

Contribution to the knowledge of the genus *Seidlitzia* Desbrochers des Loges, 1891 (Coleoptera, Curculionidae)

by Jean PELLETIER* & Roman BOROVEC**

* 5 rue de la Saulaie, F – 37380 Monnaie <jzz.pelletier@wanadoo.fr>

** Sloupno 64, CZ – 503 53 Smidary, République tchèque <romanborovec@mybox.cz>

Abstract. – The examination of series of *Seidlitzia barynotoides* Escalera, 1914, from Moroccan Middle Atlas and High Atlas has shown a great heterogeneity between individuals. The study of both habitus and genital structures reveals that several species were confused under this name. As a result, *Seidlitzia barynotoides latesparsa* Antoine, 1953, is considered with species rank, and *S. escaleraei* n. sp. is distinguished from *S. barynotoides*. In addition to the description or redescrptions of these three taxa, a brief redescription of *S. maroccana* (Fairmaire, 1868) is given, allowing providing a dichotomic key for the identification of the species of *Seidlitzia*.

Résumé. – **Contribution à la connaissance du genre *Seidlitzia* Desbrochers des Loges, 1891 (Coleoptera, Curculionidae).** L'examen d'une série de spécimens de *Seidlitzia barynotoides* Escalera, 1914, du Moyen Atlas et du Haut Atlas, a montré une grande variabilité entre les individus. L'étude de l'habitus et des structures génitales révèle que plusieurs espèces ont été confondues sous ce nom. Il en résulte que *Seidlitzia barynotoides latesparsa* Antoine, 1953, doit être considéré avec un statut d'espèce et que *S. escaleraei* n. sp. doit être distingué de *S. barynotoides*. En plus des description ou redescrptions de ces trois taxons, une brève redescription de *S. maroccana* (Fairmaire, 1868) est donnée, permettant l'élaboration d'une clé dichotomique pour l'identification des espèces du genre *Seidlitzia*.

Keywords. – *Seidlitzia*, Entiminae, Alophini, Morocco, taxonomy, new species, identification key.

Within the subfamily Entiminae Schönherr, 1823, the genus *Seidlitzia* Desbrochers des Loges, 1891, belongs to the tribe Alophini LeConte, 1874, due to the presence of a longitudinal sulcus on the upper part of rostrum, the elongated scrobes reaching the inferior edge of eyes and the disc of pronotum with a median impression. The genus *Seidlitzia* is close to *Graptus* Schoenherr, 1823, and *Rhytideres* Schoenherr, 1823, but differs by several characters: 1) elytral scales present a mosaic disposition in *Seidlitzia* [imbricated disposition in *Graptus* and *Rhytideres* according to ALONSO-ZARAZAGA *et al.* (2010)]; 2) punctures of elytral striae small and striae themselves reduced or missing in *Seidlitzia* (striae present mainly in basal half of elytra in *Graptus* and *Rhytideres*); 3) large punctures dispersed throughout on rostrum and pronotum in *Seidlitzia* (distribution dense and confuse in *Graptus* or pronotum with significant longitudinal furrows in *Rhytideres*); 4) whitish scales make cloudy patches on the sides and the decline of elytra in *Seidlitzia* (distinct and characteristic drawings of whitish scales bordered by black scales in the middle and posterior parts of elytra in *Graptus* and *Rhytideres*); and 5) two bumps missing before procoxae in *Seidlitzia* [well visible in lateral view in *Rhytideres* and indistinct but present in *Graptus* according to ALONSO-ZARAZAGA *et al.* (2010)]. It can be added that the vestiture of adherent scales is accompanied in *Seidlitzia* only, by setae strongly bent backwards, irregularly ranked on flat interstriae.

The first species of *Seidlitzia* was described by FAIRMAIRE (1868) from Tanger, Morocco, under the name of *Liophloeus maroccanus*. In a unique but fragmented publication, DESBROCHERS DES LOGES (1891, 1892) described the genus *Seidlitzia* and placed inside *Liophloeus maroccanus* Fairmaire, 1868, as a first member of this genus (fig. 1). Then, another species, *Seidlitzia barynotoides* Escalera, 1914, was described from the mountains of the Middle Atlas and High Atlas (ESCALERA, 1914). However, KOCHER (1961) indicated that the populations are heterogeneous in this case and he quoted the subspecies *S. barynotoides latesparsa* Antoine, 1953, as a variety of *S. barynotoides*.

GONZÁLEZ (1968) summarized all the known data of *Seidlitzia* and confirmed Kocher's status of two independent species with one variety. He examined male genitalia for the first time, but not in var. *latesparsa*. The examination of recently collected material from Morocco along with types of the last two mentioned taxa confirmed the heterogeneity of material and prompted us to study the genitalia structures in all species of *Seidlitzia*. It results from this study that a new species, *S. escalerae* n. sp., can be distinguished from *S. barynotoides* and a change of rank is needed for *S. latesparsa* Antoine, considered as a valid species.

Acronyms. – CGE, coll. Christoph Germann, Thun, Switzerland; JKR, coll. Jiří Krátký, Hradec Králové, Czech Republic; JPE, coll. Jean Pelletier, Monnaie, France; MNCN, coll. Museo Nacional de Ciencias Naturales, Madrid, Spain; MKO, coll. Michael Košťál, Brno, Czech Republic; MNHN, coll. Muséum national d'Histoire naturelle, Paris, France; PCA, coll. Pierre Cantot, Rouillé, France; PWE, coll. Patrick Weill, Pau, France; RBO, coll. Roman Borovec, Sloupno, Czech Republic; SDEI, coll. Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany.

The ratio of width (w) to length (L) measured in the middle of pronotum and elytra is used to precise the shape of these body parts.

Genus *Seidlitzia* Desbrochers des Loges, 1891

Seidlitzia Desbrochers des Loges, 1891: 30. Type-species: *Liophloeus maroccanus* Fairmaire, 1868, by subsequent monotypy (ALONSO-ZARAZAGA & LYAL, 1999).

Seidlitzia barynotoides Escalera, 1914

Seidlitzia barynotoides Escalera, 1914: 441; KOCHER, 1961: 165; GONZÁLEZ, 1968: 60; STÜBEN *et al.*, 2010: 71.

LECTOTYPE (present designation): a well preserved ♀ in coll. MNCN, labelled as follows: 1) "Glaui" [handwritten label]; 2) "*Alophus barynotoides*" [Escalera's handwritten label]; 3) "Sintipo" [red printed label]; 4) "MNCN Cat. tipos N° 9024" [red printed label]; 5) "MNCN_Ent N° Cat. 71761" [printed label]; only one specimen was found within the Escalera's collection although the original description was made upon several as indicated by the mention "Long. 9 à 11 mm". It is therefore justified to designate a lectotype assuming that other syntypes may exist and a new label was added: 6) "LECTOTYPUS *Seidlitzia barynotoides* Escalera, R. Borovec design. 2012" [red printed label]. In spite of the *Alophus barynotoides* label, the species is indicated as "*Seidlitzia barynotoides*" in ESCALERA (1914).

Material examined. – KOCHER (1961) indicated the presence of *S. barynotoides* in both High Atlas (Glaoui, *loc. cl.*) and eastern Middle Atlas (Moussa-ou-Salah) between 2000 and 3600 m. In the present study, we examined mainly specimens from the High Atlas: Al Atlas al Kabīr Mts, Imlil pr. Asni, 2000 m, *M. Košťál leg.* (MKO, RBO); Al Atlas al Kabīr Mts, Dj Toubkal Sidi Chamharouch pr. Asni, 2500 m, *M. Košťál leg.* (MKO); Oukaïmeden, Marrakech, 2650 m, *P. Machard leg.* (JPE, RBO); *idem*, *J. Pelletier leg.* (JPE); *idem*, *P. Weill leg.* (PWE); Oukaïmeden, N 31°11,723' - W 07°51,351', 2625 m, 19-20.V.2011, *V. Zieris lgt.* (JKR); Marrakech, Haut Atlas, 2 km SE Oukaïmeden, 3000 m, 30.IV.2012, *M. Šárovec lgt.* (JKR); Tizi-n-Tagatout Oukaïmeden, 2700 m, 19.IV.1995, *M. Šárovec lgt.* (JKR); Taroudannt, 13.IV.1995, *M. Šárovec lgt.* (JKR); Dj. Rhat, *M. Antoine leg.* (MNHN); col du Siroua 3600 m, *M. Antoine leg.* (MNHN); Tacheddirt, 2300 m, *P. Machard leg.* (JPE); Grand Atlas Dj. Tachdirt *Alluaud*, 2600 m, Faune au-dessus de 3000 m (3100-3600) (MNHN); Tizi n'Tachdirt (Maroc), *Antoine*, 2500 m, VII.1925 (MNHN); Dj. Tachdirt, 2700 m, *M. Antoine leg.* (MNHN, SDEI); Tizi n'Mendel 2400 m, *M. Antoine leg.* (MNHN); Tizi n'Tachdirt, 3000-3200 m, *M. Antoine leg.* (MNHN); Hoher Atlas, N-Seite, 56 km SW Asni, Tizi-n-Test, 2000 m, N 30°52'25" - W 08°21'26", 25.XII.2002, *Euphorbia sp.*, Ginster (*Quercus ilex*), *leg. Germann* (CGE). In the Middle Atlas, we examined only one specimen of *S. barynotoides* from Tichoukt: Tichoukt, 2900 m, *Le Cerf leg.* (MNHN).

Diagnosis. – Species found in altitude in the Moroccan Middle Atlas and High Atlas, characterized by the lateral margin of protibiae bent at apex in males and the tip of aedeagus large. For females, see "Discussion" below.

Redescription. – Length of lectotype: 8.8 mm (including rostrum); other ♂: 9.4 mm (8.9-10.5 mm; n = 12); ♀: 9.7 mm (8.5-11.0 mm; n = 11).

Head with rostrum with a median longitudinal sulcus, the eyes flat and the funicle segments 4-7 rounded or slightly transverse.

Pronotum with rounded sides, shortly enlarged behind the anterior edge, the broadest at the anterior third level and then regularly reduced backwards. Disc without (♂) or with a short median depression before its midlength (♀). Deep punctures irregularly dispersed throughout.

Elytra subparallel behind shoulders, slightly reduced backwards (♂) or broader and more regularly oval (♀). Disc relatively flat (♂) or distinctly vaulted (♀). Punctures thinner than on the disc of pronotum. Striae hardly distinct. Integument covered by polygonal scales of clear or dark tints making irregular spots.

Protibias bent at apex in males only.

Male genitalia. Penis large at base and moderately decreasing towards apex which is large in ventral view (fig. 2), strongly curved and bent upward in lateral view (fig. 2).

Female genitalia. Fenestra of ventrite 8 long-oval (fig. 6). Spermatheca with long, slender, regularly curved cornu, small corpus and ramus distinctly longer and wider than inconspicuous nodulus (fig. 10).

Variability. – Shape of rostrum variable, either parallel-sided or distinctly broader at base, mainly in females.

Discussion. – Males are well characterized by both the bent apex of protibias and the shape of aedeagus in ventral view. Females are easily separated from those of *S. escaleraei* n. sp. by the last segments of funicle rounded, not distinctly transverse. Females of *S. barynotoides* differ from those of *S. latesparsa* by a body length consistently smaller.

***Seidlitzia latesparsa* Antoine, 1953, stat. prom.**

Seidlitzia barynotoides ssp. *latesparsa* Antoine, 1953: 220.

Seidlitzia barynotoides var. *latesparsa* Antoine; KOCHER, 1961: 165; GONZÁLEZ, 1968: 60.

Type material. – HOLOTYPE: ♂, Morocco: 1) “Bou Iblane 3200. VI-38 Maroc (*Antoine*)”; 2) “Holotype” [red printed label]; 3) “*latesparsa* Antoine det. m.” [“*latesparsa*” Antoine’s hand written]; 4) “Muséum Paris Coll. Antoine”, to which was added the following label; 5) “*Seidlitzia latesparsa*, R. Borovec & J. Pelletier det. 2012” [red printed label]. PARATYPES: 3 ♂, 2 ♀, all collected at Bou Iblane between 2800 and 3300 m in VI-VII.1938. They are accompanied by a red label with “cotype” or “paratype” (♂), and “allotype” or “cotype” (♀).

Other material examined. – KOCHER (1961) indicated the presence of the species from eastern Middle Atlas including Bou Iblane, the typical locality, and from “various localities” of the central High Atlas. Additional material examined was as follows. Middle Atlas: Tizi n’Mendre (MNHN); Jbel bou Iblane, 33°32,736’N - 04°09,295’W, 11.V.2009, 2279 m, *R. Borovec lgt.* (RBO); Tichoukt, 2900 m (MNHN). High Atlas: Bou Naceur Daya, 3200 m (MNHN); Ich Bou Naceur, 3100 m (MNHN); Arround (JPE); Dj. Ayachi, 3400-3700 m (JPE); Djbel Ayachi, 3400-3700 m (MNHN).

Diagnosis. – In mean, the longest species of *Seidlitzia*, characterized by the apex of protibias bent in males and the shape of aedeagus pointed in ventral view.

Redescription. – Length of holotype: 10.5 mm (including rostrum). Other ♂: 11.0 mm (10.0-11.5 mm; n = 7); ♀: 12.7 mm (11.8-14.0 mm; n = 7).

Head with rostrum robust of ca. equal width from base to apex and with a deep longitudinal sulcus. Segments of antennae decreasing progressively in length, segments 5-7 rounded or tronconical, not distinctly transverse in both sexes.

Pronotum broadest at the anterior third of its length and then linearly reduced backwards. Anterior edge with an indentation in the middle. No depression or sulcus on the disc.

Elytra feebly vaulted, flat on disc, with striae marginally visible and punctures not different from those of interstriae. In fresh specimens, fuzzy drawing of white scales before apex in the middle and sides.

Legs. Lateral margins of protibias bent inwards in males only.

Male genitalia. Penis in ventral view large at base and narrowing towards apex, this pointed, in lateral view strongly curved with the apex upturned (fig. 3).

Female genitalia. Ventricle 8 with a notch in the middle of *margo apicalis*, without fenestra (fig. 7). Spermatheca built upon the standard model (cf. fig. 10).

Discussion. – *Seidlitzia latesparsa* Antoine, can be distinguished from *S. barynotoides* Escalera by the shape of the penis tip and the longer body length (♂, ♀) ($P < 0.01$ using the Student's *t*-test). *S. latesparsa* differs also from *S. escaleraei* n. sp. by the longer body (♂, ♀), antennal segments not transverse (♂, ♀) and protibias bent at apex (♂).

Seidlitzia escaleraei n. sp.

HOLOTYPE: ♂, Morocco: 1) “Tachdirt & Djebel Likoumt Grand Atlas”; 2) “*Miss Le Cerf & Talbot* Grand Atlas 28.IV à 9.VI.1927”; 3) “Muséum Paris 1980 Coll. G. Ruter”; 4) “Holotype ♂ *Seidlitzia escaleraei* Borovec & Pelletier” [red printed label], in MNHN.

PARATYPES: 8 ♂, 10 ♀. 1 ♂, “Bou Naceur Daya, 3180 m, *Le Cerf*” (MNHN); 1 ♂, 1 ♀ “Djeb. Rhat Maroc (*Antoine*) G. A., 2800, VII.33” (MNHN); 1 ♀, *idem*, “2900, VIII.35” (MNHN); 1 ♂, *idem*, “3000, VII.36” (MNHN); 1 ♀, “Oukaïmeden MA Marrakech, 28.IV.2001, *Machard*” (JPE); 1 ♂ “Oukaïmeden, *H. Fongond*” (PCA); 1 ♀, “Tizi n’Tichka, *Antoine*, 2500, VII.30” (MNHN); 1 ♀, “3 km de Tizi n’Tichka, 1980 m, 23.IV.83”, “Grand Atlas Central, Maroc, *P. Ponef*” (JPE); 1 ♂ 3 ♀, “Oukaïmeden MA Marrakech, 25.IV.93, *Machard*” (3 JPE, 1 RBO), 2 ♂ 1 ♀, *idem*, “2650 m, 30.IV.95” (2 JPE, 1 RBO); 1 ♀, “Oukaïmeden sous pierres, 18.V.2007, *J. Pelletier leg.*” (JPE); 1 ♂, “Oukaïmeden, 19.IV.2012, *P. Krásenský lgt.*” (JKR).

Diagnosis. – Close to males of *Seidlitzia barynotoides* Escalera and *S. latesparsa* Antoine, but different by the lateral margin of protibias straight up to apex and the shape of aedeagus (fig. 4). All the body covered by rounded copper-coloured scales and deep punctures well visible on head and pronotum.

Description of male holotype. – Length: 10.8 mm (including rostrum). Other ♂: 10.9 mm (10.2–12.1 mm), ♀: 11.0 mm (9.0–13.0 mm).

Head with rostrum large at base and moderately narrowed at apex, with a longitudinal median sulcus. Scrobes long, open apically, reaching the inferior edge of eyes basally. Antennae short, reddish with scape dilated in upper third, rounded at apex. Funicle segments short, segment 1 2.0× as long as broad at apex, segment 2 1.5× longer than broad, segments 3–4 rounded, segments 5–7 distinctly transverse, segment 7 tronconical. Club thick, moderately pointed at apex. Eyes flat, shortly oval.

Pronotum slightly transverse ($w/L = 1.10$), shortly enlarged behind the anterior edge, broadest at the anterior third, then regularly narrowed backwards. Squamosity bordering anterior edge, lateral and posterior parts with some long semi-erected or bent white setae. Disc relatively flat with a small and hardly visible median depression in anterior third of its length. Deep punctures dispersed throughout.

Elytra in long oval ($w/L = 0.69$), disc flat, sides subparallel in anterior half, very progressively narrowed behind. Interstriae weakly convex, odd ones more convex than even ones, both of them with 1–2 ranks of semi-erected setae. Punctures of striae more or less concealed by scales. Metasternum and ventrites with dense punctures partially concealed by scales and white long recumbent setae.

Legs robust with tibiae covered by long white setae. Protibias straight up to the tarsal corbels, slightly enlarged outwards at this level. Apex rounded with a row of robust yellow setae. Tarsal corbels closed. First tarsal segment in elongated triangle, second segment short and tronconical, third one bilobate.

Genitalia. Penis in lateral view curved at 90°, the base thick and apex thin (fig. 4); in ventral view narrowed towards apex, the latter large and truncate.

Females. – Differ from males by elytra more enlarged behind shoulders and sides more rounded, and funicle with segments more transverse, from segment 3 onwards. Furthermore, elytra are frequently more vaulted.

Genitalia. Fenestra of ventrite 8 narrow, parallel-sided (fig. 8). Spermatheca as in *S. barynotoides* (fig. 10).

Variability. – In addition to the length of the body, the shape of elytra varies largely ($w/L = 0.67-0.81$), particularly in females. Segments of funicle are more or less transverse with segments 3-4 sometimes globular. Sides of rostrum are subparallel or converge slightly to apex. Finally, the rostral sulcus is variable, more or less long and deep.

Derivatio nominis. – *Seidlitzia escaleraei* n. sp. is named after Manuel Martínez de la Escalera (1867-1949), eminent Spanish coleopterologist, who was the descriptor of *S. barynotoides*, the closest related species.

Discussion. – *Seidlitzia escaleraei* n. sp. is found under stones and share localities of High Atlas with *S. barynotoides*. Males differ from *S. maroccana* by the greater length and more southern distribution in Morocco. It differs from males of *S. latesparsa* and *S. barynotoides* both by the straight protibias and genitalia (fig. 4 vs fig. 3 and fig. 2). Females differ from other *Seidlitzia* by more distinctly transverse segments of funicle, particularly segments 5-7.

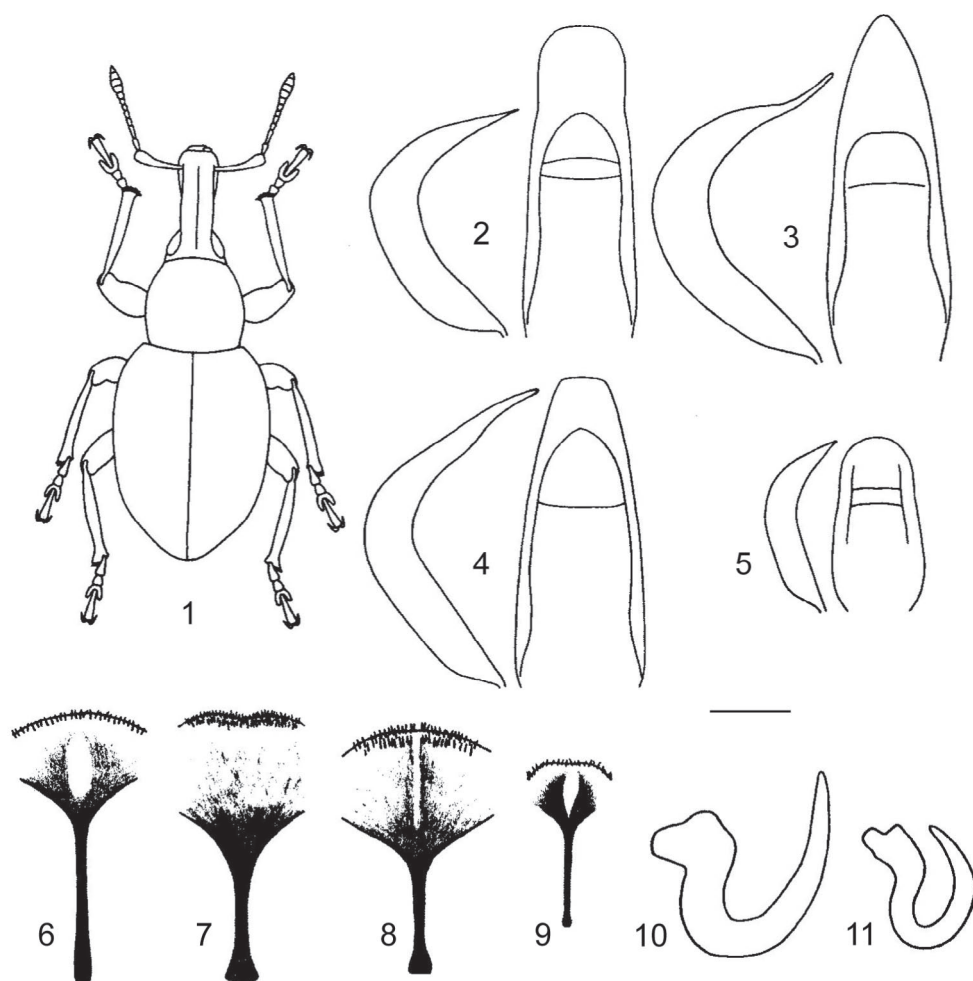


Fig. 1-11. – *Seidlitzia* spp. – 1, Body outline of *S. maroccana* (Fairmaire) (scale: 1.25 mm). – 2-5, Penis in ventral and lateral view (scales: 500 μ m, 440 μ m in fig. 5): 2, *S. barynotoides* Escalera; 3, *S. latesparsa* Antoine; 4, *S. escaleraei* n. sp.; 5, *S. maroccana* (Fairmaire). – 6-9, Ventrite 8 in females (scale : 450 μ m): 6, *S. barynotoides* Escalera; 7, *S. latesparsa* Antoine; 8, *S. escaleraei* n. sp.; 9, *S. maroccana* (Fairmaire). – 10–11, Spermatheca (scale : 160 μ m): 10, *S. barynotoides* Escalera; 11, *S. maroccana* (Fairmaire).

Seidlitzia maroccana (Fairmaire, 1868)*Liophloeus maroccanus* Fairmaire, 1868: 494.*Seidlitzia maroccana* (Fairmaire); DESBROCHERS DES LOGES, 1892: 94; KOCHER, 1961: 165; GONZÁLEZ, 1968: 59.

Diagnosis. – *Seidlitzia maroccana* differs from all other species of *Seidlitzia* by its smaller body size and its more northern distribution. In addition, males are characterized by a thicker tip of penis in lateral view (fig. 5).

Redescription. – Length ♂: 5.0 mm, ♀: 6.0-7.6 mm. Integument of upper part of body black with a coating of not overlapping yellowish scales.

Head, frons and rostrum with a median longitudinal sulcus. Rostrum of equal width from base to apex. Antennae reddish, short, with only segments 1-2 longer than broad, next segments decreasing in length, globular then transverse (♂) or oval then globular (♀).

Pronotum with rounded sides, slightly longer than broad (♂) or weakly transverse (♀). Punctures extremely dense, small and more or less arranged in longitudinal series with larger punctures dispersed throughout.

Elytra broadest in anterior third, regularly narrowed towards apex, the latter slightly pointed. In addition to scales, tiny setae bent backwards aligned in one rank in midline of interstriae. Interstriae weakly convex, separated by striae with moderate but dense punctures. Venter of body with piliform setae.

Legs black with reddish tarsi. Lateral margin of protibias straight to apex in both sexes.

Male genitalia. Penis short, in ventral view largest at base, slightly tapering apically, apex regularly rounded; in lateral view almost regularly ventrally curved, apex pointed (fig. 5).

Female genitalia. Plate of ventrite 8 with V-shaped enlarged fenestra (fig. 9). Spermatheca similar to that of *S. barynotoides*, but corpus with ramus and nodulus slightly obliquely lengthened (fig. 11).

Distribution. – Spain: several localities in the Cadiz province (GONZÁLEZ, 1968). Morocco: mainly Tanger region; Msuar and NW Fez (KOCHER, 1961). In the present study, we examined material from Tanger (JPE, MNHN, SDEI) (n = 13).

IDENTIFICATION KEY TO SPECIES OF *SEIDLITZIA*

1. Length of body, including rostrum, less than 5 mm in males and 8 mm in females. Penis short (fig. 5). Plate of ventrite 8 in females with V-shaped enlarged fenestra (fig. 9). Northern part of Morocco, Southern Spain ***Seidlitzia maroccana*** (Fairmaire)
- Length of body more than 8 mm. Penis long (fig. 2-4). Fenestra of ventrite 8 in females of different shape or absent (fig. 6-8). Southern part of Morocco **2**
2. Segments 5-7 of antennae distinctly transverse. Lateral margin of protibias straight in males. Penis curved at 90° in lateral view (fig. 4). Fenestra of ventrite 8 in females slender, parallel-sided (fig. 8) ***S. escalerai*** n. sp.
- Segments 5-7 of antennae globular, seldom moderately transverse. Lateral margin of protibias in males bent at apex. Penis turned over 90° in lateral view (fig. 2-3). Fenestra of ventrite 8 in females long-oval or missing (fig. 6-7) **3**
3. Body length longer: mean 11.0 mm in males, 12.7 mm in females. Disc of elytra more convex. Tip of penis pointed towards apex (fig. 3). Ventrite 8 in females without fenestra and with notch at middle of *margo apicalis* (fig. 7) ***S. latesparsa*** Antoine
- Body length smaller: mean 9.4 mm in males, 9.7 mm in females. Disc of elytra less convex. Tip of penis large at apex (fig. 2). Ventrite 8 in females with long-oval fenestra and regularly rounded *margo apicalis* (fig. 6) ***S. barynotoides*** Escalera

CHECKLIST OF SPECIES OF *SEIDLITZIA**Seidlitzia barynotoides* Escalera, 1914: High Atlas and Middle Atlas, Southern Morocco.*S. escalerai* n. sp.: High Atlas and Middle Atlas, Southern Morocco.*S. latesparsa* Antoine, 1953: High Atlas and Middle Atlas, Southern Morocco.*S. maroccana* (Fairmaire, 1868): Spain, Northern Morocco.

DISCUSSION

The present study led to the description of a new species, *Seidlitzia escaleraei* n. sp., and to a change of rank of *S. latesparsa*, considered with a species rank instead of a subspecies of *S. barynotoides*. Males are easily distinguished from each other using the characters of both habitus and penis. Conversely, females may present difficulties of identification and particularly those of *S. latesparsa* and *S. barynotoides* mainly separated by body length and shape of elytra. Two reasons engage to continue the study of this group of species: 1) no data dealing with biology are available, all specimens being collected under stones, and 2) variability of some characters, such as the shape of rostrum, varying in length and parallel-sided or narrowed from base to apex. As *Seidlitzia* are not rare, collecting larger samples of specimens in a greater number of localities would allow a more exact comparison between taxa and perhaps to put in evidence new entities.

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