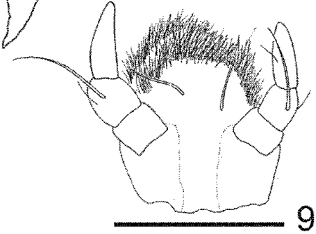

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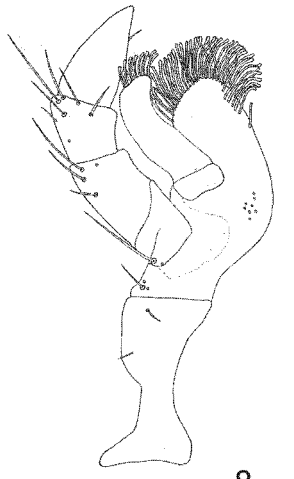

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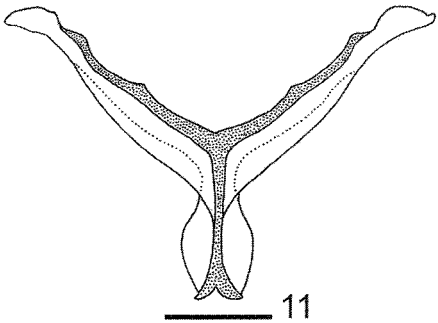

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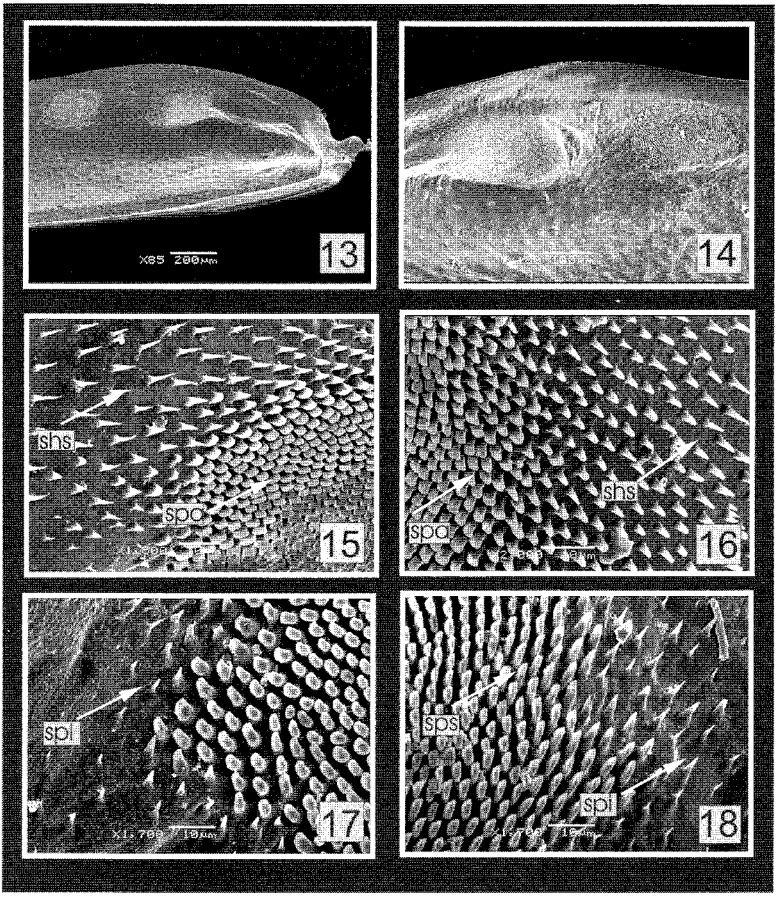
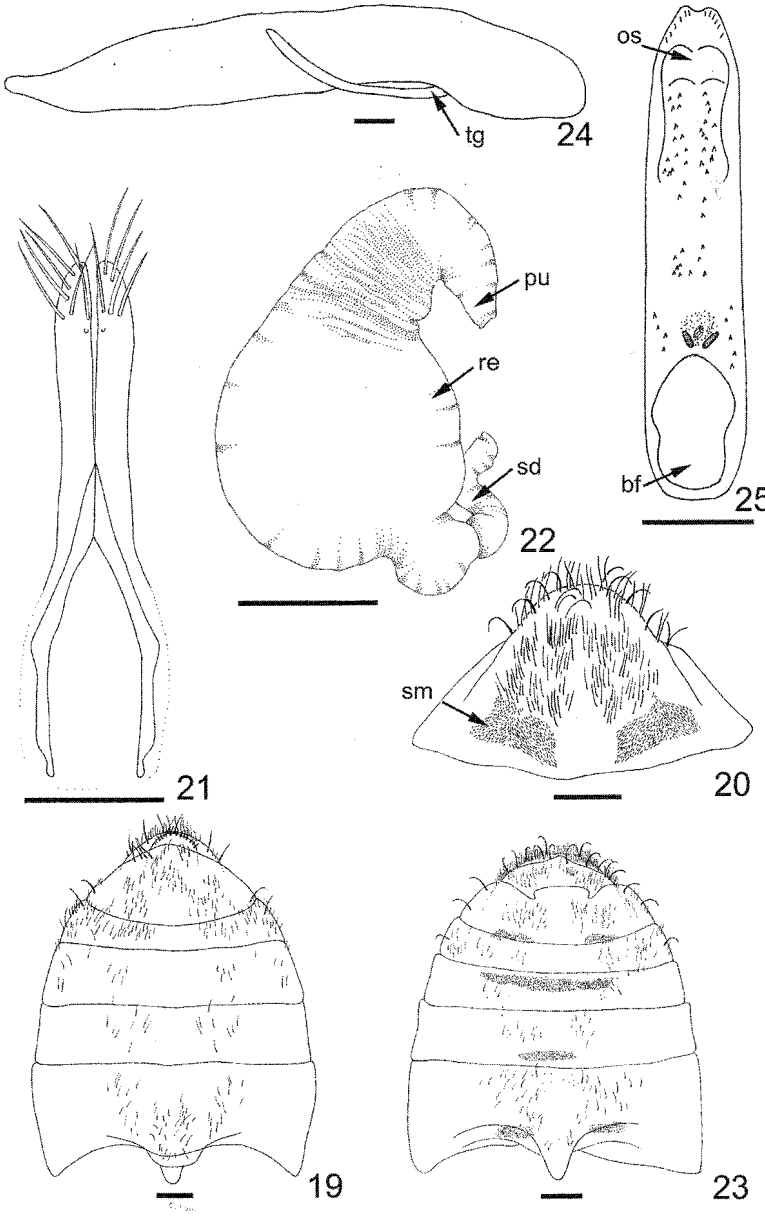
Figs. 6-12. *Systena silvestrii* Bechyné. 6, labrum, dorsal view; 7, mandible, external face; 8, maxilla, ventral view; 9, labium, ventral view; 10, metanotum; 11, metendosternite, ventral view; 12, hind wing. Abbreviations: a, metanotal ridge a; AA, anal anterior vein; b2, metanotal ridge; c, metanotal ridge c; CuA, cubitoanal vein; CuA 3+4, cubito anal vein 3+4; d, metanotal ridge d; mg, median groove; MP 1-2, medial posterior vein 1-2; RA, radial anterior vein; RA, radial cell; RP-MP2, radial posterior-medial posterior vein 2; SC, subcostal vein; th3, tooth 3; th4, tooth 4; th5, tooth 5. Scale bars= 0.1mm.



Figs. 13-18. *Systena silvestrii* Bechyné. 13, elytron, ventral view, detail of binding patches; 14, same as Fig. 13; 15, anterior binding patch showing anterior portion covered with spatulate shaped spicules and isolated shark tooth-shaped spicules anteriorly, 16, anterior binding patch, detail of posterior portion covered with spatulate shaped spicules and shark tooth-shaped spicules on distal area; 17, posterior binding patch showing anterior portion covered with spoonbill shaped spicules and shark tooth-shaped spicules on distal area; 18, posterior binding patch showing posterior portion covered with spoonbill shaped spicules and isolated spiniform spicules on distal area. Abbreviations: shs, shark tooth spicule; spa, spatulate spicules; spi, spiniform spicules; sps, spoonbill spicules.

prominent, EW/HW 1.22; greatest width near apical one thirds of elytra; epipleura subvertical, basally broad, gradually narrowed at basal 1/3 the length of elytra, basal inner surface of elytra with two binding patches (Figs. 13-14) the anterior oval, uniformly covered with spoonbill-shaped spicules (Figs. 15-16), the posterior uniformly covered with stump shaped spicules, and small shark tooth shaped spicules on the basal area (Figs.17-18). All legs similar in shape, metafemora moderately enlarged, tibiae with apical spurs; tarsomere 1 of front and median



Figs. 19-25. *Systena silvestrii* Bechyné. 19, abdomen, female, ventral view; 20, abdomen, female, detail of tegite 7; 21, vaginal palpi; 22, spermatheca; 23, abdomen, male, ventral view; 24, median lobe, lateral view; 25, median lobe, dorsal view. Abbreviations: bf, basal foramen; cm, compound microtrichia; os, ostium; pu, pump; re, receptacle; sd, spermathecal duct; sm, spiniform microtrichia; tg, tegmen. Scale bars= 0.1mm.

legs long, subequal in length to tarsomeres 2+3 together, longer than these tarsomeres in hind legs, tarsomere 2 short in the four anterior legs, longer in hind legs; tarsal claws appendiculate.

Abdomen. Apex of tergite 7 slightly protruded, margin with about 11 curved setae, base with two lateral triangular areas covered with scattered spiniform microtrichia, indistinct with low magnification; sternite 7 with a thin longitudinal median depression, apical margin truncate covered with numerous short setae.

Genitalia. Median lobe (Fig. 24) evenly curved in lateral view, apex bent dorsally. In dorsal view (Fig. 25), lateral sides nearly parallel, apex slightly emarginated, apical end with a subapical transverse impression; surface of internal sac granulose, with a rounded sclerotized plate and other small ones; arms of tegmen two times longer than stem.

Measurements (n=10). Body length: 3.06- 3.59mm (= 3.22), eL: 0.29-0.39mm (= 0.35 ± 0.03), eW: 0.23- 0.26mm (0.24 ± 0.01), OD: 0.36- 0.39mm (0.37 ± 0.01), AD: 0.06- 0.13mm (0.09 ± 0.02), A1: 0.19-0.26mm (0.23 ± 0.03), A2: 0.09- 0.13mm (0.12 ± 0.01), A3: 0.13- 0.16mm (0.15 ± 0.01), A4: 0.13-0.19mm (0.17 ± 0.02), PL: 0.49- 0.62mm (0.54 ± 0.04), PW: 0.85- 0.99mm (0.89 ± 0.05), EL: 2.17- 2.31mm (2.22 ± 0.047), EW: 1.32-1.65mm (1.50 ± 0.16), PW/PL: 1.51- 2.02 (1.64 ± 0.20), EW/HW: 1.09- 1.25 (1.15 ± 0.06), AD/eW: 0.26-0.50 (0.31 ± 0.09), AD/OD: 0.16- 0.36 (0.26 ± 0.07), eL/eW: 1.26- 1.69 (1.46 ± 0.15).

Female. The specimens examined are similar in color and sculpturing to the males, longer and broader. Sternite seven dark brown.

Thorax. More finely punctuate than in female. Elytra wider than female.

Abdomen. Tergite 7 (Figs. 19-20) triangular, covered with numerous long setae evenly distributed, four long, curved setae on each lateral margin, and seven apical setae on the disc. Base densely covered with spiniform microtrichia centrally and laterally; margin of sternite 7 rounded, surface covered with long, sparse setae and three curved setae on lateral sides.

Genitalia. Tignum long, slender, curved posteriorly, sharp at apex, eleven short setae on apical margin; vaginal palpi (Fig. 21) divergent at base, nearly contiguous at apex, with about ten setae. Receptacle of spermatheca (Fig. 22) widely rounded, pump bent to receptacle, thin, sharp at apex. Spermathecal gland thin, enlarged to the apex. Spermathecal duct long. uncoiled, proximal part wide, sclerotized.

Measurements. (n= 12). Body length: 3.38- 3.59mm (3.48 ± 0.04), eL: 0.29-0.36mm (0.32 ± 0.04), eW: 0.23mm (0.23), OD: 0.39- 0.42mm (0.41 ± 0.01), AD: 0.09- 0.136 mm (0.12 ± 0.02), A1: 0.19- 0.29mm (0.23 ± 0.05), A2: 0.09-0.13mm (0.11 ± 0.02), A3: ∑0.13- 0.13mm (0.14 ± 0.01), A4: 0.16- 0.19mm (0.18 ± 0.01), PL: 0.49- 0.62mm (0.52 ± 0.06), PW: 0.85-0.92mm (=0.92 0.05), EL: 2.24- 2.31mm (2.27 ± 0.04), EW: 1.45-1.65mm (1.55 ± 0.11), PW/PL:1.48- 2.07 (1.81 ± 0.23), EW/HW: 1.13- 1.25 (1.19 ± 0.06), AD/eW: 0.39- 0.56 (0.51 ± 0.08), AD/OD: 0.21- 0.33 (0.28 ± 0.05), eL/eW: 1.26- 1.56 (1.41 ± 0.17).

Remarks.— *S. silvestrii* is easily separated from the other species in Argentina by the presence of yellow spots in the elytra. Bechyné (1957) placed this species closely related to *S. marcapatensis* Bechyné, 1955. This is a reddish brown species described from Peru that has three spots on each elytron.

Specimens of *S. silvestrii* are similar to those of *S. scurra scurra* Scherer, 1960, described from Brazil (Rio Grande do Norte) and *S. scurra ajonjoli* Bechyné & Bechyné, 1969, from Venezuela. They have similar color patterns, however, *Systena silvestrii* is a smaller species which differs from them by the presence of only two spots on each elytron, piceous pronotum (testaceous in *S. s. scurra* and sometimes castaneous in *S. s. ajonjoli*) finely punctate (punctures coarser in pronotum of *S .s. scurra* and *S. s. ajonjoli,* especially in the last one). Males of *S. silvestrii* also can be differentiated from the shape of the apex of the median lobe.

Distribution.— *S. silvestrii* was originally mentioned from Argentina: Jujuy, Chaco and Misiones provinces and Brazil (S„o Paulo and Rio de Janeiro states) (Bechyné and Springlov· de Bechyné 1961). Based on material collected and other deposited in the Museu de Zoologia, Universid São Paulo (MZSP), we add here Salta Province (Argentina), and the states of Mato Grosso and Santa Catarina states (Brazil): The range of *S. silvestri*i includes, according to the biogeographic scheme proposed by Cabrera and Willink *(1980), the f*ollowing biogeographical regions: 1) Chacoan, constituted by a matrix of wetlands with patches of xeric woodlands, 2) Paranaense subtropical rain forest (Misiones and northeast of Corrientes Province); 3) Yungas, subtropical mountain rain forest (eastern mountains slopes of Tucum·n, Salta and Jujuy provinces); and (Amazonian Domain. southeastern Brazil). Further fieldwork willould allow us help to (fit) determine the geographical rang*e of S. silves*trii in Agentina and southern Brazil.

Biological Notes.— In the field only adults were observed and none larvae could reach the adult in the laboratory, presumably due to particulars of feeding and pupating conditions. The adults of this species are are ddefoliators, while in the larvae emerge and enter into the stems upon eclosion, to feed and live inside these.

The species was collected mostly on alligator weed, the target weed; however, in two places (El Rey and Calilegua National Parks, Yungas) it was also found feeding on *Phyla canescens* (Kunth) Greene: Verbenaceae. This latter field observation indicatesmandates a cautious, further evaluations are necessary before we forward prior to its consider this insect as a candidate for theas potential biological control agents of *A. philoxeroides*.

Type material studied.—Bechyné normally used the word "Type" or "Holotype" *on his identifica*tion label to indicate the holotype, he labelled the *S. silvestrii* male specimen as follows: Argentina: Jujuy, Perales, 4-II-1950 typeface/ Type *Systena silvestrii m.,* handwritting, J. Bechyné det. 1956, typeface. This specimen is deposited at the Naturhistorisches Museum, Basel, Switzerland (NHMB)

Other material examined.—ARGENTINA: Jujuy: 3 males, 1 female, Rt. 34 km (SABCL). Salta, Rt. 34 km 2 males, 4 females, 22-V-02, Sosa col. (SABCL). Misiones: San Ignacio, 1 male, 2 females, 6-XI-03, Sosa and Dorado col. (SABCL).

BRAZIL: Mato Grosso: Rio Herval, Río Paran·, 3 males, 2 females, Dirings. col., Bechyné det., 1964 (MZSP), 3 males, 4 females, mismos datos, XII, 1952, B. Pohl, Bechyné det. 1964, (IZAV). Santa Catarina: Anita Garibaldi, 1...B, Dirings. col. 1964 (MZSP), S„o Paulo, 2 females, 26-II-1949, Lenko col., Bechyné det. 1957 (MZSP), Parque do Estado, 3 males, 2 females, 25-III-1962, (IZAV); S. Bocaína, Parq. Criac. Trutes, 2 males, 2 females, S. P. marco-1954, Daicy Barros (IZAV), Burili, 1 male, 9-II-1961, J.& B. Bechyné (IZAV).

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Abdomen. Apex of tergite 7 slightly protruded, margin with about 11 curved setae, base with two lateral triangular areas covered with scattered spiniform microtrichia, indistinct with low magnification; sternite 7 with a thin longitudinal median depression, apical margin truncate covered with numerous short setae.

Genitalia. Median lobe (Fig. 24) evenly curved in lateral view, apex bent dorsally. In dorsal view (Fig. 25), lateral sides nearly parallel, apex slightly emarginated, apical end with a subapical transverse impression; surface of internal sac granulose, with a rounded sclerotized plate and other small ones; arms of tegmen two times longer than stem.

Measurements (n=10). Body length: 3.06- 3.59mm (= 3.22), eL: 0.29-0.39mm (= 0.35 ± 0.03), eW: 0.23- 0.26mm (0.24 ± 0.01), OD: 0.36- 0.39mm (0.37 ± 0.01), AD: 0.06- 0.13mm (0.09 ± 0.02), A1: 0.19-0.26mm (0.23 ± 0.03), A2: 0.09- 0.13mm (0.12 ± 0.01), A3: 0.13- 0.16mm (0.15 ± 0.01), A4: 0.13-0.19mm (0.17 ± 0.02), PL: 0.49- 0.62mm (0.54 ± 0.04), PW: 0.85- 0.99mm (0.89 ± 0.05), EL: 2.17- 2.31mm (2.22 ± 0.047), EW: 1.32-1.65mm (1.50 ± 0.16), PW/PL: 1.51- 2.02 (1.64 ± 0.20), EW/HW: 1.09- 1.25 (1.15 ± 0.06), AD/eW: 0.26-0.50 (0.31 ± 0.09), AD/OD: 0.16- 0.36 (0.26 ± 0.07), eL/eW: 1.26- 1.69 (1.46 ± 0.15).

Female. The specimens examined are similar in color and sculpturing to the males, longer and broader. Sternite seven dark brown.

Thorax. More finely punctuate than in female. Elytra wider than female.

Abdomen. Tergite 7 (Figs. 19-20) triangular, covered with numerous long setae evenly distributed, four long, curved setae on each lateral margin, and seven apical setae on the disc. Base densely covered with spiniform microtrichia centrally and laterally; margin of sternite 7 rounded, surface covered with long, sparse setae and three curved setae on lateral sides.

Genitalia. Tignum long, slender, curved posteriorly, sharp at apex, eleven short setae on apical margin; vaginal palpi (Fig. 21) divergent at base, nearly contiguous at apex, with about ten setae. Receptacle of spermatheca (Fig. 22) widely rounded, pump bent to receptacle, thin, sharp at apex. Spermathecal gland thin, enlarged to the apex. Spermathecal duct long. uncoiled, proximal part wide, sclerotized.

Measurements. (n= 12). Body length: 3.38- 3.59mm (3.48 ± 0.04), eL: 0.29-0.36mm (0.32 ± 0.04), eW: 0.23mm (0.23), OD: 0.39- 0.42mm (0.41 ± 0.01), AD: 0.09- 0.136 mm (0.12 ± 0.02), A1: 0.19- 0.29mm (0.23 ± 0.05), A2: 0.09-0.13mm (0.11 ± 0.02), A3: ∑0.13- 0.13mm (0.14 ± 0.01), A4: 0.16- 0.19mm (0.18 ± 0.01), PL: 0.49- 0.62mm (0.52 ± 0.06), PW: 0.85-0.92mm (=0.92 0.05), EL: 2.24- 2.31mm (2.27 ± 0.04), EW: 1.45-1.65mm (1.55 ± 0.11), PW/PL:1.48- 2.07 (1.81 ± 0.23), EW/HW: 1.13- 1.25 (1.19 ± 0.06), AD/eW: 0.39- 0.56 (0.51 ± 0.08), AD/OD: 0.21- 0.33 (0.28 ± 0.05), eL/eW: 1.26- 1.56 (1.41 ± 0.17).

Remarks.— *S. silvestrii* is easily separated from the other species in Argentina by the presence of yellow spots in the elytra. Bechyné (1957) placed this species closely related to *S. marcapatensis* Bechyné, 1955. This is a reddish brown species described from Peru that has three spots on each elytron.

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