

**PLANTS USED FOR MEDICINAL PURPOSES IN
KARAMAN PROVINCE (SOUTHERN TURKEY)**

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SUMMARY

An ethnobotanical study was carried out in Karaman province which is a very ancient settlement in Southern Turkey (Inner Taurus Mountains). During the field work, 518 plant specimens were collected by visiting 108 residential sites. This survey, revealed that 78 plant species belonging to 38 families were used for medicinal purposes by local people. In this paper, scientific names of these plant species, their local names, parts used, preparation methods, utilization, application methods and therapeutic usage have been tabulated.

ÖZET

Çok eski yerleşim alanı olan Karaman ili etnobotanik açıdan araştırılmıştır. Yörede yapılan arazi çalışmalarında 108 yerleşim alanı ziyaret edilmiş ve 518 bitki örneği toplanmıştır. Toplanan bitkilerin değerlendirilmesi sonucunda 38 familyaya ait 78 bitki taksonunun tıbbi kullanımlarının olduğu belirlenmiştir. Tıbbi amaçla kullanılan bitkilerin bilimsel adları ve kullanılışları ile ilgili bilgiler (bitkilerin yöresel adları, kullanılan kısımları, hazırlama yöntemleri ve kullanılışları) tablo halinde verilmiştir.

Keywords: Ethnobotany, folk medicine, Karaman, therapeutic usage, Turkey

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INTRODUCTION

Turkey is one of the most floristically rich countries in the world with astonishing plant diversity. Its flora consists of about 10000 vascular plants and approximately one third of those (34,4 %) is endemic. Along with its rich flora, it also has a wide diversity of habitats (1).

Turkey has a great history of folk medicine but there are ethnobotanical studies (2, 3, 4, 5, 6) and only one encyclopaedic book (7).

Our ethnobotanical study was carried out between 1998 and 1999 in order to determine which wild plants were being used for medicinal purposes in Karaman province (8).

MATERIAL AND METHODS

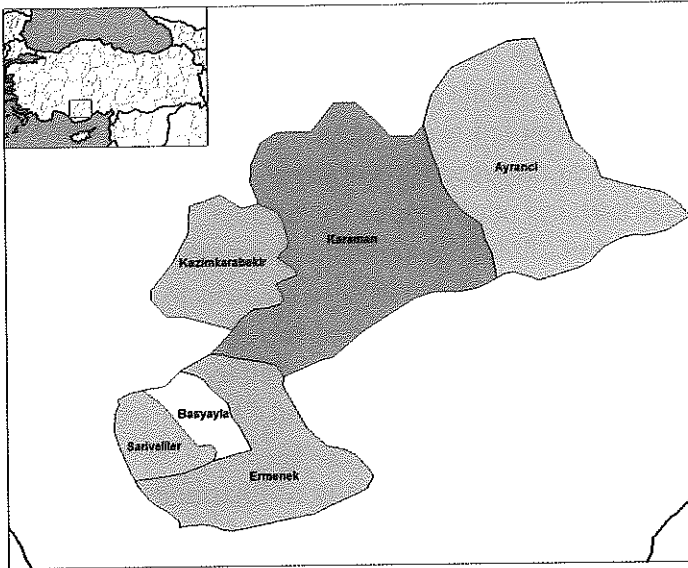
Research area

Karaman is a province of central Anatolia. It is surrounded by Konya borders on northern and north-western border, Mersin on the south-eastern and Antalya on the south-western. Southern and eastern parts of the province are covered by mountains and northern half of the province is steppe.

Karaman covers an area of 9590 km² and has a continental climate that is warm and dry in summer, while it is cold and rainy in autumn (9).

According to the 2000 census the population was 243.210. Population density is 27.54 people/km². Karaman province is divided into 6 districts; Ayra, Başyayla, Ermenek, Karaman, Kazımkarabekir, Sarıveliler (Map 1).

The vegetation of Karaman generally consists of coniferous forests, which are mainly represented by *Pinus brutia* Ten. and *Pinus nigra* J.F. Arnold subsp. *nigra* var. *caramanica* (Loudon) R. Businsk. The highland plains consist mainly of *Cedrus libani* A.Rich., *Abies cilicica* (Ant. & Kotschy) Carr. subsp. *isaurica* Coode & Cullen, *Juniperus excelsa* M.Bieb. and *J. foetidissima* Willd (9).



Map 1: The map of Karaman Province and its administrative districts.

Interviews with local people

Information on the utilization of plants was collected through face-to-face interviews with rural people in selected places. Interviews with the older people in the villages, with peasants and shepherds, as well as with medical practitioners was conducted at various places, such as tea houses (kahvehane), where villagers spend their leisure, elders homes and in the fields.

Info Questionnaire of Ethnobotany

Province/County, Village name.....
 Date.....
 Plant botanical name.....
 Plant vernacular name.....
 Purpose of collection.....
 Plant population rate in this location.....
 Collection time.....
 Plant parts used.....
 Utilization methods.....
 Collection and preparation methods.....
 Name/surname.....
 Age/ Sex.....
 Address and telephone.....

Plants material

During the field trips which lasted 32 days, 108 villages were visited. During these trips, 518 plants specimens were collected, information about these plants were recorded (local names of the plants, how to use them, which parts of them are used, preparation of drugs, their usage, dosage, application period) and photographs were taken.

For the collection of plant materials, informants were asked to bring the drug or herbal preparations they use, or to guide us to the places where these plants grew. The fresh or dried specimens were kept as samples for botanical identification. The plants were identified using the standart Floras, 'Flora of Turkey and the Aegean Islands' (10, 11) and Check-List of Additional Taxa to the Supplement Flora of Turkey (12, 13, 14). The collected specimens are kept in the Herbarium of the Faculty of Pharmacy, Istanbul University (ISTE) while some specimens which are not convenient for storage as herbarium material are kept in GILAM (Centre of Research of Traditional Plants in Istanbul University), in the drug collection.

RESULT AND DISCUSSION

During the ethnobotanical study 117 plant taxa were recorded used for medicinal purpose, food and others in the study area (8). A total of 75 wild plant species, belonging to 57 genera and 37 families were recorded as medicinal plant. The results of this survey presented in Table 1A comparison between this list with those published information from Karaman area (15, 16, 17, 18) revealed that 7 species have not been reported as herbal remedies for ailments mentioned.

It was revealed that medicinal usage of the following 5 species which are determined in this study are recorded for the first time in Turkey. They are *Anthemis cretica* subsp. *anatolica* (to pass kidney stone), *Glaucosciadium cordifolium* (as aphrodisiac), *Helichrysum plicatum* subsp. *isauricum* (to pass kidney stone), *Medicago rigidula* var. *rigidula* (against rheumatic pain) and *Thymus cilicicus* (as a tonic).

The most represented families are Labiatae, Compositae, Umbelliferae with 20, 5, 4 species respectively, followed by Rosaceae, Solanaceae and Urticaceae with 3 species and other families (37 taxa).

In our survey, the most frequently used plant parts were aerial parts, accounting for 33%, followed by fruits (15%), leaves (13%), roots (12%), whole plants (9%), latex (5%), flowers (4%), seeds (4%).

The infusion is the general preparation method of choice, accounting for 32,6% of the recorded species, followed by poultice (23,0%), decoction (20,1%), powder (5,7%), chewing (2,8%) and juice into nostrils (2,8%). Other preparation methods are latex into mouth and nostrils, crushed and boiled, crushed with honey, boiling, as cigarette, as cooked, chewing with honey.

Mode of application was reported based on the 102 formulations recorded. Internal applications are the most common way and utilized in 66,6% of the formulations. Internal applications mode is usually as oral administrations. External applications utilized in 24,5% of the formulations.

Drop of latex of *Convolvulus arvensis*, *Convolvulus scammonia* are dripped into mouth for laxative purpose. Fruits juice of *Ecballium elaterium* applied as nasal drops for icterus, sinusitis and asthma. Latex of *Euphorbia kotschyana* and *E. macroclada* applied on warts for healing. Aerial parts of *Hypericum scabrum* were used as cigarettes for hemorrhoids. Latex of *Ficus carica* subsp. *carica* used against scorpion bite.

Local people used wild plants as medicinal purpose most frequently for the treatment of asthma (14 taxa) 18.4%, inflamed wounds and stomachache (12 taxa) 15.7%, hemorrhoid and kidney stones (11 taxa) 14.4%, rheumatic pain (10 taxa) 13.1%, as a carminative (8 taxa) 10.5 % and to treat hypoglycemia (7 taxa) 9.2%.

It is recorded that 8 species in Karaman province must be used carefully as medicinal treatment by local people for their poisonous effect. They are *Arum dioscoridis* Sm. var. *dioscoridis*, *Ceratocephalus falcatus* (L.) Pers. *Convolvulus scammonia* L., *Ecballium elaterium* (L.) A.Rich., *Hyosyamus niger* L., *Hyosyamus reticulatus* L., *Juglans regia* L. and *Teucrium polium* L.

Family, botanical name, voucher number, vernacular name, parts used, preparations and application method and uses of medicinal plants are given in Table 1. Plants are arranged in alphabetical order by family, genus and species.

Table 1. Plants used as remedies in Karaman Province (South Turkey)

Family, Botanical name (Voucher number)	Vernacular name	Parts Used	Utilizations/ applications	Uses
ADIANTACEAE				
<i>Adiantum capillus - veneris</i> L. (ISTE 76057)	Altıparmakotu	AP	Inf (int)	Kidney stones
ANACARDIACEAE				
<i>Pistacia terebinthus</i> L. subsp. <i>palaestina</i> (Boiss.) Engler (ISTE 76390)	Melengiç Menengiç	FR	Powdered (ext)	Appetizer
<i>Rhus coriaria</i> L. (ISTE 75938)	Sumak	FR LF FR LF	Dec (int) Powdered (int) Dec (int) Poultice (ext)	Diarrhoea Gastric ulcer Asthma to give relief Wounds
ARACEAE				
<i>Arum dioscoridis</i> Sm. var. <i>dioscoridis</i> (GIM 525)		RT FR	Poultice (ext) Directly (int)	Inflamed wounds Hemorrhoids
ARISTOLOCHIACEAE				
<i>Aristolochia maurorum</i> L. (ISTE 76418)	Arapdaşsağı Kargakavuşu	RT	Inf (int)	Hemorrhoids
BERBERIDACEAE				
<i>Berberis crataegina</i> DC. (ISTE 75780)	Karamık	FR RT, FL RT	Inf (int) Inf (int) Inf (int)	Against diarrhoea Hypoglycemic Icterus, Hemorrhoids
CAPPARACEAE				
<i>Capparis spinosa</i> L. var. <i>spinosa</i> (ISTE 76038)	Gevil Kapari Kebere	LF	Poultice (ext)	Rheumatic pain
CARYOPHYLLACEAE				
<i>Telephium imperati</i> L. subsp. <i>orientale</i> (Boiss.) Nyman (ISTE 76041)	Kırkbaş göğündürme	AP	Poultice (ext)	Promote maturation of abscesses

COMPOSITAE				
<i>Artemisia absinthium</i> L. (ISTE 76396)	Sancı otu	LF	Dec (int)	Stomachache
<i>Anthemis cretica</i> L. subsp. <i>anatolica</i> (Boiss.) Grierson (ISTE 75763)	Babaçça Babaçya	AP	Dec (int)	Kidney stones
<i>Helichrysum plicatum</i> DC. subsp. <i>isauricum</i> Parolly (ISTE 76590)	Çoban çiçeği	AP	Dec (int)	Kidney stones
<i>Helichrysum plicatum</i> DC. subsp. <i>plicatum</i> (ISTE 76615)	Çoban çiçeği Koyuncuk gülü Koyun çiçeği	AP	Dec (int)	Icterus Stomachic
<i>Pulicaria dysenterica</i> (L.) Bernh. (ISTE 76028)	Yara otu	FL, LF	Poultice (ext)	Promote maturation of abscesses
CONVOLVULACEAE				
<i>Convolvulus arvensis</i> L. (ISTE 75936)	Manıza	RT	Latex (gt) into mouth	Laxative
<i>Convolvulus scammonia</i> L. (ISTE 76090)	Mamızıye Mamıza Mahmıza	RT	Latex (gt) into mouth	Laxative
CUCURBITACEAE				
<i>Ecballium elaterium</i> (L.) A.Rich. (ISTE 75998)	Acıkavun Cırtatan Patlangaç	FR	Juice (gt)	Icterus, Sinusitis, Asthma
CUPRESSACEAE				
<i>Juniperus drupacea</i> Lab. (GIM 526)	Andız	FR FR SB TR FR	Crushed, boiled (int) Crushed, honey (int) Boiling (int) Inf (int) Inf (int)	Stomachic, Hypoglycemic Rheumatic pain Diarrhoea Stomachache Asthma, Cardiac disorders
CUSCUTACEAE				
<i>Cuscuta europea</i> L. (ISTE 76568)	Isırgan çayı	WP	Dec (int)	Stomachache Carminative

EQUISETACEAE				
<i>Equisetum ramosissimum</i> Desf. (ISTE 76608)	Ulama otu	AP	Inf (int)	Kidney stones
<i>Equisetum telmateia</i> Ehrh. (ISTE 76031)	Ulama otu Sufu ulama	AP	Inf (int)	Kidney stones Stomachache
EUPHORBIACEAE				
<i>Euphorbia kotschyana</i> Fenzl (ISTE 76612)	Sütleğen Sütlüce	LX LX	Gt (ext) Gt (int)	Cuts, Animal bites Anthelmintic (worms)
<i>Euphorbia macroclada</i> Boiss. (ISTE 76634)	Sütleğen	LX	Gt (ext)	Warts
GRAMINAE				
<i>Cynodon dactylon</i> (L.) Pers. var. <i>villosus</i> Regel (ISTE 76627)	Ayrık otu	WP	Inf (int)	Urinary inflammation
HYPERICACEAE				
<i>Hypericum perforatum</i> L. (ISTE 76629)	Kantaron	AP	Dec (int)	Gastric ulcer Stomachache Asthma to give relief
<i>Hypericum scabrum</i> L. (ISTE 76419)	Mayasıl otu	AP	Inf (int) Poultice (ext) Cigarette	Hemorrhoids
JUGLANDACEAE				
* <i>Juglans regia</i> L. (ISTE 76365)	Ceviz	LF FR	Poultice Fresh eaten	Fungus Hemorrhoids
LABIATAE				
<i>Cyclotrichium origanifolium</i> (Labill.) Manden et Scheng. (ISTE 76088)	Dağ çayı Kokar ot	AP	Inf (int)	Tonic
<i>Marrubium vulgare</i> L. (ISTE 76009)	El otu El kurtaran	AP	Inf (int)	Woman sterility
<i>Mentha longifolia</i> (L.) Hudson subsp. <i>typhoides</i> (Briq.) Harley var. <i>typhoides</i> (ISTE 75985)	Yarpız	LF	Powdered (int)	Stomachache
<i>Mentha spicata</i> L. subsp. <i>spicata</i> (ISTE 75997)	Yarpuz Nane	LF	Powdered (int)	Stomachache

<i>Micromeria myrtifolia</i> Boiss. et Hohen. (ISTE 76061)	Dağ çayı Kokar ot	AP	Powdered (int)	Stomachache
<i>Origanum majorana</i> L. (ISTE 76580)	Guy otu	AP	Powdered (int)	Stomachache
<i>Salvia aucheri</i> Benth var. <i>canescens</i> Boiss. et Heldr. (ISTE 76024)	Dağ çayı	LF	Inf (int)	Tonic
<i>Satureja cuneifolia</i> Ten. (ISTE 76017)	Boncuklu çay Dağm kekiği Kekik	AP	Inf (int)	Stomachache
<i>Sideritis arguta</i> Boiss. et Heldr. (ISTE 76020)	Dağ çayı	AP	Inf (int)	Stomachache
<i>Sideritis bilgerana</i> P.H.Davis (ISTE 76040)	Dağ çayı	AP	Inf (int)	Stomachache
<i>Sideritis condensata</i> Boiss. et Heldr (ISTE 76018)	Dağ çayı	AP	Inf (int)	Stomachache
<i>Sideritis congesta</i> P.H.Davis et Hub. Mor. (ISTE 76051)	Dağ çayı	AP	Inf (int)	Stomachache
<i>Sideritis hispida</i> P.H.Davis (ISTE 76039)	Dağ çayı	AP	Inf (int)	Stomachache
<i>Sideritis libanotica</i> Labill. subsp. <i>linearis</i> (Benth) Bornm. (ISTE 75984)	Dağ çayı	AP	Inf (int)	Stomachache
<i>Sideritis libanotica</i> Labill. subsp. <i>violascens</i> (P.H.Davis) P.H.Davis (ISTE 76625)	Dağ çayı	AP	Inf (int)	Stomachache
<i>Stachys lavandulifolia</i> Vahl var. <i>lavandulifolia</i> (ISTE 96050)	Tilki kuyruğu	AP	Inf (int)	Tonic
<i>Teucrium chamaedrys</i> L. subsp. <i>chamaedrys</i> (ISTE 76066)	Kinin otu	AP	Inf (int)	Stomachache Malaria
<i>Teucrium polium</i> L. (ISTE 76089)	Anam babam kokusu, Koyun otu Oğul out, Yavşan	AP	Inf (int)	Stomachache, Hypoglycemic, Malaria, Hemorrhoids, Carminative, Cardiac disorders

<i>Thymbra spicata</i> L. var. <i>spicata</i> (ISTE 76019)	Kekik	AP	Inf (int)	Stomachache
<i>Thymus cilicicus</i> Boiss. et Bal. (ISTE 76012)	Kekik	AP	Dec (int)	Stomachache
LEGUMINOSAE				
<i>Medicago rigidula</i> (L.) All. var. <i>rigidula</i> (ISTE 76412)	Çakırdikeni	AP	Dec (int) Poultice (ext)	Rheumatic pain
LORANTHACEAE				
<i>Viscum album</i> L. (ISTE 75778)	Gebelek, Göbelek Gögelek, Gövelek	WP	Inf (int) Dec (int)	Rheumatic pain Hypoglycemic
MALVACEAE				
<i>Malva neglecta</i> Wallr. (ISTE 76008)	Ebegümeçi Ebeekmeği Develik Yastıman	WP WP WP WP RT	Dec (int) Poultice (ext) Dec (int) Poultice (ext) Chew	Rheumatic pain Rheumatic pain Asthma to give relief Inflamed wounds Stomachache
<i>Malva sylvestris</i> L. (ISTE 76045)	Ebegümeçi Gömeç	WP WP WP WP RT	Dec (int) Poultice (ext) Dec (int) Poultice (ext) Chew	Rheumatic pain Rheumatic pain Asthma to give relief Inflamed wounds Stomachache
MORACEAE				
* <i>Ficus carica</i> L. subsp. <i>carica</i> (ISTE 76604)	İncir	LX	Gt (ext)	Scorpion bites
* <i>Morus nigra</i> L. (ISTE 75994)	Karadut	LF	Inf (int)	Herpes infection in mouth

PAPAVERACEAE				
<i>Glaucium corniculatum</i> (L.) Rud. subsp. <i>corniculatum</i> (ISTE 75771)	Al-gögündürme Gögündürmelalesi Güllügögündürme	LF FL	Poultice (ext)	Inflamed eyes
<i>Glaucium leiocarpum</i> Boiss. (ISTE 75803)	Güllü- gögündürme	FL	Poultice (ext)	Inflamed eyes
PLANTAGINACEAE				
<i>Plantago lanceolata</i> L. (ISTE 76389)	Kırkdamar otu	LF	Poultice (ext)	Promote maturation of abscesses
<i>Plantago major</i> L. subsp. <i>major</i> (ISTE 76030)	Sinirli ot	LF	Poultice (ext)	Promote maturation of abscesses
PLUMBAGINACEAE				
<i>Plumbago europea</i> L. (ISTE 76610)	Artağa, Boyaotu, Karakma, Sergüle, Sirkele, Zeykele	WP	Poultice (ext)	Wounds
POLYGONACEAE				
<i>Rumex crispus</i> L. (ISTE 75777)	İlabada Labada	LF	Poultice (ext)	Astringent
PRIMULACEAE				
<i>Cyclamen cilicicum</i> Boiss. et Heldr. var. <i>cilicicum</i> (ISTE 75782)	Ayıpancı Devetabanı	BU	Poultice (ext)	Inflamed wounds
RANUNCULACEAE				
<i>Ceratocephalus falcatus</i> (L.) Pers. (ISTE 75774)	Düğün otu Yel otu	AP	Poultice (ext)	Promote maturation of abscesses
RESEDACEAE				
<i>Reseda lutea</i> L. var. <i>lutea</i> (ISTE 75841)	Eşek- gerdebeni Gerdeme	RT	Chew	Diarrhoea
RHAMNACEAE				
<i>Paliurus spina-christi</i> Miller (ISTE 76026)	Çaltıçalı	SD	Inf (int)	Stomachache
ROSACEAE				
* <i>Cydonia oblonga</i> Miller (ISTE 76368)	Ayva	LF	Dec (int)	Cough

<i>Rosa canina</i> L. (ISTE 75986)	İtburnu İtgülü Kuşburnu	FR	Poultice (ext) Inf (int)	Promote maturation of abscesses Hypoglycemic Intestinal disorders Kidney stones
<i>Sanguisorba minor</i> Scop. subsp. <i>muricata</i> (Spach) Briq. (ISTE 76392)	Bostangüzeli Karagöğündürme Morgöğündürme	AP	Poultice (ext)	Promote maturation of abscesses
RUBIACEAE				
<i>Galium aparine</i> L. (ISTE 75759)	Yapışkan otu	WP	Inf (int)	Rheumatic pain
SALICACEAE				
<i>Salix alba</i> L. (ISTE 76427)	Söğüt	LF	Poultice (ext)	Rheumatic pain
SOLANACEAE				
<i>Hyosyamus niger</i> L. (ISTE 75901)	Kurt otu	SD	Fumes into eyes	Eye disease
<i>Hyosyamus reticulatus</i> L. (ISTE 75840)	Kurt otu Göz otu	SD	Fumes into eyes	Eye disease
<i>Solanum nigrum</i> L. subsp. <i>nigrum</i> (ISTE 76047)	Kara göyündürme Karagöğündürme	WP	Poultice (ext) Inf (int)	To promote maturation of abscesses Gastric ulcers
UMBELLIFERAE				
<i>Eryngium campestre</i> L. var. <i>virens</i> Link. (ISTE 76640)	Boğa dikenli Tavuk götü ürtmeği	ST RT	Eaten Inf (int)	Hemorrhoids
<i>Ferulago trachycarpa</i> Boiss. (ISTE 76591)	İlkı çağşırı Çağşır	RT	Chew with honey	Aphrodisiac
<i>Foeniculum vulgare</i> Miller (ISTE 76049)	Mayana, Rezene, İrezdene, Ezertene	FR	Fruiting plant	Carminative
<i>Glaucosciadium cordifolium</i> (Boiss.) Burt et Davis (ISTE 76027)	Çağşır otu	RT	Chew with honey	Aphrodisiac

URTICACEAE				
<i>Parietaria judaica</i> L. (ISTE 75765)	Kutnu otu	AP	Dec (int)	Rash
<i>Urtica dioica</i> L. (ISTE 75764)	Isirgan, Isirga Istirkan, Istirgan	AP	Dec (int)	Gastric ulcers, Kidney stones, Piles
<i>Urtica urens</i> L. (ISTE 75781)	Isirgan	AP	Dec (int)	Gastric ulcers, Kidney stones, Piles
VERBENACEAE				
<i>Vitex agnus-castus</i> L. (ISTE 76000)	Hayıt	SD	Inf (int)	Hypoglycemic Cough
ZYGOPHYLLACEAE				
<i>Tribulus terrestris</i> L. (ISTE 76001)	Demirbitrak, Çobançökerten Pıtrak otu, Bitrak	WP	Dec (int)	Kidney stones

Parts used: AP, aerial parts; BU, bulbs; FL, flowers; FR, fruits; LF, leaves; LX, latex; RT, roots; SB, stem bark; SD, seeds; ST, stems; TR, tar; WP, whole plant;

Application: dec, decoction; ext, externally; gt, drops; inf, infusion; int, internally.

GIM no: Centre of Research of Traditional Plants in Istanbul
University

ISTE no: Herbarium of the Faculty of Pharmacy, Istanbul University

*: Cultivated plant

Acknowledgements

This study was supported by the "Secretary of Research Fund of Istanbul University, Project no. T-543/240698 and Major of Karaman province. We would like to thank all villagers who have collaborated with us and who have shared us their knowledge. Thanks are expressed to Msc. Serpil Demirci and Msc. Bahar Gürdal who have generously helped to N. Özhatay for preparing the manuscript.

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