

CONTRIBUTIONS TO THE FLORA OF WEST PAKISTAN

I. LEGUMINOSAE

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Abstract

Two new species, *Tephrosia shamimii* Ali and *T. rechingeri* Ali and one new combination, *Onobrychis laxiflora* var. *schugnanica* (B. Fedtsch.) Ali are described and three taxa, *Lotus schimperii* Steud., *L. makranicus* Rech. f. et Esfand., *Hippocrepis constricta* Kunze are recorded from W. Pakistan. Taxa previously accommodated under *Dorycnium* and *Atylosia mollis* Benth. and *A. volubilis* (Blanco) Gamble are briefly discussed.

In connection with the preparation of an account of the family Leguminosae for the Flora of West Pakistan, the author had the opportunity of evaluating the material present in W. Pakistan and European Herbaria. In some cases this has resulted in revised taxonomic or nomenclatural conclusions. Only new or interesting cases pertaining to *Dorycnium*, *Lotus*, *Hippocrepis*, *Atylosia*, *Tephrosia* and *Onobrychis* are discussed here. Accounts of the genera *Oxytropis* and *Astragalus* will be published elsewhere.

The recommendations of Lanjauw and Stafleu (1964) have been followed regarding the abbreviated names of the herbaria with the following addition: Karachi University Herbarium (KUH).

1. *Dorycnium* Vill.

The first record of the genus *Dorycnium* from West Pakistan is based on *D. calycinum* Stocks (Stocks, 1852). Boissier (1872) accepted this species in the genus *Dorycnium*, but not having seen enough material, he regarded it as an anomalous species. He thought it to be different from *Dorycnium* and probably *Lotus* and doubtfully indicated that it may belong to *Ononis*. Burkill (1909) also lists this species in the genus *Dorycnium*. In 1957 Sirjaev and Rechinger f. described a new species of *Astragalus*, *Astragalus mirus* Sirj. & Rech. f. (Rechinger, 1957), based on the material collected between Herat and Sauzak in Iran.

Comparison of the holotypes of *Dorycnium calycinum* Stocks and *Astragalus mirus* Sirj. & Rech. f. has revealed that the two are conspecific. Sirjaev & Rechinger f. (Rechinger, 1957) have indicated their dissatisfaction about accommodating this taxon in the genus *Astragalus* by questioning whether the taxon should be placed in a new genus.

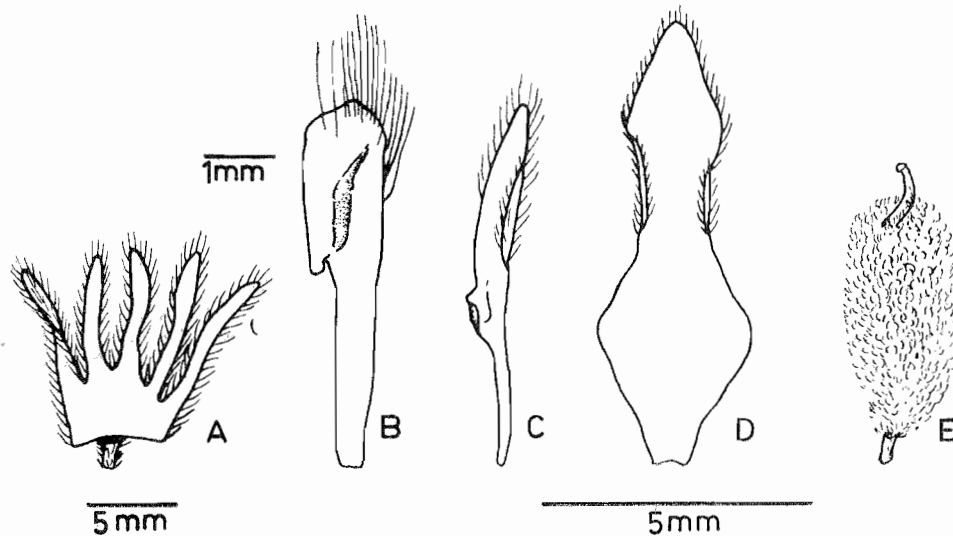


Fig. 1. *Astragalus mirus* Sirj. & Rech. f.: A. Calyx; B, Keel; C, wing; D, vexillum; E, fruit.

A study of the floral parts seems necessary for proper understanding of the situation. One to two cm. long peduncle supports 5-10 flowered inflorescence. Each flower is subtended by 2 mm long villous bracts. The calyx, with 5 elongated lobes, is villous. Being longer than the corolla parts, it permanently encloses them. The upper parts of vexillum, wing and keel (Fig. 1) are also villous. Sirjaev & Rechinger f. (1957) have described the fruit as unilocular and uniovulate, though Stocks (1852) described the ovary as biovulate, but the fruit is one-seeded. This taxon certainly seems anomalous in the genus *Dorycnium*, however, pending further investigations, it is being retained in the genus *Astragalus*.

In 1919, Blatter and Hallberg, described *Dorycnium villosum*, from Makran. The type material, expected to be in the Blatter Herbarium, Bombay, is presently untraceable. However, judging from the study of the material collected from the Type locality, I have come to the conclusion that it is conspecific with *Lotus makranicus* Rech. f. and Esfand. Thus, it is obvious, that the genus *Dorycnium* does not occur in W. Pakistan.

## 2. Lotus L.

*Lotus schimperi* Steud., Nom. 2nd. ed. 2: 75.1841, *nomen nudum*, ex Boiss. Fl. Or 2: 170.1872; Gillett & Bullock in Kew Bull. 13: 255.1958; Gillett in Kew Bull. 13:376. 1959.

*L. compactus* Chrtkova-Zertova in Folia Geobot. Phytotax. 3: 108.1968.  
Lectotype: 'In planitie deserti prope Dscheddum, 14 et 28.1.1837, W. Schimper 844 (G-not seen; Iso, K.)

Baluchistan: 10 miles from Gwadar on way to Sunster, 27.4.1970, M. Qaiser, A. Raza & Abrar Hussain 999 (KUH); About 35 miles from Panjgur, on way to Hushab, 29.4.1970, M. Qaiser, A. Raza & Abrar Husain 1087 (KUH).

Distribution: W. Pakistan, Makran; Persian Coast; Arabia; Egypt; Sudan Republic, Eritrea and Socotra.

Flowering Period: March.

This species is being recorded for the first time from West Pakistan.

*Lotus makranicus* Rech. f. et Esfand. in Bot. Jahrb. 75: 334. 1951. *Pseudolotus makranicus* (Rech. f. et Esfand.) Rech. f. in Biol. Skr. Dan. Vid. Selsk. 9(3): 21.1958.

*Dorycnium villosum* Blatter & Hallb. in J. Ind. Bot. Soc. 1:131. 1919.  
Holotype: Persian Baluchistan, Makran: 'Tange Sorche', 21.4.1949, Sharif 700E(W).

Baluchistan: About 10 miles from Turbat on way to Pasni, 25.4.1970, M. Qaiser, Asad Raza & Abrar Hussain 928 (KUH); 5 miles from Mund on way to Turbat, 10.4.1969, S.I. Ali, S.A. Faruqi & Sultanul Abedin 1618 (KUH); 7 miles from Hushab on way to Awaran, 23.4.1970, M. Qaiser, A. Raza & Abrar Husain 839 (KUH); 5½ miles from Mund, Mund - Turbat Road, 13.2.1969, S.I. Ali, S.A. Faruqi & Sultanul Abedin 1006 (KUH); Makran: 20 Km W Hoshab, 26°00' 'N, 62°50'E, 19.4.1965, K.H. Rechinger 28012 (W); Makran: in planitie Balgathar inter Hoshab 26°00 'N, 62°50 'E, et Panjgur, 26°58 'N, 64°06 'E, 600m, 19.4.1965, K.H. Rechinger 28040 (W); Makran 60 Km S Panjgur, 26° 58 'N, 64°06 'E, 800 -850 m, 19.4.1965, K.H. Rechinger 28096 (W) Inter Awaran Turbat, 26°00 'N, 63°06 'E, in alveo lapidoso, 100 -200 m, 11.4.1965, K.H. Rechinger et 27755 (W); Panjgur, 900m, stony hills and wadis, G. Popov 126 (W).

Arabia: Oman, Foothills of Jebel Akhdhar, ±1000 ft. prostrate herb, flowers red and orange, common on hillsides, 2.5.57, G. Popov GP/57/65 (BM,W).

Distribution: W. Pakistan, Makran; Persia, Persian Makian; Arabia  
Flowering Period: March—April.

It is a new record for W. Pakistan and Arabia.

### 3. *Hippocrepis* L.

*Hippocrepis constricta* Kunze in Linnaea 16: 320. 1842.

Syntypes: 'Djeddae in arenosis ad mare', 4.3.1836, W. Schimper 939 (K); 'ad pedem collis prope mare Jeddae', 1837, S. Fischer 82 (K).

Baluchistan: 10 miles from Turbat, on way to Awaran, dried river bed, sandy clay, 9.4.1969, S. I. Ali, S.A. Faruqi & Sultanul Abedin 1549 (KUH); 33 miles from Mund, on way to Teerandezak, 11.4.1969, S.I. Ali, S.A. Faruqi & Sultanul Abedin 1772 (KUH); Makran, west of Hoshab, sandy plain, 11.4.1965, Jennifer Lamond 360 (E); Hoshab to Panjgur, north of Baigather plain, sandy roadside plain, c. 850 m, 19.4.1965, Jennifer Lamond 556 (E); Makran: 60 Km S Panjgur, 26°58'N, 64°06'E, 800—850 m, 19.4.1965, K.H. Rechinger 28095 (W); Inter Pasni, 25°13'N, 63°30'E, et Kappar, 25° 18'N, 62°42'E, 14.4.1965, K.H. Rechinger 27858 (W); 8-25 Km W Awaran versus Turbat, 26°00'N, 63°06'E, 11.4.1965, K.H. Rechinger 27710 (W); Suntsar, 25°31'N, 62°02'E, versus Kikki, 25°42'N, 62°36'E, 17.4.1965, K.H. Rechinger 27976 (W).

Distribution: W. Pakistan, Makran; S. Arabia; Egypt.

This is the first record of this genus from W. Pakistan.

### 4. *Atylosia* Wight & Arn.

*Atylosia mollis* Benth. in Miq. Pl. Jungh. 243. 1852.

Holotype: Napalia, Wallich 5574 (ex Herb. Benthamianum-K).

Prain (1897) has pointed out that under *A. mollis* Benth., Baker (1876) had admitted two distinct species. He has defined the two species and retained the name *A. mollis* Benth. for the Himalayan plants and the other taxon, widely distributed from India to Phillipines, has been described by him as *A. crassa* Prain. Merrill (1918) has stated that *A. crassa* Prain is the same as *Cantharospermum volubilis* (Blanco) Merrill [= *A. volubilis* (Blanco) Gamble], but so far as the taxonomy is concerned most of the subsequent authors regarded the two entities as quite separate. However, Parker (1924) has not been able to maintain *A. mollis* Benth. and *A. crassa* Prain as distinct species and Stewart (1958) likewise does the same.

Having examined the material available at British and Pakistani Herbaria, I find that the two species are quite distinct, though all the characters enumerated by Prain (1897) are not useful. For instance the characters of the indumentum of leaflets, the length breadth ratio of the terminal leaflet, the angle of orientation of transverse constrictions of the fruit break down and the character of the seed can only be verified in a few

specimens. However, using the following characters the two taxa may be differentiated objectively.

Flowers $> 2$ cm. (2.3-2.7 cm.) long, pod <1 cm. (7-9 mm.) broad, 7-10 seeded	<i>A. mollis</i>
Flowers $< 2$ cm (1.5-2 cm.) long, pod c. 1-1.1 cm. broad, 3-6 seeded.	<i>A. volubilis</i>

Synonymy:

1. *Collaea mollis* Grah. in Wall. Cat. 5574.1828. (nom. nud.)

Representative Specimens:

Punjab: Hazara, Garhi Habibullah, Kashmir-Abottabad Road, flowers yellow, 12.9.1917, R.R. & I.D. Stewart 3702 (RAW); Kashmir: Poonch, Koth, 1954, A. Rashid 27003 (RAW).

Distribution: W. Pakistan, Punjab; Kashmir; India, N. Punjab, Kumaon, Garhwal, Nepal; Sikkim.

## 5. *Tephrosia* L.

*Tephrosia shanimii* Ali, species nova (Fig. 2 & 3)

Herba perennis, c. 45 cm alta, lignosa. Radix lignosa. Caulis ramosus; rami vetustiores cortice albido scabro vestiti; rami juveniles virides pilis albis ornati. Folia alterna, imparipinnata vel raro paripinnata; stipulae laterales, c. 3-5 mm longae. Rhachis c. 6-17 mm longa; petiolum c. 5-13 mm longum. Foliola 1-5, petiolulis  $< 1$  mm, pilosis instructa; lamina c. 6-21 mm longa, c. 2.5-5.0 mm lata, supra glabra, infra albi-pilosa, elliptica, margine integra, apice acuta. Inflorescentia racemosa. Flores caeruleo-albi; pedicellis c. 2.5-3.0 mm longis, albo-pilosis instructi. Calyx c. 5 mm longus, eiusdem dentibus duobus superioribus c. 2.5 mm longis, 3 inferioribus c. 3 mm longis. Vexillum c. 9-10 mm longum, c. 7 mm latum, supra pilosum; alae c. 8 mm longae, c. 4.5 mm latae, ungui c. 1.5-2 mm longo instructae. Carina c. 7.5 mm longa, ungui c. 2.5 mm longo instructa. Stamina diadelphea, 9+1, filamentis c. 7 mm longis. Ovarium c. 5-5.5 mm longum, pilosum; stylus c. 3 mm longus, in angulo recto curvatus; stigma penicillatum. Fructus non visus.

Holotype: About 20 miles from Sibi on way to Quetta, 8.9.1970, S.A. Faruqi & M. Qaiser 2247 (KUH).

Distribution: Presently known only from Type locality.

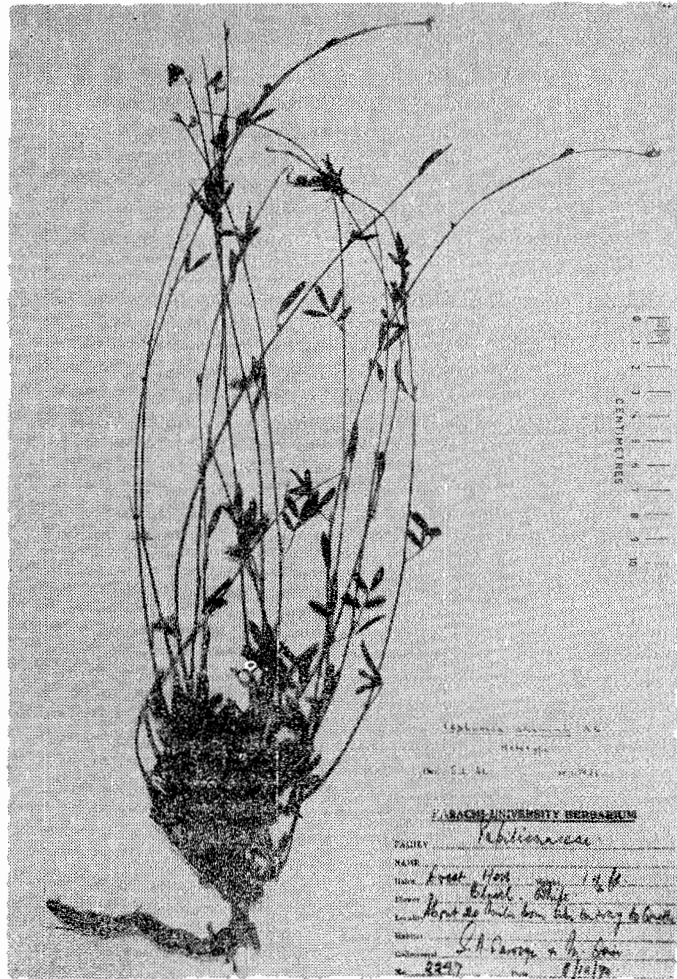


Fig. 2. Holotype of *Tephrosia Shamimii* Ali.

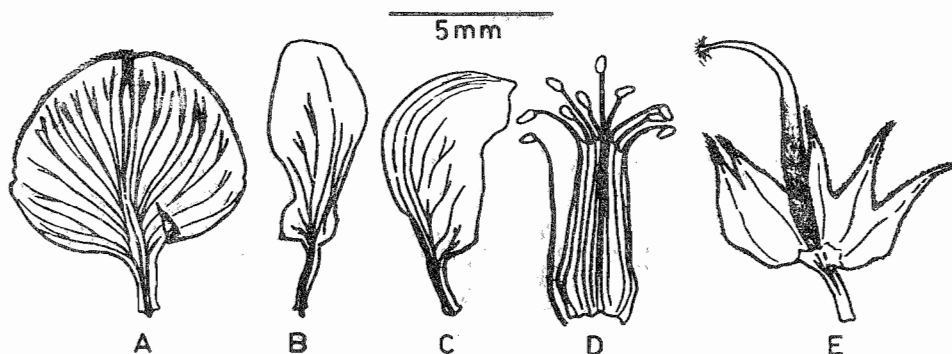


Fig. 3. *Tephrosia shamirii* Ali: A, vexillum; B, wing; C, keel; D, androecium; E, calyx with gynaeceum.

In view of its penicillate stigma, it seems to be related to *T. uniflora* Pers. and *T. rechingeri* Ali. However it differs from *T. uniflora* Pers. in having an elongated raceme and from *T. rechingeri* Ali in having straight (not curved) vexillum and wings.

*Tephrosia rechingeri* Ali, Species nova (Fig. 4 & 5)

Herba perennis. Caulis erectus, ramosus; rami juveniles pilis albis ornati. Folia alterna, imparipinnata; stipulae laterales, c. 2-3.5 mm longae; pilosae. Rhachis c. (7) -25-40 mm longa; petiolum c. 10-20 mm longum. Foliola 3-7, petiolulis <1 mm; lamina c. 13-45 mm longa, c. 1.5-3.5 mm lata, utrinque pilosa, margine integra, apice acuta. Inflorescentia racemosa; c. 15-35 cm longa. Pedicellis c. 4 mm longis, pilosis. Calyx c. 4-5 mm longus, dentibus subaequilibus c. 2-3 mm longis. Vexillum c. 7 mm longum, supra pilosum; alae 8-8.5 mm longae, ungui c. 2-2.5 mm longo instructae. Carina c. 5.5 mm longa, ungui 2.5 mm longo instructa. Stamina diadelphia, 9 + 1. Ovarium c. 4-4.5 mm longum, villosum; stylus c. 2.5-3.0 mm longus, glaber, in angulo recto curvatus; stigma penicillatum. Fructus non visus.

Holotype: W. Pakistan, Quetta: In parte inferiore faucium Torkhan supra Harnai, 30°5'N, 68°00'E, substr. calc. 900 m, 14-15.5.1965, K.H. Rechinger (KUH); Cotype (W).

Distribution: Presently known only from Type locality.

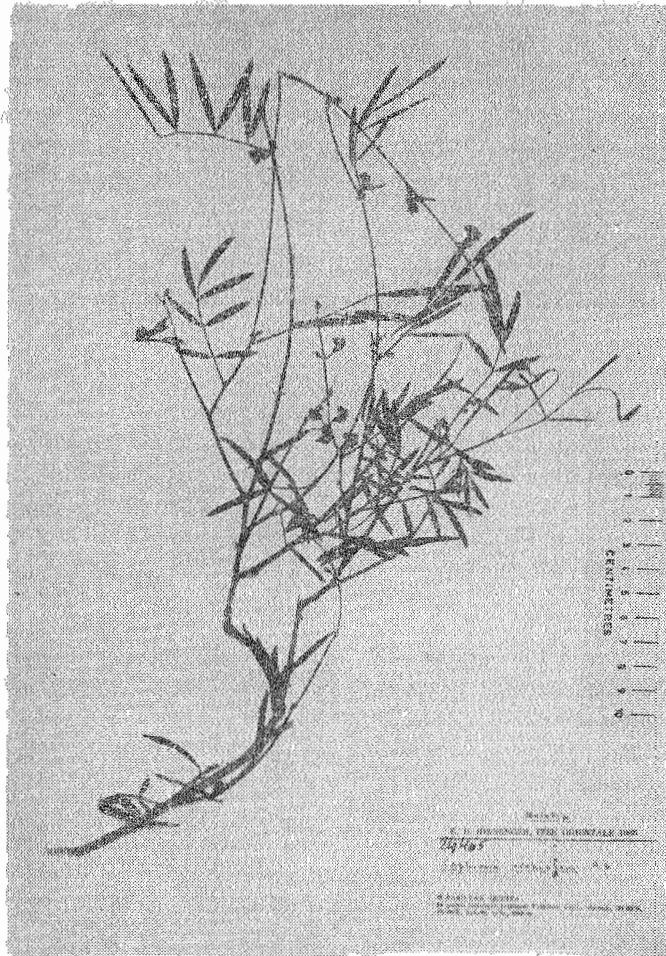


Fig. 4. Holotype of *Tephrosia rehingeri* Ali.



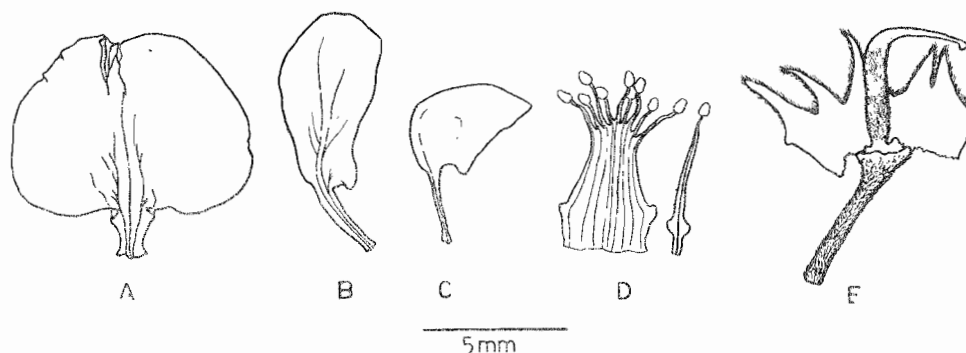


Fig. 5. *Tephrosia rechingeri* Ali: A, vexillum; B, wing; C, keel; D, androecium; E, calyx with gynaecium.

In having penicillate stigma this species is related to *T. uniflora* Pers. and *T. shanimiti* Ali. However it differs from both in having curved vexillum and wing. From *T. uniflora* Pers. it differs further in having an elongated inflorescence.

#### 6. *Onobrychis* Mill.

*Onobrychis laxiflora* Baker in J. Linn. Soc. (Bot.) 19: 159. 1882. (a) var. *laxiflora*

Holotype: Hariab District, on the artificially raised hillocks around the margins of field, 7500 ft., very common, 1880, J.E.T. Aitchison (K).

Representative Specimen: Kashmir, Astor Kamrinala, Shunkargarh, 9.7.1901, Inayat (K).

Distribution: Afghanistan; Kashmir.

b. var. *schugnanica* (B. Fedtsch.) Ali. stat. nov.

Type: Stony slopes between towns of Rivak and Vankala, 9000 ft., 22.7., Alekshenko (L— not seen).

#### Synonymy:

1. *Onobrychis schugnanica* B. Fedtschenko in Trav. Mus. Bot. Acad. Petersb 1: 129. 1902.
2. *O. laxiflora* f. *schugnanica* (B. Fedtsch.) Sirj. in Bull. Soc. Bot. Bulg. 4:17. 1931

Representative Specimens:

Chitral, Mastuj-Baroghil Track, Wasam, 9000 ft. on the stony ground, corolla pale yellow marked with pink, leaf grey green, 20.7.58, J.D.A. Stainton 2940 (BM).

Baluchistan: Quetta, 6.5.1956, W.A. Dick-Peddie 148 (RAW,K); Gustoi, 25.5.1957, Harsukh 20514 (K); Quetta, 14.5.1956, W.A. Dick-Peddie 109 (RAW).

Punjab: Gureckote, Hupora, 1852, Winterbottom (K)

Kashmir: Karakoram, 8000 ft., 5.8.1876, C.B. Clarke 30091 A (K) Shankargadh, Kamrinala, Astor, 9.7.1901, Inayat (K); Astor, 7.7.1901, Inayat (K). Ratter above Astor, c. 9000 ft., pink, 21.8.1939, R.R. Stewart 18820 (RAW) Ratter to Rupal, 19.7.1946, R.R. & I.D. Stewart 21813b (RAW).

Distribution: W. Pakistan, Baluchistan, Punjab, N.W.F. Province; Kashmir; Afghanistan, Central Asia, Pamir Alai (Grossheim, 1948).

Flowering Period: May.

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