

NEW SPECIES OF NORTH AMERICAN DIPLOTAXIS
(COLEOPTERA; SCARABÆIDÆ)

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The new species presented in this paper were found among material submitted for determination by various friends. The writer would like to express his sincere thanks and appreciation to O. L. Cartwright and R. H. Baker for making available the Mexican material which is so closely allied to the Texas and Arizona fauna. Thanks are also due L. W. Saylor, W. F. Barr, R. G. Dahl, K. S. Hagen and J. C. von Bloeker for material loaned during the course of these studies.

The descriptions are arranged so that the diagnostic portion includes the main characters used by Fall ¹ (1909) in his key. This will enable the reader to refer directly to the most closely allied species.

***Diplotaxis arta* Cazier, new species**

Small, black; upper surface glabrous; labrum broadly, arcuately emarginate; mentum horizontal, slightly convex behind, strongly declivous at anterior third, the declivity margined by an acute arcuate raised line and a row of erect setæ; pronotal angles not impressed, sides not bisinuate; front of head without convexity; metasternum normally long, elytra not connate; unguis short, nearly perpendicular to claw, median in position; clypeus rotundate, anterior margin subtruncate medially.

Head densely punctate, punctures coalescent or separated by about one-fourth their own widths, front on same plane as clypeus; clypeus punctate as in front, clypeal structure broadly interrupted medially, side margins shallowly sinuate

¹ Fall, H. C., 1909, Revision of the Species of *Diplotaxis* of the United States. Trans. American Entom. Soc. 35:1-97.

medially, anterior margin subtruncate medially, angles evenly rounded, margins shallowly reflexed. *Pronotum* as wide as humeral angles of elytra, side margins evenly rounded, widest about middle; anterior margin nearly as wide as basal margin; disk with large punctures separated by about their own widths, more dense laterally, without lateral impressions. *Elytra* with sides subparallel to apical sixth, evenly rounded to apex, margins clothed with short erect pile; humeral and apical umbones prominent; surface irregularly punctate, punctures separated by about twice their own widths, costæ obscure, not elevated. *Undersurface* clothed with short golden pile; anterior tibiæ tridentate, basal tooth median in position, hind femora sparsely punctate throughout outer surface, hind coxæ sparsely punctate on apical half, posterior tarsi equal in length to hind tibiæ. Length 9 mm., width 4.5 mm.

Holotype in the writer's collection, taken in Cedar Canyon, Providence Mountains, San Bernardino County, California, June 10, 1940 by W. F. Barr on *Franseria eriocentra* Gray. Five paratopotypes deposited in the collections of W. F. Barr and the author.

Diplotaxis arta Cazier is most closely allied to *Diplotaxis fimbriata* Fall but can be distinguished from that species by its narrower pronotum, subparallel elytra, prominent humeral umbones, by having the pronotum and elytra fimbriate with short golden hairs and by having the metasternum longer. The metathoracic wings in this species are more highly developed than those of *D. fimbriata*. From *D. pacata* Lec. it can be distinguished by its more parallel form, larger and more densely placed punctures throughout, by lacking the lateral pronotal impressions, by having the side pronotal margins evenly rounded rather than subangulate and by its indistinct elytral costæ. It can be distinguished from *D. brevidens* Lec. by its subtruncate anterior clypeal margin, evenly convex and wider front of the head, by its less angular side pronotal margins and by its less hairy posterior tibiæ.

***Diplotaxis ungula* Cazier, new species**

Medium sized, reddish-yellow; upper surface glabrous; labrum broadly accurately emarginate; mentum subhorizontal and nearly flat posteriorly, declivous in front, declivity

margined posteriorly by a more or less acute arcuate raised line and a row of erect setæ; pronotal angles not impressed, side margins not distinctly bisinuate; front of head without post clypeal convexity; metasternum normally long; unguinal tooth antæ-median in position, shorter than superior portion of claw; anterior clypeal margin shallowly sinuate medially; sides of pronotum strongly, subangularly rounded at middle, not sinuate before or behind; clypeal margin broadly reflexed.

Head densely punctate, punctures separated by about one-fourth their own widths or coalescent, sparsely clothed with short golden pile; clypeus densely punctate, punctures separated by about one-fourth their own widths or coalescent, surface sparsely clothed with short golden pile; clypeal suture widely interrupted medially, margins strongly reflexed, anterior more strongly than lateral, anterior margin subtruncate or shallowly emarginate medially, lateral margins convex medially shallowly produced posteriorly at juncture with canthi, canthi strongly angulate in front of eyes. *Pronotum* shallowly convex, side margins prominently subangular at middle, margins in front and behind nearly straight, anterior angles not prominent; anterior margin narrower than posterior margin; surface moderately punctate, punctures separated by about twice their own widths. *Elytra* widest at about apical third; humeral and apical umbones prominent; surface with costæ obscure but present, first intercostal space irregularly punctate, punctures separated by about twice their own widths, second intercostal space with single irregular row of punctures. *Undersurface* sparsely clothed with rather long golden pile; anterior tibiæ strongly tridentate, basal tooth slightly post-median in position, tarsi longer than tibiæ, tibiæ clothed with long golden pile on inner surface, tarsal claws long, cleft subapically, inner tooth truncate. Length 11 mm., width 5.4 mm.

Holotype for Eagle Pass, Texas, March 30, 1908 returned to L. W. Saylor of the United States Biological Survey for deposition in the United States National Museum. One paratype in the writer's collection.

This species appears to be closely allied to *Diploaxis sulcatula* Fall and *D. beyeri* Schaeffer. It can be separated from *D. sulcatula* by its angulate side clypeal margins, by its more

angulate side pronotal margins, by its more proximally placed basal tooth of front tibiae, by the long pile on the tibiae and by the longer tarsal claws. From *D. beyeri* it can be distinguished by its subtruncate anterior clypeal margin and convex rather than sinuate side clypeal margins, by its less densely punctate pronotum and by the long tibial pile. From *D. illustris* Fall it can be separated by its reddish-yellow color, by its more strongly reflexed clypeal margins, by its angulate canthi, more strongly rounded lateral pronotal margins, by its much wider anterior tibiae, by the post-median position of the basal tooth of the anterior tibiae, and by the less dense tibial pile.

***Diplotaxis bakeri* Cazier, new species**

Medium sized, black; upper surface glabrous; labrum broadly, arcuately emarginate; mentum feebly oblique behind, strongly declivous in anterior two-fifths, declivity concave from side to side, posterior margin convex but without raised line or setae; thoracic angles not impressed; hind femora impunctate between submarginal rows of setigerous punctures; tarsal claws post median in position.

Head with punctures separated by about their own widths above, more densely placed anteriorly, front only slightly raised along clypeal suture; clypeus densely punctate, punctures separated by about one-fourth their own widths, suture entire, margins shallowly reflexed, anterior margin shallowly sinuate medially, angles evenly rounded, side margins shallowly sinuate, canthi not angulate; antennae ten-segmented. *Pronotum* convex, side margins subangulate medially, sides strongly constricted anteriorly, narrowly constricted basally, anterior angles sparsely produced; anterior margin narrower than basal margin; surface shining, sparsely minutely punctate, punctures separated by two to three times their own widths, more closely placed laterally, medially with faint indication of longitudinal impression. *Elytra* with shallow costae evident, intercostal spaces irregularly punctate, punctures separated by about one to two times their own widths, surface minutely alutaceous, costae with single median row of small punctures; humeral umbone prominent; sides widest at apical third, evenly rounded api-

cally. *Undersurface* sparsely clothed with short golden pile; anterior tibiæ tridentate, basal tooth slightly ante-median, tarsal claws with inner, truncate tooth ante-median, hind tarsi shorter than hind tibiæ. Length 10 mm., width 5.5 mm.

Holotype in the writer's collection, taken at Rancho La Golondrina, Rio Sabinas, Muzquiz, Coahuila, Mexico, June 28, 1938 by Rollin H. Baker after whom the writer takes pleasure in naming this species. Forty-three paratopotypes deposited in the collections of O. L. Cartwright, R. H. Baker and the author.

This species appears to be most closely allied to the Texan *Diplotaxis belfragei* Fall but can be readily distinguished from it by having the mentum declivous from anterior two-fifths rather than the middle, by its smaller size, generally more strongly angulate side pronotal margins, by the smaller less dense pronotal punctures and by its longer truncate ungual tooth. The mentum is somewhat variable in the type series and might conceivably allow specimens to be keyed out to the bracket including *D. mærens* Lec. and *D. punctipennis* Lec. in Fall's key. *Diplotaxis bakeri* can be separated from *D. mærens* by its shallowly emarginate labrum, more sparsely and finely punctate pronotum and by its more strongly declivous mentum. From *D. punctipennis* it can be separated by its distinctly sinuate side clypeal margins, by the smaller and more sparsely placed pronotal punctures and by having the inner truncate tooth on the anterior tarsal claws distinctly shorter than the claw proper. *Diplotaxis bakeri* superficially resembles *D. maura* Fall but can be distinguished from that species by having the pronotal punctures smaller and more sparsely placed, by having the basal tooth of the front tibiæ more nearly median in position and by having the tarsal claws more deeply cleft.

***Diplotaxis volatica* Cazier, new species**

Small, reddish-brown; upper surface glabrous; labrum broadly, arcuately emarginate; mentum feebly oblique behind, strongly declivous for anterior two-fifths; declivity concave from side to side, posterior margin of declivity arcuate, without raised line or setæ; pronotal angles not impressed; hind femora sparsely punctate between submarginal

rows of setigerous punctures; hind coxæ punctate in outer half; pronotum without impressed line along anterior border, anterior angles moderately prominent; tooth of tarsal claws ante-median in position.

Head with large asperate punctures above separated by about one-fourth their own widths, more densely placed along clypeal suture, front evenly rounded; clypeus densely punctate, punctures coalescent at base, clypeal suture entire, nearly straight medially, margins moderately reflexed, anterior and side margins shallowly sinuate medially, anterior angles evenly rounded, canthus angulate subapically. *Pronotum* with side margins subangulate medially, anterior angles prominent; anterior margin not impressed, narrower than posterior margin; surface minutely alutaceous, sparsely punctate, punctures separated by about twice their own widths, median longitudinal impression faint. *Elytra* widest at apical third; humeral umbones prominent; surface strongly alutaceous, costæ distinct, intercostal spaces irregularly punctate, punctures separated by two to three times their own widths, costæ with single row of median punctures. *Undersurface* with very short, sparse, golden pile; anterior and middle legs with tarsi distinctly longer than tibiæ, anterior tibiæ tridentate, basal tooth slightly in front of middle, tarsal claws with inner truncate tooth slightly ante-median in position. Length 8 mm., width 4.3 mm.

Holotype in the writer's collection, taken at Rancho La Golondrina, Rio Sabinas, Muzquiz, Coahuila, Mexico, June 28, 1938 by Rollin H. Baker. One paratopotype in the collection of O. L. Cartwright.

This species is most closely allied to *Diplotaxis bakeri* Cazier but can be separated by its smaller size, reddish-brown color, by the large asperate punctures on the front of the head and by the longer anterior tarsi. From *D. haydenii* Lec. it can be separated by its unimpressed anterior pronotal margin, by the ante-median tooth on the tarsal claws and by the asperate punctures on the head.

***Diplotaxis completa* Cazier, new species**

Rather large, reddish-brown; upper surface glabrous; labrum broadly, arcuately emarginate; mentum strongly declivous at anterior third, margin without raised line, setæ

absent at middle; hind femora with sparse irregular punctures between submarginal rows of setigerous punctures, hind coxæ sparsely punctate in outer half; pronotum without impressed line along anterior margin.

Head with larger punctures above separated by about their own widths, more densely placed toward anterior depression, interspaces finely punctate, front above clypeal suture abruptly elevated, surface sparsely punctate, front above slightly impressed; clypeus densely punctate, punctures close set or confluent, clypeal suture narrowly interrupted at middle, margins abruptly, prominently reflexed, side margins nearly straight, anterior margin shallowly sinuate medially, anterior angles evenly rounded, canthi evenly rounded. *Pronotum* widest slightly behind middle, evenly rounded basally, shallowly sinuate apically, anterior angles prominent; anterior margin narrower than basal margin; surface sparsely punctate, large punctures separated by about twice their own widths, interspaces finely punctate. *Elytra* widest at middle; humeral and apical umbones prominent; surface with costæ faint but indicated, intercostal spaces irregularly punctate, punctures separated by about three times their own widths, surface minutely alutaceous, costæ with single, median row of small punctures. *Undersurface* sparsely clothed with short golden pile; anterior tibiæ tridentate, basal tooth slightly in front of middle, hind tarsi longer than tibiæ, tarsal claws with inner tooth slightly ante-median, strongly truncate. Length 12.5 mm., width 6.1 mm.

Holotype in the writer's collection, taken at Serranias del Burro, Coahuila, Mexico, June 18, 1938 by Rollin H. Baker.

This species is most closely allied to *Diptotaxis dentella* Fall and *D. statura* Cazier. It can be distinguished from *D. dentella* by its more widely reflexed clypeal margin, by its evenly rounded canthi, by its more sparsely punctate front, the smooth anterior depression on the front above the clypeal suture, by its less elevated elytral costæ and longer tarsi. From *D. statura* it can be separated by its more widely reflexed anterior clypeal margin, more prominent anterior pronotal angles, by its wider and more densely punctate elytral intercostal areas, more weakly defined costæ, by the presence of the alutaceous elytral sculpturing and the more ante-median tooth of the tarsal claws.

***Diplotaxis statura* Cazier, new species**

Rather large, head black, pronotum cupreous black, elytra dark reddish-brown, shining; upper surface glabrous; labrum broadly, arcuately emarginate; mentum strongly declivous at anterior third, margins without raised line, setæ absent at middle; hind femora with sparse irregular punctures between submarginal rows of setigerous punctures, hind coxæ sparsely punctate in outer half; pronotum without impressed line along anterior margin.

Head with punctures above separated by about their own widths, sparsely punctate along clypeal suture; clypeus with punctures separated by about one-half their own widths, margins shallowly reflexed, side and anterior margins shallowly sinuate medially, clypeal suture entire. *Pronotum* widest at middle, sides nearly straight to base and apex, anterior angles not prominent; anterior margin narrower than posterior; surface shining, sparsely, finely punctate, punctures separated by about twice their own widths, interspaces minutely punctate. *Elytra* widest about middle, humeral and apical umbones prominent; surface shining, costæ distinct, intercostal spaces sparsely punctate, punctures separated by about three times their own widths. *Undersurface* sparsely clothed with short golden pile; anterior tibiæ tridentate, basal tooth slightly ante-median, tarsi longer than tibiæ, inner tooth of tarsal claws median in position, truncate. Length 12 mm., width 6 mm.

Holotype in the writer's collection, taken at Buena Vista, Sierra de la Encantada, Coahuila, Mexico, Elevation 6000 ft., July 7, 1938 by Rollin H. Baker.

Diplotaxis statura Cazier is most closely allied to *D. dentella* Fall and *D. completa* Cazier. It can be separated from *D. dentella* by its shining, less densely punctate elytra, complete clypeal suture, and longer tarsi. From *D. completa* it can be distinguished by its less widely reflexed anterior clypeal margins, less prominent anterior pronotal angles, by its narrower, less densely punctate elytral intercostal spaces, more prominent elytral costæ, by the absence of the alutaceous elytral sculpturing and the median position of the tooth on the tarsal claws.

Diplotaxis cartwrighti Cazier, new species

Medium sized, dark reddish-brown; upper surface glabrous; labrum broadly, arcuately emarginate; mentum feebly oblique behind, strongly declivous for anterior half, declivity concave from side to side, without raised line; thoracic angles not impressed; hind femora nearly impunctate between the submarginal rows of setigerous punctures; tooth of tarsal claws ante-median.

Head with punctures above separated by about their own widths, more densely placed below, front nearly on same plane as clypeus; clypeus densely punctate punctures separated by about one-fourth to one-half their own widths, clypeal suture entire, anterior margin rather deeply sinuate medially, lateral margins shallowly sinuate medially, margins shallowly reflexed. *Pronotum* shining, convex, widest at middle, sides evenly rounded from base to apex, anterior angles not prominent; anterior margin narrower than basal margin; disk with punctures separated by two to three times their own widths. *Elytra* widest about middle, humeral and apical umbones prominent; surface opaque, sericeous; costæ faint but evident, intercostal spaces irregularly punctate, punctures separated by about twice their own widths. *Undersurface* sparsely clothed with short golden pile; anterior tibiæ tridentate, basal tooth slightly ante-median, posterior tarsi equal in length with tibiæ, inner tooth of tarsal claws truncate, ante-median in position. Length 11 mm., width 6 mm.

Holotype in the writer's collection, taken at Tanque de Malone La Babia, Coahuila, Mexico, June 20, 1938, by Rollin H. Baker. One paratype from Serranias del Burro, Coahuila, Mexico, June 18, 1938 (Rollin H. Baker) in the collection of O. L. Cartwright. The writer is pleased to name this species in honor of Mr. Cartwright who made available much of the material herein described.

The paratype specimen has the elytra shining and much less alutaceous than the type. Otherwise, they are similar.

This species is most closely related to *Diplotaxis stabilis* Cazier but can be distinguished from it by its smaller size, convex pronotum, alutaceous elytral sculpturing and longer tarsi.

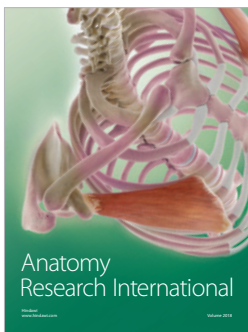
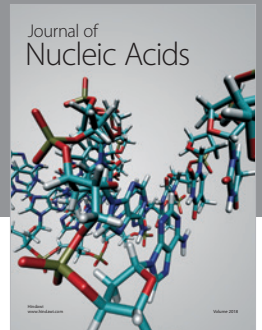
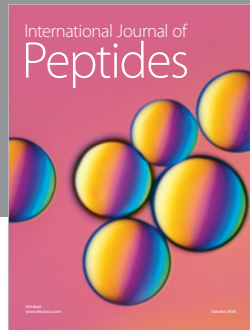
***Diplotaxis stabilis* Cazier, new species**

Large, dark reddish-brown; upper surface glabrous; labrum broadly, arcuately emarginate; mentum feebly oblique posteriorly, strongly concave from middle to front, without trace of transverse ridge, setæ absent; pronotal angles not impressed; hind femora nearly impunctate between the submarginal rows of setigerous punctures; tooth of tarsal claws post median.

Head irregularly punctate, dense medially and toward clypeus, area immediately posterior to clypeal suture more sparsely punctate, front on same plane as clypeus; clypeus densely punctate, punctures separated by about one-half their own widths or less, clypeal suture entire, anterior and lateral margins moderately reflexed, shallowly sinuate medially, anterior angles evenly rounded, canthi subangulate. *Pronotum* with side margins evenly rounded from base to apex, widest just back of middle, anterior angles somewhat prominent, not impressed behind; disk with punctures separated by about twice their own widths, interspaces minutely punctate. *Elytra* widest at about apical third, humeral and apical umbones prominent; surface shining, costæ rather flat but distinct, intercostal spaces irregularly punctate, punctures separated by two to three times their own widths. *Undersurface* sparsely clothed with short golden pile; anterior tibiæ tridentate, basal tooth slightly in front of middle, posterior femora with few minute punctures between the submarginal rows of setigerous punctures, hind coxæ sparsely punctate in outer half, hind tarsi shorter than tibiæ, tarsal claws with inner tooth strongly truncate, ante-median in position. Length 12.5 mm., width 6.8 mm.

Holotype in the writer's collection, taken at Mesa de la Encontada, Sierra de la Encontada, Elevation 7000 feet, Coahuila, Mexico, July 21, 1938 by Rollin H. Baker.

Most closely allied to *Diplotaxis belfragei* Fall but distinguishable from it by its less angulate side pronotal margins, smaller punctures throughout, shorter tarsi and by the more ante-median tooth of the tarsal claws.



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