

Descriptions of new butterflies from Iran

by

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ABSTRACT. — The following new species and subspecies collected by the author in Iran are described: *Colias aurorina sovarensis* ssp. n. (Pieridae), *Agrodiaetus transcaspica avajica* ssp. n. (Lycaenidae), *Agrodiaetus khoshyeilaqi* sp. n. (Lycaenidae), *Chilades lempkei* sp. n. (Lycaenidae). In addition aberrant forms of *Agrodiaetus hamadanensis* (De Lesse) and of *Colias aurorina sovarensis* ssp. n. are described.

During five summers (1971-1975) the author made collecting trips to Iran, each trip taking about six weeks. During study of the collected material some undescribed species and subspecies were found, the descriptions of which follow here.

Colias aurorina sovarensis ssp. n. (figs. 1, 2)

Holotype: ♂, Iran, Prov. of Mazandaran, Khosh Yeilaq, Mt. Kuh-e-Sovar, 2000-2500 m, 15-21.VI.1973, leg. W. L. Blom. Allotype (♀), and 98 ♂ and 20 ♀ paratypes with same data; 5 ♂ and 9 ♀ paratypes, same locality, but 4-6.VI.1972; 5 ♂ and 3 ♀ paratypes, same locality, but 28.VI-2.VII.1971. Most types are in the author's collection, paratypes have been deposited in the Rijksmuseum van Natuurlijke Historie, Leiden, the Instituut voor Taxonomische Zoölogie, Amsterdam, the Zoologische Staatssammlung, München, and in various other collections.

The type-locality is about 8 km northeast of Khosh-Yeilaq, a village between Shah-Passand (Prov. of Mazandaran) and Shahrud (Prov. of Semnan), at the eastern end of the Reshteh ye Alborz. The species was found there in all five years, but in 1974 and 1975 I was so late there that only badly damaged females were on the wing.

Description. Length of forewing, ♂ 26-29 mm, ♀ 27-32 mm. Markings and colour as in nominotypical *aurorina*, but *sovarensis* looks darker. The orange of the male is darker than in ssp. *libanotica* Lederer and ssp. *heldreichi* Staudinger, and slightly browner than in ssp. *rosei* Gross. The type-locality of the last subspecies, the central part of the Reshteh ye Alborz, is closest to that of ssp. *sovarensis*. In colour the new subspecies is intermediate between ssp. *heldreichi* and ssp. *rosei*. The females are also browner than ssp. *rosei*.

In North Iranian specimens of this species the outer margin of the forewing is usually straighter than in other subspecies, so that the apex is more acute. This is particularly so in ssp. *sovarensis*. The new subspecies is on the average smaller than ssp. *rosei*, and the orange discal spot on the upperside of the hindwing is smaller than in ssp. *rosei* in both sexes.

Among the series collected 15-21.VI.1973 there is a male with a greenish yellow colour on the upperside of the wings, while also the discal spot of the hindwing and the underside of the wings is paler than normal. I name this form *oorschoti*, in honour of my friend H. van Oorschot, who



Figs 1-2. *Colias aurorina sovarensis* ssp. n. 1, ♂, paratype; 2, ♀, paratype; natural size.



Figs 3-6. *Agrodiaetus transcaspica avajica* ssp. n. 3, ♂, paratype, upperside; 4, ♂, paratype, underside; 5, ♀, paratype, upperside; 6, ♀, paratype, underside. All figures double size.

found the specimen among the unmounted material I had given him for his collection and who gave it back when on mounting it turned out to be a new form.

For the identification of various Lycaenidae I visited the Zoologische Staatssammlung, München, and I received much help there from Dr. W. Forster, who gave me the honour to describe the following new taxa.

Agrodiaetus transcaspica avajica ssp. n. (figs. 3-6)

Holotype: ♂, Iran, Prov. of Hamadan, Avaj, 2000-2500 m, 27-28.VII.1975, leg. W. L. Blom. Allotype: ♀, same data, but 4-6.VIII.1974. Paratypes: 2 ♂, 11 ♀, same data as allotype, 10 ♂, 2 ♀, same data as holotype. All types in the author's collection.

Description. Male, 12-15 mm. Upperside shining sky-blue, costal margin white, outer margin and veins thinly black, fringes white, no discal spot. Underside forewing ground colour very light grey-brown, spots large, black, white-ringed, marginal markings weakly developed. Underside hindwing ground colour very light grey-brown with blue scales at the base. All spots very small, black, white-ringed, the two spots at the costal margin the largest, marginal markings obscure; white streak clear, of equal width throughout.

Female, 11-13 mm. Upperside dull dark brown, veins and marginal line darker brown or black. Marginal markings often visible on all wings by a lighter brown colour, sometimes more or less orange that is veiled by the brown ground colour. Black discal spot rather well-defined. Fringes white. Underside forewing ground colour light brown, spots large, black, white-ringed; marginal markings brown, sometimes surrounded by a darker brown shadow, particularly near the tornus, increasing in size from apex to tornus. There is often a faint white line running from the third ocellus to the underside of the discal spot. Underside hindwing also light brown, scarcely any blue scales near the base; markings as in male, white streak clear, but with much individual variation.

This new subspecies differs from other subspecies in the smaller size, the lighter blue of the male, the lighter ground colour of the underside of both sexes. It was found in the mountains

west and east of the village of Avaj, which lies on the road from Qasvin to Hamadan, just at the northern border of the province of Hamadan.

At the same locality I found an aberrant female of *Agrodiaetus hamadanensis hamadanensis* De Lesse (27-28.VII.1975). This specimen, with a forewing length of 17 mm, has on the upperside of the forewing the bright lilac ground colour of the male, while the costal margin of all wings is black; discal spot and veins of forewing black as normal, marginal markings also normal, orange dusted with brown. I name this form *purpurascens* forma nova (fig. 7).

Agrodiaetus khoshyeilaqi sp. n. (figs. 8, 9)

Holotype: ♂, Iran, Prov. of Mazandaran, Khosh Yeilaq, Kuh-e-Sovar, 2000-2500 m, 23-26.VII.1974, leg. W. L. Blom. Allotype: ♀, same data as holotype. Paratypes: 27 ♂, 15 ♀, same data, 25 ♂, 12 ♀, 23-25.VII.1975. All types in the author's collection, except some paratypes in the Zoologische Staatssammlung, München, and in the collection of Prof. Dr. K. Rose, Mainz-Bretzenheim.

Description. Male, 12-15 mm. Upperside light, shining sky blue of a particular shade that is not found in other *Agrodiaetus* species; it reminds of the colour of *Plebicula dorylas* (Denis & Schiffermüller) from the Spanish side of the Central Pyrenees (the Central European *P. dorylas* is more lilac and quite different from *A. khoshyeilaqi*). Veins thinly black only against the black outer marginal line. Fringes white, gray striped at the end of the veins. No discal spot. Underside forewings ground colour grey-brown to dark grey, discus slightly lighter. Spots large, black, white-ringed. Size of marginal markings increasing from apex to tornus. Underside hindwing ground colour grey-brown to dark grey with many greenish blue scales at the base, where the white streak is obscured and almost invisible. Discal and other spots small, but well-marked. Marginal markings well-marked in the darker specimens, less well-marked in the lighter ones. Grey streaks along the termen with dark caps to the inside.

Female, 11-13 mm. Upperside dark brown, veins and marginal line darker, black discal spot on forewing, fringes brownish white. Marginal markings of fore and hindwing faint, sometimes dusted orange, particularly at tornus. Underside ground colour brown, spots as in male, outer margin of hindwing darkening against marginal line, with white caps. White streak obvious. Many green shining scales at the base.

This species was found in the same mountains as *Colias aurorina sovarensis* described above. It can be distinguished from other *Agrodiaetus* species by the colour of the upperside of the male and the dark underside of both sexes. Only *A. erschoffi* (Lederer) and *A. glaucias* (Lederer) are darker on the underside of the wings, but these species both have a black-blue upperside. According to Forster a genital examination does not yield results in the genus *Agrodiaetus*.

Chilades lempkei sp. n. (figs. 10-14)

Holotype: ♂, Iran, Prov. of Fars, Persepolis, Takht-i-Jamshid, 1700 m, 8.VII.1974, leg. W. L. Blom. Allotype, ♀, same data. Paratypes: 3 ♂, same data, 1 ♂ 2-3.V.1977, 3 ♂ and 4 ♀ 4.VII.1977, 1 ♂, Tschel Tschäsmä, road Kaserun-Schiraz, 1200 m. All types in the author's collection, except the last paratype which is in the Zoologische Staatssammlung, München.

Description. Male, 10.8 mm. Upperside lilac, of a somewhat lighter shade than *C. galba* (Lederer) and *C. phialia* (Groum-Grshimailo). Veins black. No discal spots. Outer marginal lines narrowly black. Hindwing with two small black spots at tornus, white underlined, the spot in space 2 most distinct. Fringes white. Small tail at vein 2 of hindwing. Underside light grey-brown. Forewing with a double row of markings in the marginal area, the postdiscal row more distinct than the other row. Discal spot a white oval ring. Marginal markings of hindwing consist of white rings, of which two at the tornus are filled with dark blue and some silvery blue scales. Basad of the marginal markings a white band, about 1 mm wide, interrupted by the veins, followed by a meandering white line that almost reaches the white discal ring. There are three

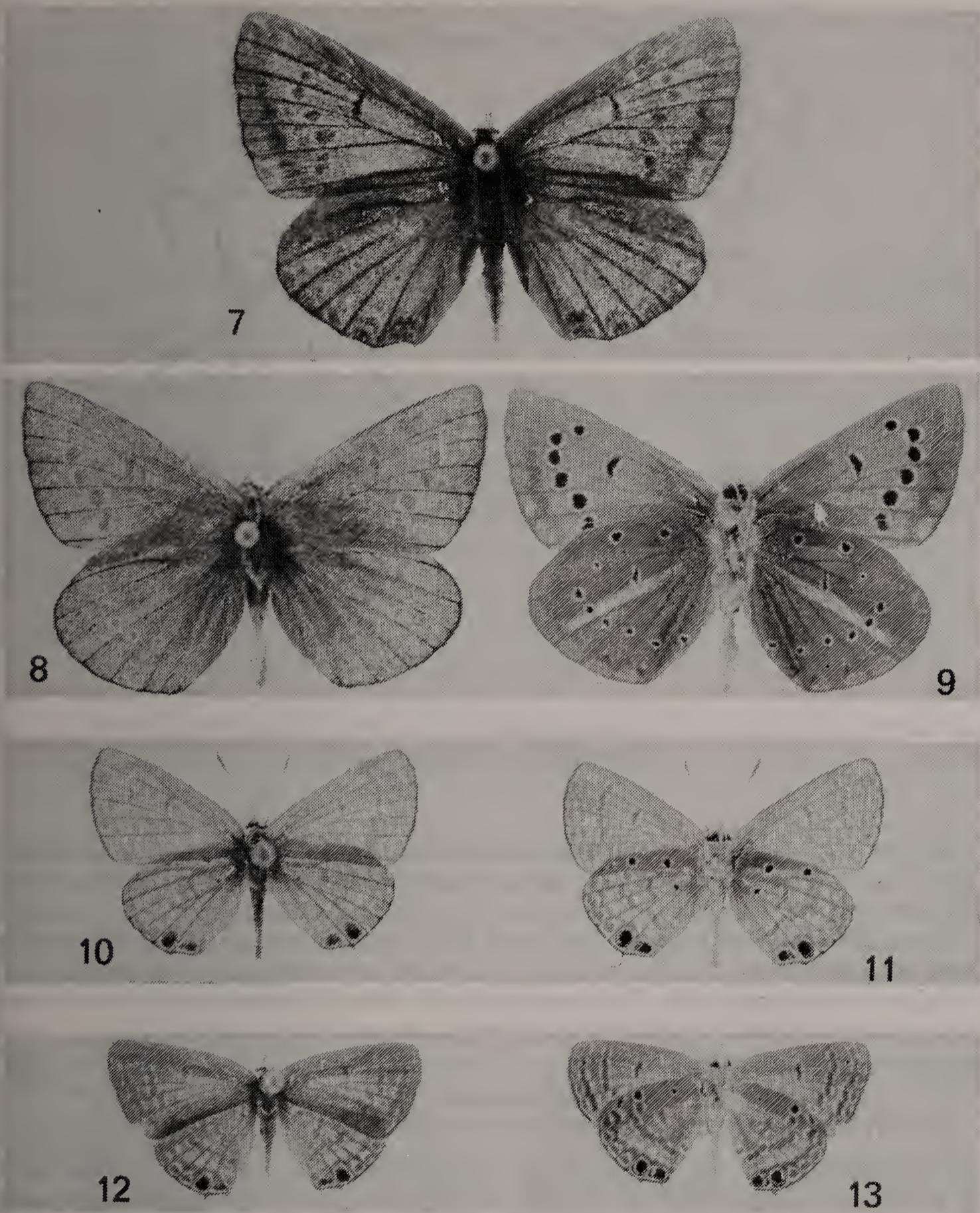
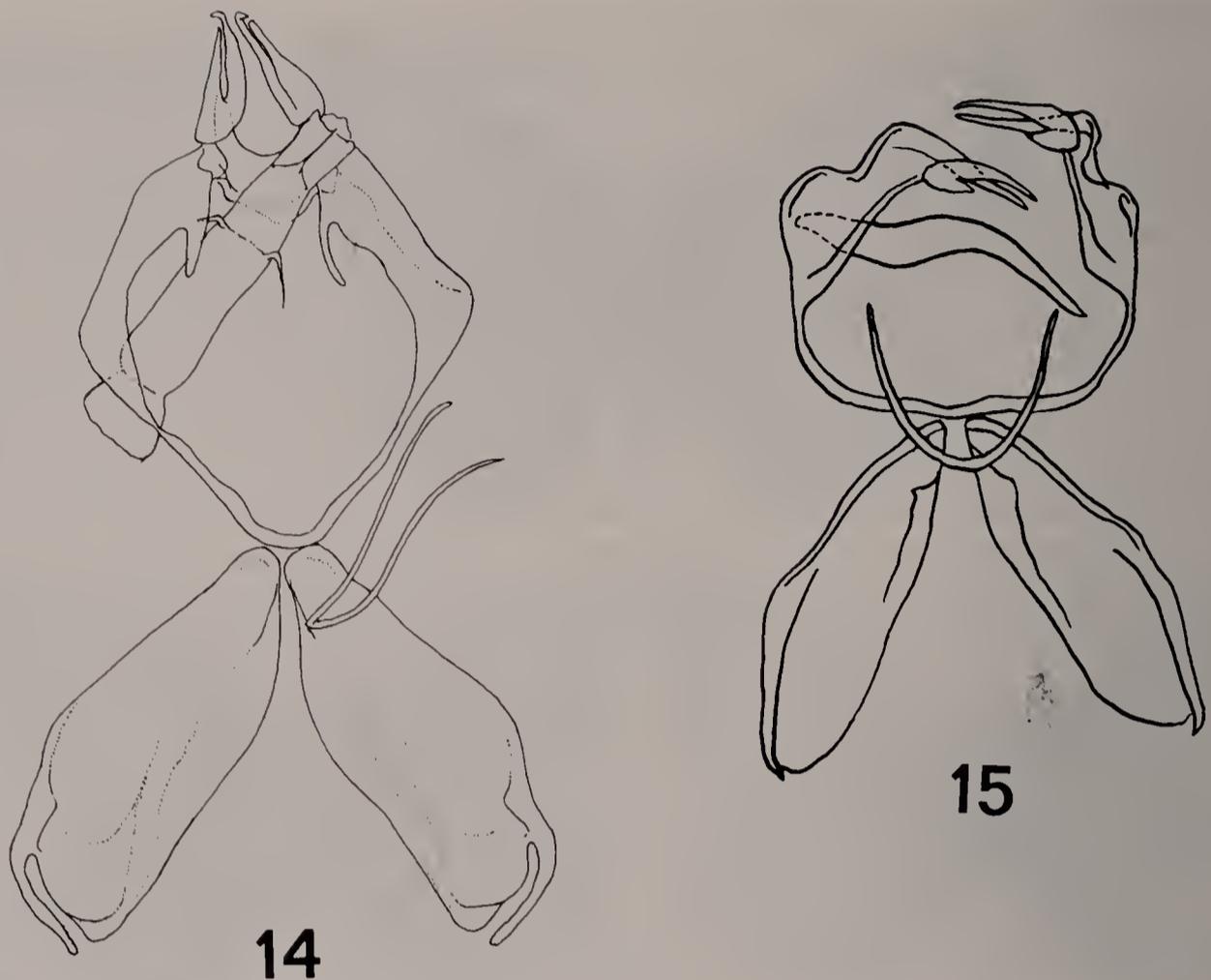


Fig. 7. *Agrodiaetus hamadanensis hamadanensis* forma *purpurascens* f.n., ♀, holotype, upperside. Figs 8-9. *Agrodiaetus khoshyeilaqi* sp. n. 8, ♂, paratype, upperside; 9, ♂, paratype, underside. Figs 10-13. *Chilades lempkei* sp. n. 10, ♂, holotype, upperside; 11, ♂, holotype, underside; 12, ♀, allotype, upperside; 13, ♀, allotype, underside. All figures double size.

small black, white-ringed spots: one discal spot at the costa, one basal spot at the costa, and one basal spot in the cell.

Female, 9 mm. Upperside dark brown from cell to termen. From base to end of cell shining sky blue. Costa broadly dark brown, also veins and dorsum dark brown. Hindwing as forewing, but dark brown area along termen with five white-ringed spots, the two tornal spots filled with dark blue scales, the second tornal spot large and ringed with orange-yellow. Submarginal row of grey white spots. No discal spot. Fringes white. A short tail at vein 2. Underside as in male, but only one small, black, white-ringed spot on the hindwing, at the middle of the costa.



Figs 14-15. Male genitalia. 14, *Chilades lempkei* sp. n.; 15, *Chilades eleusis* Damais (drawings by R. de Jong (14) and W. Dierl (15)).

Dr. Forster kindly drew my attention to the fact that this new species is close to *Chilades eleusis* Damais which occurs from Senegal to Nubia and Ethiopia. See figs. 14 and 15 for differences in the male genitalia.

I name this species in honour of my friend B. J. Lempke, Amsterdam, for his extensive lepidopterological work.

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ERISTALIS PERTINAX (SCOPOLI) EN E. TENAX (LINNAEUS) (DIPT., SYRPHIDAE).
 Deze zweefvliegsoorten komen voort uit rattestaartlarven en lijken erg op elkaar. Gedurende het gehele seizoen, van april tot en met half september, is *E. pertinax* zeer algemeen, ook op de schaarse vliegbloemen in de droge zandstreken van de Veluwe. Op braamstruiken (*Rubus spec.*) b.v. zijn er in juli-augustus dergelijke hoeveelheden *E. pertinax* aanwezig dat ik de indruk kreeg dat het een tijdelijk uitwijken van deze grote vliegen betrof van hun normale habitat, waterrijke streken, naar de bloemen van de droge zandgronden. Wellicht zijn de nieuwe graslandcultuurmethoden daar debat aan: het „creëren” van éénvormige grasvlakten, zonder vliegbloemen. Deze goede vliegers gaan dan voor nectar en stuifmeel andere streken opzoeken. *E. tenax* gold van oudsher altijd als verreweg de gewoonste soort. Als we veronderstellen dat de oudere entomologen dit goed gezien hebben dan is de oorzaak van het tegenwoordig veel talrijker voorkomen van *E. pertinax* wellicht de overgang van natuurlijke bemesting naar kunstmesttoevoeging. *E. pertinax*-larven zouden dan meer de „fosfaatsloten” bewonen, *E. tenax*-larven meer de beerputten, mesthopen en dergelijke.

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