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Biodiversity of ethno medicinal plants used by traditional healers in selected remote villages of Panna district (Madhya Pradesh), India

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This paper presents the results of a study on ethno medicinal plants used by local traditional healers of selected remote villages, namely Ranipura, Aaramganj & Vishramganj of Panna District of Madhya Pradesh. The methods followed were based on questionnaire for documentation of indigenous knowledge. Regular interviews were conducted in local communities, to investigate local people and knowledgeable persons, who are the main user of medicinal plants. This investigation revealed that, the traditional healers used 43 plant species belonging to 35 genera of 22 families were recorded during field trips from selected villages. Among all the plant species, tree vegetation found to be most dominant followed by shrubs, herbs and climbers. In this study most dominant family was Fabaceae and leaves were the most frequently used plant part for treatment of ailment and diseases. The check list and ethno medicinal inventory was developed.

Keyword: Biodiversity, Ethnomedicinal plants, Panna district, Traditional healers.

1. Introduction

Panna district is the important stick of Bundelkhand of Madhya Pradesh (MP). The area which has rich cover of the forest and important river tributaries suffering from drought causes reduction in the floral wealth of the region. Panna is located in the north eastern part of MP. It forms the Northern district of Sagar commissioner's division. Panna district lies between 23° 45' and 25° 10' North latitudes and 79° 45' and 80° 40' East longitudes. The shape of the district is roughly triangular, tapering to the North but the nearest portion falling at the latitude of Panna town. The district is bounded by Banda district of Uttar Pradesh in the North, Satna in the East, Jabalpur in the South, and Damoh and Chhatarpur districts in the West. It has an area of 7,135 km². The whole district lies on the Vindhya

plateau with an average height of 350 meters. Among the prominent features are the Kymore range and the Panna range which traverse across the southern part and the north-eastern part, respectively [1].

On the other hand, biodiversity is a part of our daily lives and livelihood. Every country has the responsibility to conserve, restore and sustainably use the biological diversity within its jurisdiction [2]. The importance of biodiversity can be understood, it is not easy to define the value of biodiversity, and very often difficult to estimate it [3]. In India, many rural communities particularly the tribal's obtain considerable part of their daily food from the wild plants. Some examples are: *Ceropegia bulbosa* in Central India and Western Ghats; *Codonopsis ovata* in Himalayan region; *Ardisia sp.* and *Meliosma pinnata* in the North-

East; *Eremurus himalaicus*, *Origanum vulgare* and *Urtica hyperborea* in Lahaul-Spiti and Ladakh; *Allium carolinianum* and *Cicer microphyllum* in Kashmir and *Sesuvium portulacastrum* in Coastal areas.

The practice of using herbal treatment for diseases dates back to the very earliest of known human history. Due to contrast intimacy with vegetation cover, primitive communities have gained profound knowledge about the utilities of medicinal plants. They have full confidence in them and their time tested medicines [4]. Out of the total 4, 22,000 flowering plants reported from the world [5] more than 50,000 are used for medicinal purposes [6].

In India, almost 95% of the prescriptions are plant-based in the traditional systems. Medicinal plants which play vital roles in human health care are pharmaceutically important, and form an important sector of industry having a potential trade value of over Rs. 3,500 crores. Due to growing recognition of natural products, non-toxicity and easy availability, its demand is increasing and thereby, its cultivation has also been increased [7]. People living in tribal localities and in villages are using indigenous plants as medicines from long ago because this knowledge reaches to them through generation to generation, and is based on experience [8]. Also the tribes and villages are far away from cities and mostly there are no health facilities. Inhabitants are dominantly poor or middle class and the prices of synthetic drugs are rising day by day and they cannot withstand the sharply rising prices of synthetic drugs, so as a consequence, non-availability of expensive synthetic drugs [9].

Keeping in view the importance of flora of Panna district, the study confined to collect the indigenous knowledge of local people about the medicinal uses of native plants. As the people of the selected areas have empirical observation of the nature and by communicating the other people of their culture; they get indigenous knowledge of local plants. So in this way the ethno-medicinal knowledge of plants is linked to the local culture and history. As inhabitants of the

area are mainly using traditional means to cure diseases and this asset of indigenous knowledge is transferring from generation to generation only through verbal means of communication [10]. So this research was an effort to document and to preserve this folk asset.

The main aims of present research work were: to explore the ethno-medicinal knowledge of local people of selected remote villages of Panna district; to enlist the indigenous medicinal plants used by local people for common day ailments; to create awareness among the local community about the protection of native medicinal flora; and to collect native medicinal plants of the area for proper identification and future references.

2. Material and methods

Present study was confined to the identification of ethno medicinal plants used by traditional healers of selected remote villages of Panna district. The study was conducted during February, 2012 to January, 2013 in three remote villages i.e. Ranipura, Vishramganj and Aaramganj of the area.

Frequent field trips were arranged in order to collect information about the folk/culinary knowledge of medicinal plants used by the local people to cure them from various diseases. In total of three remote villages i.e. Ranipura, Vishramganj and Aaramganj of the area were extensively surveyed for research work.

During field trips, the questionnaire (Medicinal Plants Datasheet) was used to interview the local inhabitants, older people including men and women both, who were familiar with traditional uses of indigenous plants. In total of 50 informants including 37 men and 13 women were interviewed during survey. Interviews were conducted with local peoples in different villages individually. Repeated queries were made to get the data confirmed.

Frequent field trips of the area were arranged to collect the live specimens. Throughout the field trips, a general collection of plants were made. The fully dried specimens were mounted on herbarium sheets. Plants were identified with the

help of available literature [11, 12, 13, 14] and comparing with the already identified plant specimens of the herbarium at Department of Botany, Dr. H.S. Gour University, Sagar (M.P.). After correct identification, the plants were deposited in herbarium at Department of Botany, Dr. H.S. Gour University, Sagar for future references. Ethno-medicinal inventory was developed consisting of botanical name followed by their local name, family, part used and ethno-medicinal uses.

3. Results & Discussion

The ethno medicinal data on 43 plant species belonging to 35 genera of 22 families, during summer, rainy and winter season were collected. Information regarding their botanical name, local name, family, part used and their ethno medicinal uses are listed in Table 1.

Table 1: Ethnomedicinal plant used by traditional healers from three remote villages of Panna district of Madhya Pradesh.

S No	Family	Botanical name	Local name	Habit	Parts used	Ethno-medicinal uses
Monocots						
1	Liliaceae	<i>Aloe barbadensis</i> Mill.	Ghee kunvar	Herb	Whole plant	Boils, piles and fever
2	Poaceae	<i>Cymbopogon martinii</i> (Jones) Schult	Palmarosa	Herb	Whole plant	Fever and phlegmatic pains
		<i>Cynodon dactylon</i> (L.) Pers	Dub ghas	Herb	Roots	Diuretic and laxative
Dicots						
1	Amaranthaceae	<i>Achyranthes aspera</i> (Mill.) Linn.	Addhajhara	Herb	Whole plant	Diuretic, dropsy, piles, skin eruptions
		<i>Amaranthus viridis</i> L.	Chaulai	Herb	Leaves	Emollient, snake and scorpion bite
2	Arecaceae	<i>Phoenix sylvestris</i> (L.) Roxb.	Khajoor	Tree	Fruit, root, juice of tree	Toothache, tonic, cooling and laxative
3	Asclepiadaceae	<i>Calotropis procera</i> (Wild) R.Br.	Madar	Shrub	Whole plant	Malaria and cholera
4	Celastraceae	<i>Elaeodendron glaucum</i> Roxb.	Jamrasi	Tree	Root	Snake bite
5	Chenopodiaceae	<i>Chenopodium album</i> L.	Bathua	Herb	Whole plant	Laxative and anthelmintic
		<i>Spinacea oleracea</i> L.	Palak	Herb	Leaves, stem	Anemia, bone's tonic and produce fresh blood
6	Combretaceae	<i>Terminalia arjuna</i> W. & A. Prod.	Arjun	Tree	Leaves, bark	Cardiac tonic, earache.
		<i>Terminalia bellerica</i> (Gaertn.) Roxb.	Bahera	Tree	Bark, fruits	Anaemia and leucoderma curing cough, bronchitis, insomnia, dropsy, dyspepsia, flatulence, vomiting, skin diseases, leprosy
		<i>Terminalia tomentosa</i> W. & A. Prod.	Saaj	Tree	Bark	Diarrhoea
7	Cucurbitaceae	<i>Cucumis melo</i> var <i>agrestis</i> Naudin	Kharbooja	Climber	Fruit	Digestive and stomach problems
8	Cyperaceae	<i>Cyperus rotundus</i> (L.)	Dellia ghas	Herb	Tuber	Anthelmintic, stimulant, diuretic
9	Euphorbiaceae	<i>Ricinus communis</i> Linn.	Arandi	Shrub	Seeds, leaves, bark	Boils, swelling, laxative and to start labour pain
10	Fabaceae	<i>Acacia arabica</i> (Lam.) Willd	Babool	Tree	Leaves, fruits	Cough, dysentery
		<i>Acacia catechu</i> (L.) Willd. Oliv.	Khair	Tree	Wood	Diarrhoea, eruptions of the skin, leprosy, leucoderma and wounds, anaemia, diabetes, inflammations and intermittent fever
		<i>Acacia leucophloea</i> Willd.	Reonja	Tree	Barks, gum, leaves	An anthelmintic an antipyretic an antidote for snake bites, bronchitis, cough, vomiting, wounds, ulcers, diarrhea, dysentery, internal and

						external hemorrhages, dental caries, stomatitis, and intermittent fevers and skin diseases
		<i>Albizia procera</i> Benth.	Safed siris	Tree	All parts of the plant	Problems of pregnancy, stomach-ache, ulcers
		<i>Butea monosperma</i> Lamk.	Palas	Tree	Seeds, gum	Worm infestation and in the treatment of ringworm, boils and pimples
		<i>Cassia augustifolia</i> L.	Sena	Shrub	Leaves, branches, fruit	Headache, brain tonic and intestinal diseases
		<i>Dalbergia latifolia</i> Roxb.	Dhobin	Tree	Leaves, roots, wood	Dyspepsia, diarrhoea, leprosy, obesity and worms
		<i>Dalbergia sissoo</i> Roxb.	Shisam	Tree	Leaves, Roots, wood	Leprosy, boils, eruptions and stop vomiting
		<i>Tephrosia purpurea</i> L.	-	Herb	Whole plant	Skin treatment, anthelmintic, anti-pyretic
12	Flacourtiaceae	<i>Flacourtia indica</i> (Burm. f.) Merr.	Katai	Shrub	Fruits, barks, roots, gum	Appetizing and digestive, diuretic, in jaundice intermittent fever cholera, nephritic colic
		<i>Flacourtia ramontchi</i> L'Herit.	Kaker	Shrub	Whole plant	Appetizing, diuretic, digestive, in jaundice, intermittent fever nephritic colic cholera
13	Lamiaceae	<i>Ocimum sanctum</i> L.	Tulsi	Shrub	Seeds	Stomach and vomiting
14	Malvaceae	<i>Abutilon indicum</i> (Linn.) Sweet	Kanghee	Herb	Leaves, stem	To treat boils
15	Meliaceae	<i>Azadirachta indica</i> A. Juss.	Neem	Tree	Leaves	Skin diseases and blood purification
		<i>Melia azedarachta</i> L.	Bakain	Tree	Seed, leaves	Diabetes, blood purification and skin tonic
16	Moraceae	<i>Ficus racemosa</i> L.	Umar	Tree	Root, bark, fruits	Leucorrhoea, blood disorders, burning sensation, fatigue, urinary discharges, leprosy, menorrhagia, epistaxis, intestinal worms, asthma and piles
		<i>Ficus religiosa</i> L.	Pipal	Tree	Seeds, fruits	Laxative, cooling and alterative
17	Myrtaceae	<i>Eucalyptus globulus</i> Sm.	Safeda	Tree	Seeds, leaves	Malaria, antibacterial and antiseptic
18	Rhamnaceae	<i>Zizyphus jujuba</i> Lamk.	Ber	Shrub	Leaves, dried fruits	Blood sugar, diarrhoea
		<i>Zizyphus nummularia</i> (Burm.f.) Wight	Jangli beri	Shrub	Fruit, leaves, roots	Jaundice
20	Rubiaceae	<i>Anthocephalus cadamba</i> (Roxb.) Miq.	Kadamba	Tree	Bark, leaves	Inflammation, urinary retention, fever, cough, diarrhea, menorrhagia, burning sensation, wounds, ulcer and general debility
		<i>Gardenia latifolia</i> Ait. Hort. Kew.	Papara	Tree	Leaves, Roots, gum	Antispasmodic, anthelmintic splenomegaly, foul ulcers, wounds and obesity
		<i>Mitragyna parvifolia</i> Korth.	Kaim	Tree	Root, bark, leaves	Internal or external hemorrhages, muscle pain, skin diseases, fever, inflammations, infections
21	Solanaceae	<i>Datura innoxia</i> (Linn.) Miller	Datura	Shrub	Leaves, seeds	Hydrophobia and earache
		<i>Solanum nigrum</i> Miller.	Makoy	Shrub	Whole plant	Phthisis, dropsy, for enlargement of spleen

		<i>Withania somnifera</i> (L.) Dunal.	Aswagandha	Shrub	Whole plant	Leucoderma, diuretic and analgesic
22	Ulmaceae	<i>Holoptelea integrifolia</i> Planch.	Chirol	Tree	Bark, Seed , leaves	Oedema, diabetes, leprosy and other skin diseases, intestinal disorders, piles and spruce

The traditional healers were using these plants to treat the various ailment and diseases like boils, pain, coolness, cough & cold, diarrhoea, dysentery, earache, fever, malaria, headache, piles, phlegmatic pain, diuretic, laxative, dropsy, skin diseases, emollient, snake and scorpion bite, toothache, tonic, cholera, anthelmintic, anemia, leucoderma, bronchitis, insomnia, dyspepsia, vomiting, leprosy, digestive and stomach problems, wounds, diabetes, inflammations, antipyretic, ulcers, hemorrhages, problems of pregnancy, ringworm, obesity, worms, jaundice, asthma, blood sugar, hydrophobia etc.

Tree (21 species) was found to be the most used plants followed by shrub (11 species), herb (10 species) and climber (01 species) in descending order. The highest numbers of ethno medicinal plants were recorded in family Fabaceae (9 species). Three families namely Combretaceae, Rubiaceae and Solanaceae were contributing three species, seven families namely Amaranthaceae, Chenopodiaceae, Flacourtiaceae, Meliaceae, Moraceae, Poaceae and Rhamnaceae each have two species. However, rest of the reported families contributes only one species each (Figure 3).

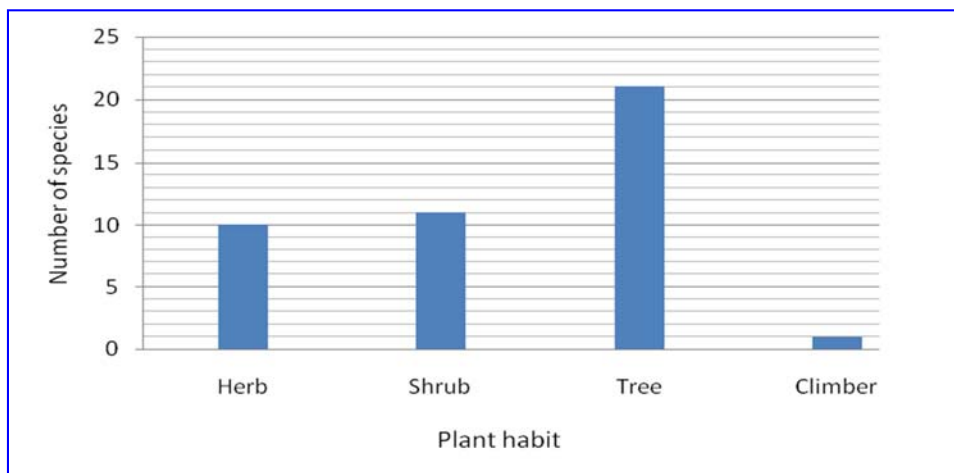


Fig 1: Number of plant species belonging to different habits.

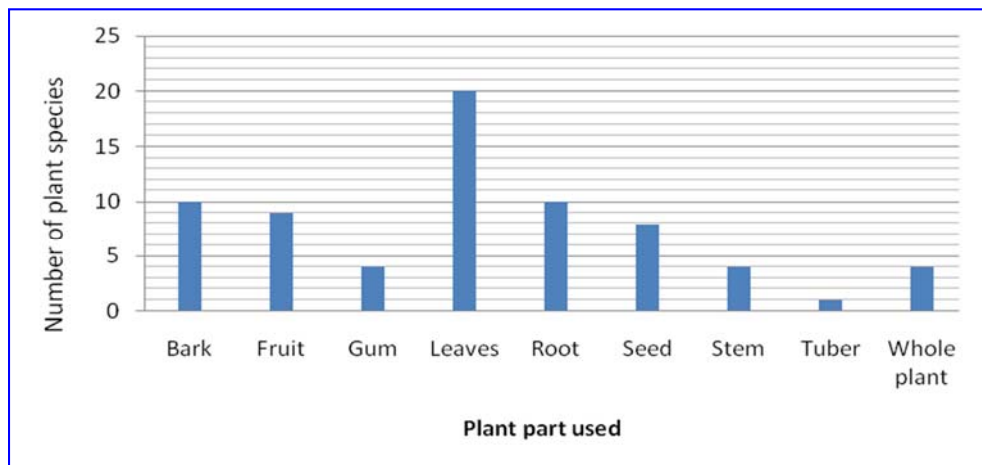


Fig 2: Ethnomedicinal plant based on number of species as plant part used.

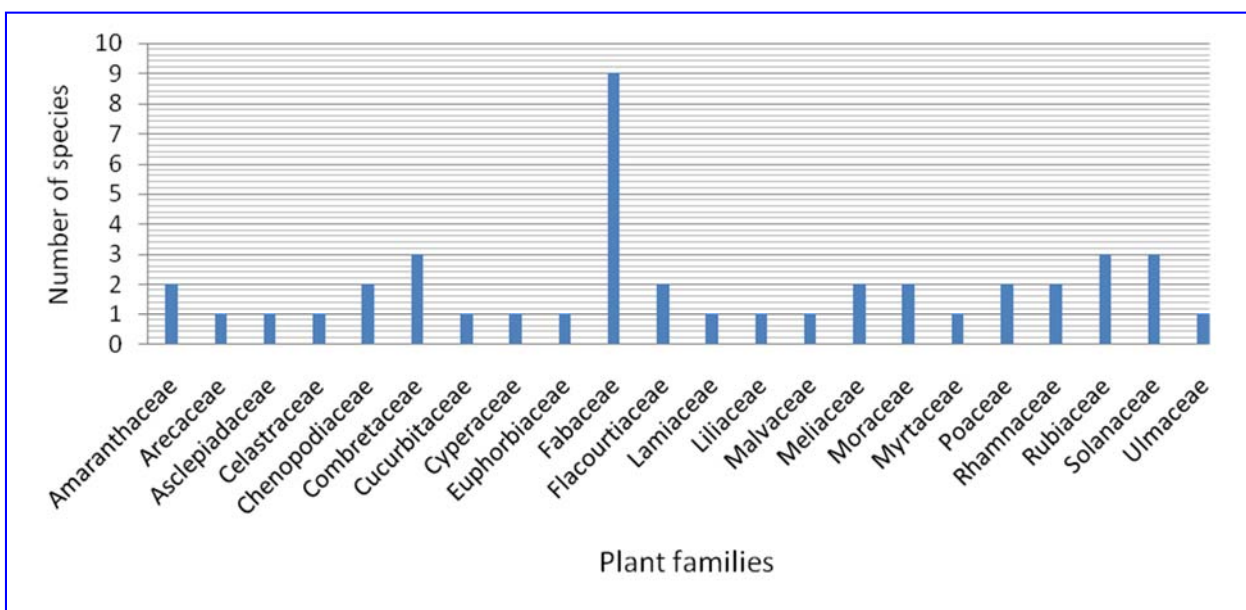


Fig 3: Number of plant species belonging to different families.

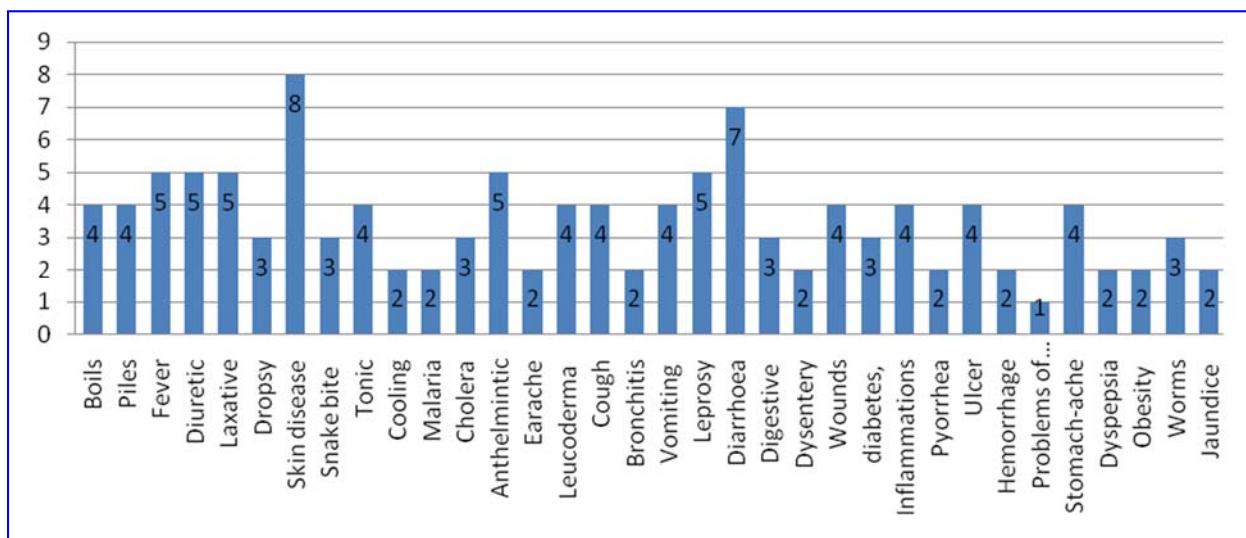


Fig 4: Various diseases which treat by number of plant species.

Nearly seventy per cent of the population of urban and rural areas benefit from the Unani system of medicine in spite of very sophisticated hospitals and allopathic practitioners which work under the Government of India. In the rural areas, household remedies are being used for generations. Medicinal plants used by the practitioners of this system are easily available in the forest, mountains, valleys, gardens and agricultural fields. This system is relatively cheap and quite near to nature. In Indian subcontinent,

these traditional systems are called as “Unani” or “Ayurvedic” system.

The present study provides information about some therapeutic uses of 43 plant species belonging 35 genera of 22 families. The plants are either used singly or in combinations with some other plants or plant parts. Some plant species are claimed to be quite effective remedies for snakebite, diarrhea, malaria, cough and cold, and stomach troubles etc. Since the uses are based on empirical knowledge, the scientific study of all these herbal drugs is highly desirable

to establish their efficacy for safe use. Various areas of Panna region are enriched with useful medicinal plants. However, resource based areas are facing severe biotic interference and require be protecting and conserving by community participation. Community participation can be initiated by giving incentives to local people and creating awareness about the useful properties of medicinal plants and their commercial values.

All members of community in the area use ethno medicinal plants. Various parts of the plant are used in curing different ailments. During the study period, it was noted that the ethno medicinal plant wealth of Panna district are not fully exploited. Some ethno medicinally important plant species are fast dwindling, mainly due to human interference. So, the area needs proper protection for the conservation and survival bio-resources. The medicinal plants can be protected by the conservation program by help of local people. Regularly chemical screening of medicinal plant and their useful parts collected from the fields in different seasons should be done. The oil bearing medicinal plants should be fenced for chemical and biological investigation, as well as for preventing overgrazing, cutting and use as a fuel wood. Moreover, to prevent the extinction of medicinal species, efforts may be made to grow the sensitive species by acclimatizing them and if required them *in situ* as many species can be considered as an asset for human beings [15]. Further research works should be formulized on base line of indigenous studies because there are still some diseases like “Cancer” and “AIDS”, for which there are no identified cures. So, ethno-directed studies can help in these research works.

It was concluded from this study that a nationwide survey of medicinal flora should be conducted to investigate and update the inventory of existing natural plant's resources of the area specially and generally throughout the India. In view of plentiful occurrence of number of plant species in Panna and its surroundings, it is suggested that National Medicinal Plant Board of India may be persuaded to prepare a

comprehensive report for the establishment of small scale processing units for the valued drugs.

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