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## Thirteen New Species of *Diplotaxis* from Northern Mexico (Coleoptera, Scarabaeidae)

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### INTRODUCTION

Thirteen new species have been found among the thousands of specimens of the genus *Diplotaxis* collected recently in north central Mexico (1947 to 1954) and deposited in the American Museum of Natural History. The majority of these specimens were taken by the David Rockefeller Expedition to Mexico in 1947. It seems advisable to make these new species known now so that the names will be available for incorporation in a study of the genus in Mexico now in progress.

The new species are from the states of Durango and Chihuahua, two of them occurring also in Zacatecas and Aguascalientes (fig. 1). They have been compared with the 27 types of Moser's Mexican and Guatemalan species (1918, 1921) which were kindly lent to us by Dr. Karl Delkeskamp of the Zoologisches Museum in Berlin, with the 23 types of Bates's species from the same regions, examined at the British Museum, and with the six types from Coahuila, Mexico, described by Cazier (1940). Fifteen of the species described by Moser are southern species (either southern Mexico or Guatemala), whereas all the species described in this paper are northern in distribution. Three of Moser's re-

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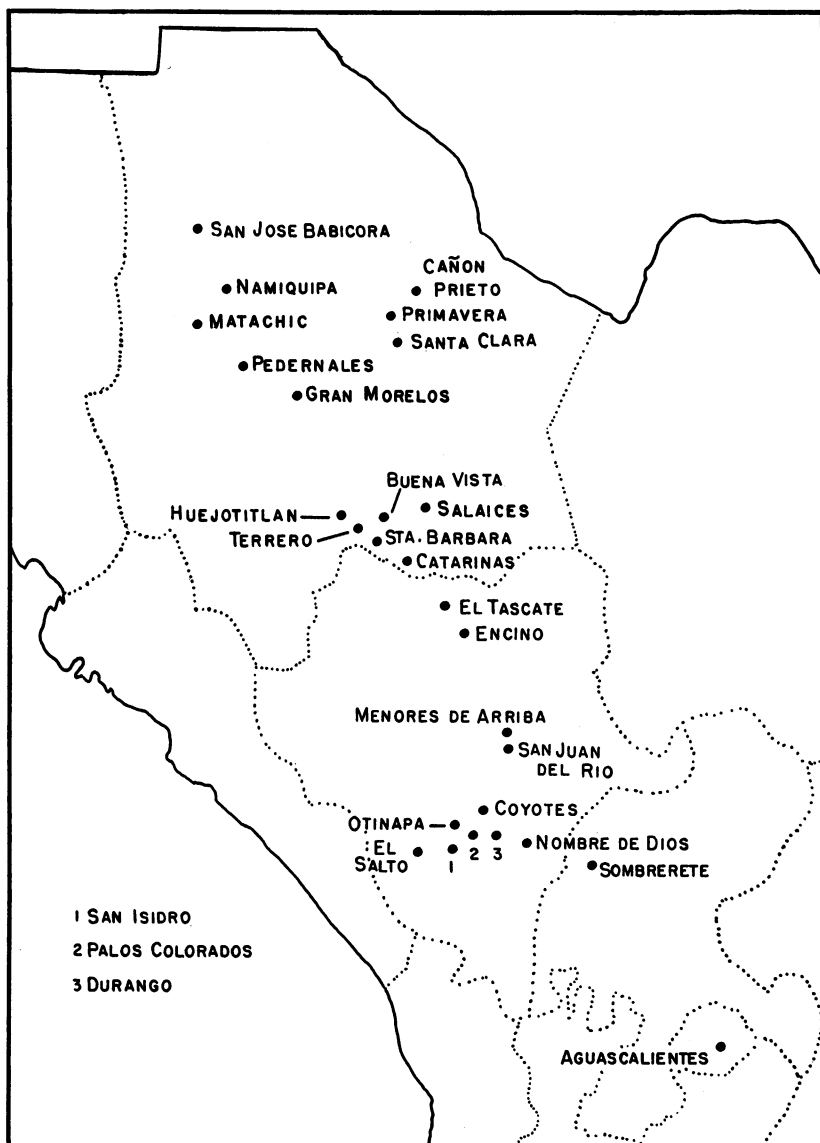


FIG. 1. Localities in northern Mexico where new species of *Diplotaxis* have been found.

maining 12 species have already been synonymized (Vaurie, 1954), and three have been found to be synonyms of other Mexican species. Of the six others, five have been identified with material in our collection, leaving only *foveicollis* Moser, which has a different head and clypeus from any species herein described. Of Bates's 23 species, 15 have been identified with our material, one is not a member of this genus, and the other seven are from southern Mexico or Guatemala. There are in addition seven species in the "Biologia" (Bates, 1888-1889) by other authors of which we have four in our collection; two are from farther south, and one, *rugosipennis* Blanchard, may be, from its brief description, one of 20 or more different species.

It seems amazing that so many more new species can now be described, but the number of specimens collected in our new material (2189 types and paratypes) shows that the genus is exceedingly numerous in Mexico, and no doubt there are still more species to be found. With the exception of a few wide-ranging forms that occur over large areas of Mexico (*cribulosa*, *aenea*, *arctifrons*, and *subrugata*), the majority of *Diplotaxis* appear to be more restricted geographically than was hitherto supposed. Thus none of the species herein described has been recognized in material from the southwestern United States. It has also been found in the present study that the male genitalia, at least in the Mexican species, are usually of aid in classification, and they have been examined in all the new species.

The largest of the species that follow is 11.5 mm.; most of them are smaller. All but two of the species have the tarsal claws toothed subapically, not at middle as in so many species from the United States (fig. 3), and in the majority the claws are abruptly bent. Two of the new species are pubescent dorsally (one with the head glabrous), and 11 are virtually glabrous. Of the latter, one is distinguished by scattered hairs on the pronotal angles, two have nine instead of 10 segments in the antennae (one of these has also a chitinous ridge on the sides of the abdomen), and of the remaining, three have fine hairs dorsally on the clypeus (one of these has virtually no marginal hairs on the elytra), and five have the clypeus glabrous (one of these has a distinctive labrum). The species have been briefly characterized under separate groups.

#### REMARKS ON DESCRIPTIONS

Unless otherwise stated in parentheses, all specimens were collected in 1947 by members of the David Rockefeller Mexican Expedition of the American Museum of Natural History (M. A. Cazier, W. J. Gertsch, C.

D. Michener, R. Schrammel, and H. T. Spieth), accompanied by Mr. and Mrs. G. M. Bradt.

The elytra in *Diplotaxis* have very wide punctate intervals between the narrow costae (the latter are not always elevated, but are recognizable by their smoothness and by the very few punctures in their center). The first interval is that next to the suture, then, progressing outwardly, there is a sparsely punctured costa with a row of dense punctures on either side of it, then a second interval, and so on. These bordering punctures are assumed to be a part of the costa, not of the interval, so that when the second interval in the descriptions is said to be either unipunctate or multipunctate, we are referring to the punctures between the rows of costal punctures. Only two of the 13 new species have the second interval unipunctate.

So far as we know, the length and density of the marginal hairs of the elytra have not been used in the study of the glabrous species of this genus except in the case of *fimbriata* Fall from the United States, which has a remarkable display of such hairs. One of the new species has the marginal hairs virtually lacking, one has them dense and with alternating short and long hairs, and the remainder have them short and sparse and all more or less of the same length. The presence or absence of fine hairs on the clypeus in glabrous species (sometimes seen only from a three-quarter view) is another character that has not been used previously. Perhaps the majority of *Diplotaxis* do not have hairs on the clypeus, but all the small species of the *trapezifera* complex appear to have them, and they are present in the last three species described in this paper. Close observation of the labrum and mentum is very important in this genus, as these parts, although small and often difficult to see, are usually diagnostic.

Disposition of the paratypes has been omitted from the descriptions, but one or several of each species will be deposited in the collection of David Rockefeller and in the following institutions: British Museum (Natural History), California Academy of Sciences, Chicago Natural History Museum, Museum of Comparative Zoölogy, United States National Museum, and Zoologisches Museum in Berlin.

#### ACKNOWLEDGMENTS

We wish to thank Miss Christine M. F. von Hayek of the British Museum for comparing for us two of our species (*catarinas*, *glabrimargo*) with the types of *trapezifera* and *nigriventris* Bates. We are grateful also to Dr. Kurt Delkeskamp of the Zoologisches Museum, Berlin, for lending us the types of Moser.

## DESCRIPTIONS

## GROUP 1

The two following species are hairy dorsally, not glabrous.

*Diplotaxis rockefelleri*, new species

Figures 1, 3B

Small, piceous; head bare, pronotum minutely pilose but appearing bare, anterior clypeal margin and elytra pilose; antennae 10-segmented; abdominal segments not ridged laterally; tarsal claws toothed subapically.

DESCRIPTION OF TYPE, MALE: Length, 8 mm. Head densely punctate, punctures separated by about one-half of their own widths; clypeus reticulately punctate, sparsely pilose anteriorly, margins shallowly reflexed, lateral margins shallowly sinuate before eyes, anterior margin truncate, lateral angles evenly rounded; labrum shallowly curved, moderately densely punctate; mentum feebly declivous medially, declivity with row of hairs; palpi with dorsal impressed area at base of terminal segment; antennae 10-segmented, club as long as all funicular segments combined. Pronotum only feebly convex, widest slightly behind middle, rather regularly punctate, punctures separated by from one to two times their own widths, many punctures with short, inconspicuous hairs, lateral margins evenly rounded. Scutellum densely, irregularly punctate. Elytra subparallel, strial punctures with hairs short, inconspicuous, costal hairs longer than those on intervals, hairs of interval punctures short and inconspicuous at base and on disc, increasing in length towards apex and along sides, lateral margins with row of long hair, punctures separated by about their own widths. Under surface sparsely punctate and pilose, abdomen without lateral ridges; pygidium with punctures few in number, pilose, large, and nearly coalescent; hind tarsi longer than hind tibiae; tarsal claws long, cleft subapically, tooth shorter than claw and obliquely truncate.

TYPE MATERIAL: (Twenty-one specimens). Holotype, male, allotype, female, and 14 paratopotypes from San Juan del Rio, Durango, Mexico, July 30, 1947, 5200 feet; five paratypes from 2 miles south of Menores de Arriba, Durango, September 14, 1950 (Ray F. Smith).

The series (14 males, seven females) are fairly uniform in most characters, and there is little variability. This species differs from *indigena*, which follows, principally by having no hairs, or only a few inconspicuous hairs, in the strial punctures of the elytra, and by having the head and pronotum virtually bare of hairs. The latter character separates it also from the rather similar *subrugata* Moser; furthermore, in *rockefelleri*

the punctures on the head, pronotum, and elytra are smaller than in *subrugata*, the clypeus is not broadly reflexed as in that species, the tarsal claws are longer and less sharply curved, the hind tarsi are longer, and the pronotum is not so convex.

The species is named in honor of Dr. David Rockefeller.

*Diplotaxis indigena*, new species

Figures 1, 3B

Small, piceous; head, pronotum, and elytra pilose; antennae 10-segmented; abdominal segments not ridged laterally; tarsal claws toothed subapically.

DESCRIPTION OF TYPE, MALE: Length, 8 mm. Front of head reticulately punctate, sparsely pilose; clypeal surface reticulately punctate, sparsely pilose, margins moderately reflexed, lateral margins oblique, shallowly sinuate in front of eyes, anterior margin truncate, lateral angles evenly rounded; labrum shallowly emarginate, moderately densely punctate; mentum declivous in front, declivity not ridged but with transverse row of hairs; palpi with terminal segment shallowly depressed at base dorsally; antennae 10-segmented, club slightly longer than all funicular segments combined. Pronotum feebly convex, widest slightly behind middle, surface densely punctate, punctures separated by about one-half of their own widths, sparsely clothed throughout with short but evident pile, lateral margins more strongly constricted apically from just behind middle, scarcely constricted towards base. Scutellum densely, irregularly punctate. Elytra with surface densely, rugosely punctate, sparsely regularly pilose, striae and costal punctures pilose, pile of equal length. Under surface densely punctate, sparsely pilose, abdomen without lateral ridges; pygidium reticulately punctate, sparsely pilose throughout; hind tarsi slightly longer than tibiae; tarsal claws subapically cleft, tooth shorter than claw, obliquely truncate.

TYPE MATERIAL: (Forty-two specimens). Holotype, male, allotype, female, and 32 paratopotypes from Nombre de Dios, Durango, Mexico, August 13, 1947, 5900 feet (one paratype, September 19, 1950, collected by R. F. Smith); two paratypes from San Juan del Rio, Durango, July 30, 1947, 5200 feet; two from 63 miles west of Santa Barbara, Chihuahua, Mexico, July 20, 1947, 5500 feet; four from Santa Barbara, July 17, 1947, 6300 feet.

This species appears to be most closely related to *coriacea* Bates, but can be separated by its less deeply reflexed clypeal margin, its shorter, not advanced, clypeus, differently shaped pronotum, and longer tarsi. It differs from *rockefelleri* as stated under that species. The male genitalia

are about the same as in *rockefelleri*, with the inner margins of the lobes contiguous at basal sixth.

## GROUP 2

The two following species have only nine segments in the antennae (five instead of six segments in the antennal funicle).

### *Diplotaxis ennea*, new species

#### Figures 1, 3C

Small, reddish brown to piceous; clypeus, head, pronotum, and elytra glabrous; antennae nine-segmented; abdominal segments not ridged laterally; claws abruptly angulate, toothed subapically; base of elytra, base of pronotum, or head usually impressed and opaque in either sex.

DESCRIPTION OF TYPE, MALE: Length, 6.2 mm. Head with frontal surface irregular, slightly elevated on either side near eyes and above clypeal suture, deeply, irregularly punctate, punctures separated by about half of their own widths; clypeus without hairs, short, transverse, surface densely punctate, margins shallowly reflexed, lateral margins shallowly sinuate, anterior margin broadly truncate, anterior angles evenly rounded, not elevated; labrum concave, shallowly curved, sparsely punctate, twice longer at middle than reflexed under side of clypeus; mentum flat, declivous at anterior third, declivity arcuate, slightly raised, and margined with transverse row of hairs; palpi without dorsal impressed areas on terminal segment; antennae nine-segmented, club as long as all funicular segments combined. Pronotum widest at middle, lateral margins only slightly sinuate and constricted towards base, evenly shallowly rounded to acute anterior angles which are strongly produced; anterior and posterior lateral angles with shallowly impressed areas within, surface sparsely, irregularly punctate. Scutellum sparsely punctate, alutaceous. Elytra irregularly punctate, punctures round, separated by from one-half of to three times their own widths, second elytral interval multipunctate, costae with smaller punctures, base between humeral umbone and scutellum impressed, opaque; marginal hairs short and sparse. Under surface abdomen strongly alutaceous, not ridged laterally; pygidium densely, rugosely punctate, last abdominal segment with transverse impression above pygidium; hind tarsi of about same length as hind tibiae; claws strongly angulate medially, cleft subapically, tooth almost as long as claw and close to it, tooth obliquely truncate at apex.

TYPE MATERIAL: (Five hundred and forty-eight specimens). Holotype, male, allotype, female, and 248 paratopotypes from Catarinas, Chihuahua, Mexico, July 25, 1947. The following paratypes are also from Chihuahua:

one from 5.7 miles west of Matachic, August 19, 1950 (R. F. Smith); one from Llano de Rio Santa Clara, 27 miles west of Parrita, August 12, 1950 (R. F. Smith); one from 8 miles west of Matachic, July 8, 1947, 6400 feet; one from Santa Barbara, July 17, 1947, 6300 feet; one from Huejotitlan, July 21, 1947, 5700 feet. The following paratypes are from the state of Durango: Palos Colorados, August 5, 1947, 8000 feet, 21; Encino, July 27, 1947, 6200 feet, 216; 6 miles northeast of El Salto, Durango District, August 10, 1947, 8500 feet, 28; Coyotes, Durango District, August 8, 1947, 23; Otinapa, August 11, 1947, 8200 feet, five.

This species belongs to a group of five species which have only nine-segmented antennae. Two of the five are herein described; the other three are *abnormis* Fall, *hebes* Bates, and *contracta* Bates. *Diplotaxis ennea* can be separated from *contracta* and *mima* by not having the abdominal segments ridged laterally, and from *hebes* and *abnormis* by having the tarsal claws abruptly angulate medially, not gently rounded. It can be distinguished further: from *hebes* by its flat rather than concave mentum, and uneven front of the head; from *abnormis* by having the mental declivity bordered behind with a row of hairs; from *contracta* by the absence of a strong sinuation in front of the hind pronotal angles; from *mima* by the abruptly angulate tarsal claws. As in the other species mentioned, males of *ennea* have the abdomen mostly alutaceous or sericeous; females have it shining, with sometimes the first segment alutaceous.

There is considerable individual variability in the series. The elytral and pronotal punctuation, while usually large and sparse, is sometimes smaller and rather dense. The great majority of specimens from Chihuahua are rufous in color, whereas in the Durango samples the majority are piceous. The most interesting of the variable characters are the opaque, more or less eroded depressions present either on the head, at the base of the pronotum, or at the base of the elytra, or in all three places. About half of the 548 specimens have the depressions on the elytra only, 98 have them on the pronotum only, 52 have them on both elytra and pronotum, and 130 have no depressions at all. These opaque areas are not correlated with sex, and they vary in depth and shape. They occur also in other species, as *persisae*, *mima*, *impar*, and *impressicollis*. The male genitalia are short and robust, with the apices of the lobes more abruptly widened than in *mima*.

*Diplotaxis mima*, new species

Figures 1, 3A

Small, reddish brown to piceous; clypeus, head, pronotum, and elytra glabrous; antennae nine-segmented; abdominal segments strongly ridged



laterally from segment one to spiracle on segment five; tarsal claws evenly rounded, toothed near middle; base of elytra and base of pronotum occasionally impressed and opaque in either sex.

DESCRIPTION OF TYPE, MALE: Length, 6.8 mm. Head with front strongly declivous to clypeal suture, deeply punctate, punctures separated by about their own widths, lateral margins of front above eye with shallowly depressed, opaque spot on each side; clypeus without hairs, short, transverse, densely punctate, margins shallowly reflexed, lateral margins nearly straight, anterior margin shallowly emarginate, anterior angles evenly rounded, not elevated; labrum concave, shallowly curved, impunctate, scarcely longer at middle than reflexed under side of clypeus; mentum concave and declivous in anterior half, declivity not margined posteriorly; palpi without dorsal impressed area on terminal segment; antennae nine-segmented, club shorter than all funicular segments combined. Pronotum widest just behind middle, lateral margins shallowly rounded to base, obliquely constricted to acute anterior angles which are strongly produced, anterior and posterior angles impressed and opaque, lateral margins broadly and basal margin narrowly opaque, surface sparsely irregular punctate, punctures rounded with smooth centers. Scutellum sparsely punctate, alutaceous. Elytra sparsely punctate, punctures elongate, with smooth centers, costae with smaller round punctures, second elytral interval multipunctate, marginal hairs short and sparse. Under surface, abdomen strongly alutaceous, margined laterally with strong longitudinal carina which is situated just below elytral border; pygidium sparsely irregularly punctate, last abdominal segment with deep transverse groove above pygidium; hind tarsi slightly shorter than hind tibiae; claws evenly, shallowly rounded, cleft postmedially, tooth much shorter than claw.

TYPE MATERIAL: (Sixty-seven specimens). Holotype, male, allotype, female, and 62 paratopotypes from Palos Colorados, Durango, Mexico, August 5, 1947, 8000 feet; three paratypes from Otinapa, Durango, August 11, 1947, 8200 feet.

This species can be distinguished from the four other species belonging to the group with nine instead of 10 segments in the antennae by the following combination of characters: mentum concave and declivous in anterior half, abdominal segments strongly ridged laterally, tarsal claws evenly rounded, toothed postmedially, tooth much shorter than claw, and lateral pronotal margins not strongly emarginate in front of base. The elongate, not round, elytral punctures, which are outlined with white when viewed obliquely, are characteristic of the species. As in *hebes*, *ennea*, *abnormis*, and probably *contracta*, males of *mima* have the surface

of the abdomen alutaceous or sericeous, whereas females have it shining, except occasionally for parts of the first and second segments. Males also have the pygidium somewhat retracted or bent under.

The paratype series of 22 males and 43 females are fairly uniform except that more males are rufous, more females piceous, and the opaque depressed areas on the base of the elytra and pronotum are variable and may be present or absent, as is the case in *ennea*. Eleven of the specimens have the abdominal segments tumid or swollen medially, regardless of sex. The lobes of the male genitalia are very similar to those of *ennea*, but their apices are nearly straight, not widened into a lobe.

### GROUP 3

The four following species are medium in size (7 to 10.5 mm.), reddish brown to piceous in color, with the clypeus, head, pronotum, and elytra glabrous, the antennae 10-segmented, the abdominal segments not ridged laterally, and the tarsal claws abruptly angulate and toothed subapically.

#### *Diplotaxis decima*, new species

Figures 1, 3C

DESCRIPTION OF TYPE, MALE: Length, 10.5 mm. Head with front evenly rounded to clypeus, surface finely punctate, punctures separated by their own widths or more; clypeus short, about one-third of length of head, transverse, surface more densely and deeply punctate than head, margins not reflexed, lateral margins shallowly sinuate, anterior margin definitely emarginate, anterior angles obtusely rounded; labrum concave, same width at sides as at middle, shallowly curved anteriorly, uniformly densely punctate, nearly four times longer medially than the reflexed under side of the clypeus; mentum concave and declivous in anterior half, declivity arcuate, margined, and pubescent posteriorly; palpi without dorsal impressed area on terminal segment; antennae 10-segmented, club shorter than all funicular segments combined. Pronotum widest at middle, lateral margins nearly parallel from middle to base, shallowly rounded from middle to anterior angles which are acute and strongly produced, anterior and posterior angles shallowly impressed, surface sparsely, irregularly punctured, punctures same size as those on head. Scutellum punctured sparsely with eight punctures on borders. Elytra finely, irregularly punctate, punctures round, separated by from one-half of to three times their own widths, second interval multipunctate, costae with smaller punctures, marginal hairs short and sparse. Under surface, abdomen not ridged laterally, first segment and part of second opaque,

the remainder shining; pygidium densely punctate, last abdominal segment with transverse groove above pygidium; hind tarsi scarcely longer than hind tibiae; claws abruptly angulate medially, cleft subapically, tooth almost as long as claw and close to it.

TYPE MATERIAL: (Fifty-two specimens). Holotype, male, allotype, female, and 46 paratopotypes from Palos Colorados, Durango, Mexico, August 5, 1947, 8000 feet; two paratypes from Kilometer 36, road from Santa Barbara to Ojito, Chihuahua, August 17, 1947, 6900 feet; one paratype, Santa Barbara, Chihuahua, July 17, 1947, 6300 feet; and one from 5.7 miles west of Matachic, Chihuahua, August 19, 1950 (R. F. Smith).

The very long, wide, extremely densely punctured labrum with its front margin sunk slightly below the contiguous margin of the clypeus distinguishes this species from all others in north central Mexico. (In *atramentaria*, which also occurs at Palos Colorados, the labrum, although densely punctured, is very small.) The combination of the labrum as described, the mentum (noticeably concave and declivous in front with the declivity margined behind), the four impressed angles of the pronotum, the apically toothed and angularly bent claws, and the densely punctate pygidium will distinguish this species from any species we know of from the United States. *Diplotaxis punctipennis*, *texana*, and *marginicollis* from the United States have about the same labrum, but differ in other characters.

The paratype series is composed of 42 males and only eight females. They range in size from 8 to 10.5 mm., the males differing, as in many other members of the genus, by having the pygidium more transverse, the first segment of the hind tarsi narrower and as long as the longest of the tibial spurs, not shorter as in the female, the hind tarsi slightly longer than the hind tibiae, and the hind femora narrower. (Some of these sexual differences are so relative that both sexes must be present for adequate comparison.) The series is quite uniform in the shape of the clypeus and pronotum. The punctuation, although fine in all, varies somewhat in density. The pronotal angles are more deeply impressed in some individuals. Often the second abdominal segment is tumid or swollen on each side of the middle. The color appears black to the unaided eye, but is dark red under a lighted microscope; a few specimens, as the allotype, have the pronotum truly black. A dorsal impressed area at the base of the terminal segment of the palpi is present in the species although it is not visible in the type; often it is opaque and not visibly depressed. The male genitalia are bulbous at apex, their outer margins constricted before apex, the inner margins contiguous in basal third.

*Diplotaxis convexilabrum*, new species

Figures 1, 3C

DESCRIPTION OF TYPE, MALE: Length, 9 mm. Head with front evenly rounded to clypeus, surface finely punctate, punctures separated by about their own widths; clypeus short, more than one-third of length of head, surface punctured slightly more densely than on head, margins narrowly reflexed, lateral margins shallowly sinuate, anterior margin truncate, anterior angles evenly rounded; labrum convex, much wider at middle than at sides, slightly curved anteriorly, sparsely punctate, scarcely longer medially than the reflexed under side of the clypeus; mentum concave and declivous in anterior half, declivity arcuate, margined and pubescent posteriorly; palpi without dorsal impressed area on terminal segment; antennae 10-segmented, club as long as all funicular segments combined. Pronotum widest at middle, lateral margins subangulate at middle, thence evenly rounded to base and to anterior angles which are not produced, angles not impressed, surface finely, densely punctate, punctures same size as those on head. Scutellum with seven or eight punctures on each side in front. Elytra irregularly finely punctate, punctures round, separated by from one-half of to three times their own widths, second interval multipunctate, costae with smaller punctures, marginal hairs short and sparse. Under surface, abdomen not ridged laterally, all segments shining; pygidium sparsely, irregularly punctate, last abdominal segment with indistinct transverse groove above pygidium; hind tarsi scarcely longer than hind tibiae; claws abruptly angulate medially, cleft subapically, tooth almost as long as claw and close to it.

TYPE MATERIAL: (Twenty-seven specimens). Holotype, male, allotype, female, and 18 paratopotypes from Nombre de Dios, Durango, Mexico, August 13, 1947, 5900 feet; four paratypes from Durango, Durango, August 14, 1947, 6200 feet; one paratype from Otinapa, Durango, August 11, 1947, 8200 feet; two paratypes from 15 miles east of Aguascalientes, Aguascalientes, June 27, 1953 (C. and P. Vaurie).

In other *Diplotaxis* the labrum is either flat or noticeably concave, but in this species it is definitely convex or bulbous at middle; it is also proportionately very small and tapers narrowly to either side. Dorsally, this species is quite similar to *barbarae* except for the finer, sparser punctures on the head and the darker color.

The paratype series of 12 males and 13 females range in size from 8 to 9.5 mm. Sexual characters are the same as in *decima* except that the hind femora do not appear to be any narrower in the male, and the punctures on the pygidium are denser in most of the females. In many speci-

mens the clypeus is worn so that its anterior margin appears a nearly perfect curve. In some specimens the head is more densely punctate than in others. The male genitalia have the outer margins straight, not constricted at apex, the inner margins contiguous at basal fifth.

*Diplotaxis barbarae*, new species

Figures 1, 2A, 3C

DESCRIPTION OF TYPE, MALE: Length, 8 mm. Head with front evenly rounded to clypeus, uniformly densely punctate, punctures separated by less than their own widths; clypeus short, about one-third of the length of the head, punctured as on head, margins narrowly reflexed, lateral margins nearly straight, anterior margin truncate, anterior angles evenly

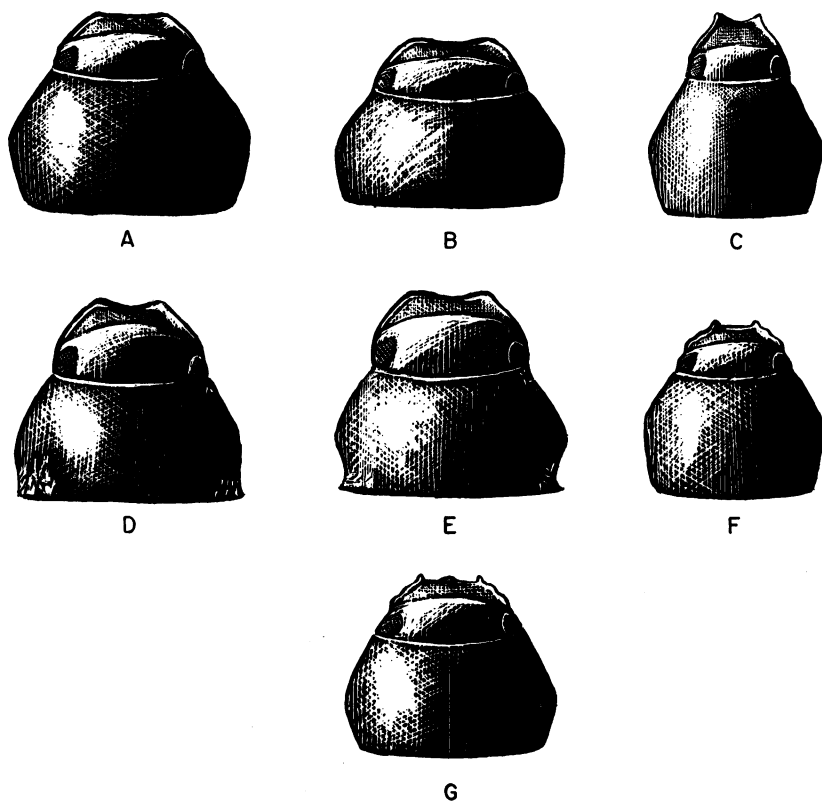


FIG. 2. Head and pronotum of some new species of *Diplotaxis*. A. *D. barbarae*. B. *D. rosae*. C. *D. fissilis*. D. *D. impar*, allotype. E. *D. impar*, holotype. F. *D. glabrimargo*. G. *D. catarinas*. The drawings were made with the specimens tilted slightly backward so that the clypeus is visible.

rounded; labrum flat, about same width at sides as at middle, shallowly curved anteriorly, sparsely punctate, slightly longer medially than the reflexed under side of the clypeus; mentum flat and declivous in anterior third, declivity posteriorly arcuate, pubescent, and strongly margined; palpi with dorsal impressed area at base of terminal segment; antennae 10-segmented, club longer than all funicular segments combined. Pronotum widest at middle, lateral margins subangulate at middle, thence evenly rounded to base and to anterior angles which are not produced, angles not impressed, surface finely, densely punctate, punctures smaller than those on head and clypeus. Scutellum with seven punctures in front. Elytra irregularly finely punctured with round punctures, second interval multipunctate, costae with smaller punctures, marginal hairs sparse and short. Under surface, abdomen not ridged laterally, all segments shining; pygidium uniformly densely finely punctured, last abdominal segment with indistinct transverse groove above pygidium; hind tarsi longer than hind tibiae by the length of one segment; claws abruptly angulate postmedially, cleft subapically, tooth almost as long as claw and close to it.

TYPE MATERIAL: (One hundred and twenty-five specimens). Holotype, male, allotype, female, and 70 paratopotypes from Santa Barbara, Chihuahua, Mexico, July 18, 1947, some at 6300 feet, some at 7500 feet; 32 paratypes from Huejotitlan, Chihuahua, July 21, 1947, 5700 feet; three paratypes from 63 miles west of Santa Barbara, Chihuahua, July 20, 1947, 5500 feet; the following paratypes from the state of Durango: seven from Encino, July 27, 1947, 6200 feet; six from Durango, August 14, 1947, 6200 feet; two from Otinapa, August 7, 1947, 7500 feet; two from El Tascate, July 28, 1947, 6400 feet, on juniper; one from San Isidro, Cuernavaca district, August 8, 1947, 6700 feet.

This species is very similar in general appearance to *ingenua* (United States and Mexico), to *rosae* (which follows), and even to *convexilabrum* (which precedes), although the last-named differs noticeably in its small, convex labrum. Both *convexilabrum* and *ingenua* differ further from the present species in their sparsely punctured pygidium, shorter hind tarsi in the male, and in the absence of the dorsal impressed area on the palpi. It is more difficult to differentiate *barbarae* from *rosae* unless both species are present for comparison, or unless males are available. The lateral lobes of the male genitalia are truncate in *rosae* because the apices are bent down, whereas in *barbarae* they are tapered and slightly pointed. External differences are that the clypeus is usually truncate in front in *barbarae*, seldom emarginate as in *rosae*, the margin is reflexed and is indistinctly obtusely angled laterally, never

lobed as in *rosae*; the pronotum is more convex, not so flat, in *barbarae* and appears less transverse; the elytra are rather more sparsely punctured; the labrum is flat, not concave, as in *rosae*, the mentum definitely declivous. The pygidium is very large in both species and equally densely punctured in both, and the hind tarsi, therefore the legs, in the males are very long.

The paratype series is quite uniform in size (7 to 8 mm.) and in color; many specimens have random black marks on the reddish pronotum. The pygidial groove is present in some individuals, absent or indistinct in others. The pygidium is almost the same shape in male and female, not noticeably more transverse in the male as in so many of the genus. The sexes can be distinguished, however, by the much shorter hind tarsi in the female (scarcely as long as the tibiae), by the shorter first tarsal segment on the hind tarsi (shorter than the longest tibial spur in the female), and by the usually thicker and less pointed tibial spurs.

*Diplotaxis rosae*, new species

Figures 1, 2B, 3C

DESCRIPTION OF TYPE, MALE: Length, 7.5 mm. Head with front evenly rounded to clypeus, uniformly densely punctate, punctures separated by less than their own widths; clypeus short, about one-third of the length of the head, punctures denser than those on head, margins scarcely reflexed, lateral margins shallowly sinuate, anterior margin broadly bisinuate, emarginate at middle, anterior angles broadly lobed, evenly rounded; labrum slightly concave at center, shallowly curved anteriorly, about the same width at sides as at middle, about three times longer medially than the reflexed under side of the clypeus, densely punctate; mentum flat and just barely declivous in anterior half, declivity posteriorly scarcely arcuate, pubescent, and scarcely margined; palpi with dorsal impressed area at base of terminal segment; antennae 10-segmented, club about as long as all funicular segments combined. Pronotum widest just behind middle, lateral margins evenly arcuate to base and to apical angles which are not produced, angles not impressed, surface finely densely punctate, punctures same size as those on head. Scutellum with 16 scattered punctures. Elytra irregularly punctured with round punctures that are larger than those on pronotum, second interval multipunctate, costae with smaller punctures, marginal hairs mostly worn, but sparse and short. Under surface, abdomen not ridged laterally, all segments shining; pygidium uniformly densely punctured, some punctures confluent; last abdominal segment without groove above pygidium;

hind tarsi longer than hind tibiae by at least the length of one segment; claws abruptly angulate postmedially, cleft subapically, tooth almost as long as claw and close to it.

TYPE MATERIAL: (Two hundred and seventy-seven specimens). Holotype, male, allotype, female, and 62 paratopotypes from Salaires, Chihuahua, Mexico, August 20, 1947, 5200 feet; 18 paratypes from Encino, Durango, July 28, 1947, 6200 feet, and the remaining paratypes from the state of Chihuahua as follows: Catarinas, July 25, 1947, 5800 feet, 39; Matachic, July 7, 1947, eight; 2 miles west of Matachic, July 7, 1947, 6400 feet, 23; 5 miles west of Matachic, August 21, 1950 (R. F. Smith), 12; 8 miles west of Matachic, July 8, 1947, 6400 feet, 25; Buena Vista, September 13, 1950 (R. F. Smith), one; Llano de Rio Santa Clara, 27 miles west of Parrita, August 12, 1950 (R. F. Smith), three; Santa Clara Canyon, 5 miles west of Parrita, June 27, 1947, 5600 feet, two; Cañon Prieto, near Primavera, July 2, 1947, 6500 to 6800 feet, 10; San Jose Babicora, July 5, 1947, 24; 12 miles northwest of Gran Morelos, August 15, 1950 (R. F. Smith), two; Huejotitlan, July 21, 1947, 5700 feet, 22; 11 miles east of Huejotitlan, July 21, 1947, 5900 feet, three; Santa Barbara, July 18, 1947, 6300 to 7500 feet, 10; 63 miles west of Santa Barbara, July 20, 1947, 5500 feet, two; Namiquipa District, July 3, 1947, 6500 feet, four; 10 miles west of Namiquipa, July 3, 1947, 6600 feet, four; 2 miles west of Pedernales, August 17, 1950 (R. F. Smith), one.

The differences between this species, *ingenua*, and *barbarae* are given above in the discussion of the last-named species. In addition, *rosae* is generally darker in color, often with the pronotum or elytra almost entirely infusate, as in the allotype; there are, however, quite a few light yellow individuals in the various populations. It is evidently a very abundant species in Chihuahua, having been taken in at least 14 localities, as well as in extreme northern Durango.

The size range in the paratype series is from 7 to 9 mm. The first tarsal segment in both sexes seems to be longer than in *barbarae*; in the female it is as long as the longest hind tibial spur, not shorter as in *barbarae*, and in the male it is about one-third longer than the hind spur. The pygidium of the male in comparison with that of the female is slightly more transverse in this species than it is in *barbarae*.

#### GROUP 4

The two following species have the labrum very strongly arched, concave, and very long at middle, the mentum also definitely concave, and the claws less angulate than in the other species in this paper.



*Diplotaxis profunda*, new species

Figures 1, 3A

Dark red-brown, appearing black; clypeus, head, pronotum, and elytra glabrous; antennae 10-segmented; abdomen not ridged laterally; claws evenly rounded, cleft submedially.

DESCRIPTION OF TYPE, MALE: Length, 10 mm. Head with front evenly and obliquely declivous to clypeus, finely densely punctate; clypeus without hairs, short, less than one-third of length of head, punctures denser than those on head and much larger, margins narrowly reflexed, lateral margins nearly straight, anterior margin broadly bisinuate, emarginate at center, anterior angles broadly lobed, evenly rounded, head and clypeus combined nearly as long as pronotum; labrum strongly arched (forming nearly a semicircle), concave from side to side, wider at center than at sides, a little longer medially than reflexed under side of clypeus, impunctate; mentum almost entirely hollowed out from anterior to posterior margin, the concavity as large as that of the labrum; palpi with long dorsal impressed area on terminal segment; antennae 10-segmented, club slightly shorter than all funicular segments combined. Pronotum widest at about middle, lateral margins subangulate at middle, thence strongly rounded to base and to anterior angles; the latter are slightly produced and all angles are broadly impressed within, surface finely punctate as on head but more irregularly. Scutellum impunctate. Elytra uniformly punctate with larger punctures than those on pronotum, surface smooth, not rugose, second interval multipunctate, costae with smaller punctures, marginal hairs sparse, short. Under surface, abdomen not ridged laterally, first abdominal segment somewhat opaque, other segments shining; pygidium with dense large punctures, last abdominal segment with transverse groove above pygidium; hind tarsi longer than hind tibiae by about the length of one segment; claws evenly, shallowly rounded, cleft submedially.

TYPE MATERIAL: (One hundred and twenty-five specimens). Holotype, male, allotype, female, and 110 paratopotypes from Palos Colorados, Durango, Mexico, August 5, 1947, 8000 feet, and 13 paratypes from Salaices, Chihuahua, August 20, 1947, 5200 feet.

This species occurs, as far as is now known, to the south of the closely related *parvicollis* (United States and Chihuahua) and *semifoveata* (United States only), both of which it resembles in many characters. It differs from both by having all the pronotal angles deeply impressed (best seen from a three-quarter view), and by having both labrum and mentum even more deeply concave, especially the mentum. The male

genitalia differ from those of *parvicollis*; the front of the head has no post-clypeal convexity as in *semifoveata*.

The size in the paratype series ranges from 9 to 11.5 mm. All but three or four individuals are quite dark in color in contrast to most Mexican *parvicollis* which are light brown. Of the 112 specimens from Palos Colorados only one has punctures on the scutellum, but of the 13 from Salaces, 11 have one or more punctures.



FIG. 3. General types of tarsal claw on the hind tarsi in some *Diplotaxis*. A. *D. mima* and *profunda*. B. *D. rockefelleri*, *indigena*, and *impar* (the last-named has the claws more or less intermediate between A and B). C. *D. ennea*, *decima*, *convexilabrum*, *barbarae*, *rosae*, *fissilis*, *glabrimargo*, and *catarinas*.

*Diplotaxis impar*, new species

Figures 1, 2D-E, 3B

Reddish brown to piceous; clypeus, head, and elytra glabrous (base of elytra often opaque), pronotum glabrous except front and hind angles which are sparsely hairy (hairs not always visible) and often opaque; antennae 10-segmented; abdomen not ridged laterally; claws rather evenly rounded, not abruptly angulate, toothed subapically.

DESCRIPTION OF TYPE, MALE: Length, 9 mm. Head with front evenly rounded and obliquely declivous to clypeus, densely but irregularly punctate; clypeus without hairs, short, about one-fourth of length of head, punctures denser than those on head, margins narrowly reflexed, lateral margins nearly straight, anterior margin broadly bisinuate, emarginate at center, anterior angles broadly lobed, evenly rounded, head and clypeus combined as long as pronotum; labrum strongly arched (forming nearly a semicircle), concave in posterior portion, wider at center than at sides, at least twice as long medially as reflexed under side of clypeus, impunctate; mentum concave and declivous in less than anterior half without any delimiting ridge or hairs posteriorly; palpi with small dorsal impressed area at base of terminal segment; antennae 10-segmented, club slightly shorter than all funicular segments combined. Pronotum widest behind middle, its sides thence deeply emarginate and constricted to hind angles which have five or six hairs, sides obliquely narrowed to front angles which are produced and have two or three hairs, no angles im-

pressed, surface irregularly sparsely punctate with punctures of same size as those on head, lateral margins obsoletely ridged anteriorly. Scutellum with two punctures at base. Elytra uniformly sparsely punctate with scarcely impressed punctures that are smaller than the punctures on pronotum, surface alutaceous and rugose, second interval multipunctate, costae scarcely evident (not at all convex), with smaller punctures, base of elytra opaque (or pruinose), depressed just within humeral angle, marginal hairs sparse, short. Under surface, abdomen not ridged laterally, posterior margin of first and anterior margin of second abdominal segment opaque, other segments shining; pygidium with punctures small, dense, contiguous, but scarcely impressed; last abdominal segment with indistinct transverse groove above pygidium; hind tarsi about same length as hind tibiae; tarsal claws rather evenly rounded, cleft subapically but farther from apex than in *rockefelleri* and *indigena* (fig. 3B).

TYPE MATERIAL: (One hundred and seventy-two specimens). Holotype, male, allotype, female, and 135 paratopotypes from 8 miles west of Matachic, Chihuahua, Mexico, July 8, 1947, 7200 feet; 11 paratypes from 2 miles west of Matachic, July 7, 1947, 6400 feet; one paratype from Matachic, July 7, 1947; one from 5 miles south of Terrero, Chihuahua, August 30, 1950 (R. F. Smith); one from Salaices, Chihuahua, August 20, 1947, 5200 feet; 21 paratypes from Palos Colorados, Durango, August 5, 1947, 8000 feet.

The pronotum (fig. 2D-E) differs from that of all the glabrous species by having scattered yellow hairs on the hind angles, often on the front angles, and on the sides near the hind angles. The hairs are worn off on some specimens, but a few hairs are visible on most individuals. This species is similar to *persisae* Cazier (Arizona, Mexico), and to *semi-foveata* (Arizona) and *parvicollis* Fall (United States, Mexico) and to *impressicollis* Moser (Mexico). It has about the same kind of claws, clypeus, labrum, mentum, and elytral punctuation, but it differs from them in the punctuation of the pygidium and in the shape and pubescence of the pronotum. The punctures on the pygidium in *impar* are so shallowly impressed and so dense that they appear more rugose and reticulate than punctate, there being virtually no smooth areas. This difference in the pygidial punctuation is the most reliable one among the members of this group of species; the male genitalia are about the same in all except *parvicollis*.

The extreme variations in the shape of the pronotum in *impar* are quite striking, yet the three kinds of pronota appear to grade one into the other. The sides in some individuals (including the holotype) are markedly cut out or emarginate at base, as in *contracta* Bates from

Mexico; in others (including the allotype) the sides are merely slightly sinuate and reflexed at base; and in others (the 21 paratypes from Palos Colorados) the sides are strongly reflexed and explanate. This latter series has the base and apex of the pronotum opaque or pruinose so that the pronotal hairs at the angles are visible in only two or three individuals. Another pronotal character that is not equal in all individuals is the partial obliteration of the lateral margins in the apical half, principally in those specimens with the basal sides strongly emarginate, but present also in some of the others. The allotype has the margins entire and sharp. The base of the elytra and the first and second abdominal segments are not always pruinose, as in the type. The scutellum, although impunctate in the majority of specimens, sometimes has four or more punctures at base. The size range of the paratypes is from 8 to 10 mm.

#### GROUP 5

The three following species are small (5.5 to 8 mm.), reddish brown to piceous in color, with head, pronotum, and elytra glabrous, but the clypeus hairy dorsally (hairs seen best from three-quarter angle); antennae 10-segmented; abdominal segments not ridged laterally; tarsal claws abruptly angulate, toothed subapically. These three species actually have minute hairs in the dorsal punctures, which can be seen only under high magnification; these hairs are present also in other species of the *trapezifera* complex that have always been considered "glabrous."

#### *Diplotaxis catarinas*, new species

Figures 1, 2G, 3C

Light reddish brown, with head and abdomen or head and elytra often infusate.

DESCRIPTION OF TYPE, MALE: Length, 6.5 mm. Head with front abruptly declivous, virtually perpendicular to clypeus, front bulbous when seen from side, finely, densely punctate; clypeus hairy anteriorly, a little less than one-half of length of head, punctures twice as large as those on head, and denser, all margins shallowly reflexed, lateral ones strongly sinuate, anterior margin with small tooth-like situation at middle, anterior angles furnished each with a prominent triangular tooth; labrum deeply concave and sunken in entire central portion, its anterior margin virtually straight, width of labrum at sides about same as at middle, same length at middle as reflexed under side of clypeus, surface seemingly sparsely punctate; mentum flat, apparently without declivity, but with a straight narrow ridge indicated by four setae; palpi without dorsal impressed area on terminal segment; antennae 10-segmented, club longer

than all funicular segments combined. Pronotum widest just behind middle, lateral margins evenly arcuate to base and to apical angles which are not produced or impressed, basal angles more or less rounded off, surface deeply, very irregularly punctate, punctures sparser on disc, dense and confluent on sides, twice as large as punctures on head. Scutellum with 10 punctures on the margins. Elytra densely, deeply punctate as on sides of pronotum, also rugose, second interval with a single somewhat irregular line of large punctures, costae with smaller punctures, costa between first two intervals unusually broad and convex, marginal hairs sparse and short (about as long as diameter of elytral punctures). Under surface, abdomen not ridged laterally, all segments shining; pygidium uniformly densely punctate; last abdominal segment without groove above pygidium; hind tarsi slightly longer than hind tibiae; claws abruptly angulate at middle, cleft subapically, tooth shorter than claw and close to it.

TYPE MATERIAL: (Two hundred and sixty-nine specimens). Holotype, male, allotype, female, and 254 paratopotypes from Catarina, Chihuahua, Mexico, July 25-26, 1947, 5800 feet; two paratypes from Huejotitlan, Chihuahua, July 21, 1947, 5700 feet; two from Cañon Prieto, near Primavera, Chihuahua, July 2, 1947, 6500 to 6800 feet; nine from Encino, Durango, July 27, 1947, 6200 feet.

This small species differs from all species we know by having a small projecting sinuation, like a small third tooth, in the center of the clypeal margin between the two prominent lateral teeth, often best seen from below. It differs further from all but *contracta* (Durango) and *glabrimargo* (Durango, Chihuahua) by having the labrum markedly hollowed out at center. It is close, as are also *glabrimargo* and *fissilis* that follow, to the many species in the *trapezifera* group or complex of small reddish forms with apically bent claws, flat mentum, and trapezoidal clypeus with dentiform lateral angles (represented in the United States by such species as *angularis*, *tenuis*, *producta*, *confusa*, *pinalica*, etc., from the southwestern states). Most if not all of these species, including *fissilis*, are more finely punctured than either *catarinas* or *glabrimargo*, and they have long hairs protruding from the elytral margins, these hairs being definitely alternating in length, the long ones twice or more the length of the short ones. In *catarinas*, on the other hand, the hairs are uniformly short, and in *glabrimargo* they are virtually non-existent. The labrum in *catarinas* is even more concave than in *glabrimargo*, although the difference is perceivable only after an examination of many specimens of both species.

Of the 269 specimens in the series, only about 30 have no sinuation visible on the clypeal margin. This lack may be caused by wear, because

these individuals agree with the others in all other characters, such as the pygidium, front of head, shape of pronotum, elytral punctuation, labrum, and marginal hairs of elytra. One of these specimens from Encino, Durango, was dissected, and it has genitalia similar to those of other paratypes with the clypeal margin definitely sinuate. The male genitalia have the inner margins of the two lobes contiguous in a little less than basal third. The apices are quite distinct from those in most other species, being obliquely truncate and bent towards each other so that the inner angles touch and the outer angles make the apices appear triangularly pointed.

The size range of the paratypes is from 5.5 to 7.5 mm. Although there are no piceous or black specimens in these populations, in populations of *glabrimargo* there are a few individuals with the same reddish color as *catarinas*, the remainder being piceous to the unaided eye. The abrupt declivity on the front of the head in *catarinas* is made even more noticeable in many individuals by the addition of a triangular impression at center.

*Diplotaxis glabrimargo*, new species

Figures 1, 2F, 3C

Dark red-brown, appearing black to unaided eye, with head and abdomen usually black.

DESCRIPTION OF TYPE, MALE: Length, 6 mm. Head with front rounded, then declivous perpendicularly to clypeus, finely, densely punctate; clypeus hairy anteriorly, about one-third of length of head, punctures larger than those on head, and denser, all margins shallowly reflexed, the lateral ones slightly sinuate, anterior margin shallowly emarginate, not sinuate, anterior angles furnished each with a prominent triangular tooth; labrum shallowly concave, its anterior margin virtually straight, width of labrum at sides same as at middle, same length at middle as reflexed under side of clypeus, surface shining, rugose (punctate?); mentum flat, apparently without declivity, but with a straight narrow ridge indicated by four setae; palpi without dorsal impressed area; antennae 10-segmented, club longer than all funicular segments combined. Pronotum widest at middle, lateral margins subangulate at middle, thence evenly rounded to basal and apical angles which are not impressed or produced, surface densely and irregularly punctate, punctures sparser on disc, denser on sides, and slightly larger than those on head. Scutellum with six punctures on margins. Elytra densely, deeply punctate with larger punctures than on sides of pronotum, also rugose, second interval with a single though irregular row of large punctures in center, costae with smaller

punctures, marginal hairs absent. Under surface, abdomen not ridged laterally, all segments shining; pygidium sparsely irregularly punctate with large punctures as on elytra; abdomen missing but no transverse groove above pygidium in allotype; hind tarsi slightly longer than hind tibiae; claws abruptly angulate at middle, cleft subapically, tooth shorter than claw and close to it.

TYPE MATERIAL: (One hundred and fifty-nine specimens). Holotype, male, allotype, female, and 90 paratopotypes from Palos Colorados, Durango, Mexico, August 5, 1947, 8000 feet; the following paratypes also from the state of Durango: one from Encino, July 27, 1947, 6200 feet; one, Durango, August 14, 1947, 6200 feet; one, 5 miles northeast of El Salto, Durango district, August 10, 1947, 8500 feet; the following paratypes from the state of Chihuahua: Salaires, August 20, 1947, 5200 feet, 51; Catarinas, July 25-26, 1947, 5800 feet, 13.

The relation of this species to *fissilis* and *catarinas* is given above in the discussion of the latter species. In addition, the character that distinguishes this species from *catarinas* and others in the *trapezifera* group is the virtual absence of hairs on the elytral margins. A few hairs are sometimes present at base (seven or eight hairs are visible in 14 of the 159 specimens), but most individuals lack them entirely. The pygidium is more sparsely punctate than in *catarinas*, and is so irregularly punctate that shining impunctate areas are often present. The anterior margin of the clypeus is never sinuate at middle as in *catarinas*, but is evenly emarginate. The paratypes range in size from 5 to 7.5 mm., and the great majority appear black or piceous to the unaided eye; only a dozen or so are reddish brown as in *catarinas*. The lobes of the male genitalia have their inner edges contiguous in a little more than basal third; the apices are truncate and flattened.

*Diplotaxis fissilis*, new species

Figures 1, 2C, 3C

Reddish brown to piceous and black, with head usually black in all or in part.

DESCRIPTION OF TYPE, MALE: Length, 7 mm. Head with front declivous to clypeus, finely, densely punctate; clypeus hairy anteriorly, more than one-third of length of head, punctures larger than those on head, all margins deeply reflexed, lateral margins sinuate, anterior margin deeply emarginate, broadly V-shaped, anterior angles furnished each with a prominent triangular tooth; labrum shallowly concave, its anterior margin shallowly curved, width of labrum at sides about same as at middle, at middle same length as reflexed under side of clypeus, densely punctate;

mentum feebly declivous in anterior fourth, the declivity arcuate posteriorly and with a few setae; palpi without dorsal impressed area; antennae 10-segmented, club same length as all funicular segments combined. Pronotum widest at middle, lateral margins subangulate at middle, thence strongly rounded to basal and apical angles which are not produced or impressed, surface uniformly finely densely punctate, punctures slightly larger than those on head. Scutellum densely covered with punctures. Elytra densely punctate with larger punctures than those on pronotum, punctures transversely rugose, especially on first interval, surface alutaceous, second interval multipunctate, costae with smaller punctures; marginal hairs dense, alternating short with long (subapical hairs worn short). Under surface, abdomen not ridged laterally, all segments shining; pygidium uniformly densely punctate; last abdominal segment without groove above pygidium; hind tarsi slightly longer than hind tibiae; claws abruptly angulate at middle, cleft subapically, tooth shorter than claw and close to it.

TYPE MATERIAL: (Three hundred and five specimens). Holotype, male, allotype, female, and 167 paratopotypes from Santa Barbara, Chihuahua, Mexico, July 18, 1947, 6300 feet; 112 paratypes from 63 miles west of Santa Barbara, July 20, 1947, 5500 feet; 24 paratypes from 10 miles northwest of Sombarete, Zacatecas, July 1, 1954, 7700 feet (R. H. Brewer).

The long marginal hairs of the elytra, the deeply split clypeus, the less concave labrum, and the more finely punctured, less transverse pronotum distinguish this species from the two that precede. From most other small species in the *trapezifera* group it differs in its dark color, longer, more deeply emarginate clypeus, shorter hind tarsi, more convex pronotum, larger pygidium, and different male genitalia. The latter seem very large for the size of the beetle; they have the apices overlapping and the lobes contiguous within at middle, as in some of the larger members of the *trapezifera* group such as *consentanea*, not in basal third or fourth. Dorsally it is most similar to *aenea*, widespread throughout Mexico, but the clypeus in that species is scarcely emarginate and has straight side margins, the pygidium is much smaller, and the color is usually greenish black.

The type series ranges in size from 5.5 to 8 mm. Of the 305 specimens more individuals appear piceous in color to the unaided eye than reddish brown; only about a dozen are light in color. The series from Zacatecas are quite uniformly black, with only the under surface, legs, and clypeus reddish brown. The black head is absent in only 12 or 13 individuals.



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