Glimpses into the crude drugs of Sikkim

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During the special survey of Sikkim, it was observed that there is no organised crude drug trade there. The local people during their spare time, collect the crude drugs and sell them to the trade centres, which are later sent to the plains of India.

Local people collect about 40 crude drugs, and the medicinal importance of these 40 plants is not known to them. Fifteen samples of crude drugs could not be identified botanically.

SIKKIM, is one of the smallest states of India, 105 Km from north to south and 60 Km from east to west, with an area of approximately 4,000 sq. km. It is bounded on north by the vast stretches of Tibetan plateau and on the west by Nepal. On its east is Bhutan and Chumbi valley of Tibet. West Bengal stretches along its southern boundary (Fig. 1). The entire state is a close basin between two deeply intersected, parallel, transverse ridges, Donkya La and Singali La. A number of glaciers descend from the eastern slopes of Kanchanjunga into Sikkim. The highest of these is Zemu, which gives rise to the main river of Sikkim, the Teesta. Teesta is joined by its tributary Rangit in the southern part of the State (Fig 2).

Under the auspices of Central Council for Research in Ayurveda and Siddha, a special survey of Sikkim was undertaken during the months of March and April, 1977. Information about the crude drugs used in Indian systems of medicines, which are being collected and can be collected, was one of the important aspects of this survey. For collection of this data, crude

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drug samples from the native people were purchased. A study of the flora of the area was also undertaken to see if the other local plants, not known to natives, have any importance as a drug. For this the main centres of activities were Gyalzing in western Sikkim, Rangpho in southern Sikkim, Changu Lake in Eastern Sikkim and Lachung and Chungthang in northern Sikkim.

The crude drugs and plant samples collected have been classified into two groups.

Group I. The drugs collected from Sikkim by natives.

Group II. The plants yielding the drugs that grow in the State but not known to natives

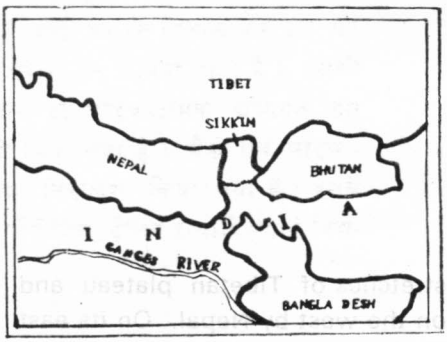

Fig 1.

The drugs of Group I, have been further divided into two categories a) which are identified botanically (Table I) and b) which are in the process of identification (Table II).

TABLE I

The drugs collected by the Sikkimeese (PLATE I-V, Fig 1-28).

Name of the plant	Plant part	Local name	Remarks
Aconitum heterophylloides Stapf	Tuberous root	*Chota Bikh*	May be used as *Nirvishi*
A. spicatum Stapf	Tuberous root	*Bikh*	*Vatsnabh* (Ayur.)
Aesculus indica Colebr.	Seed	*Pangra*	Used in goitre
Amomum subulatum Roxb.	Fruit	*Bari Elaichi*	—
Bergenia ligulata (Wall.) Engl.	Rhizome	*Pakhanbhed*	For body pain, *Pashanbheda* (Ayur.)
Cannabis sativa L.	Plant	*Bhang*	*Bhang*

Cinnamomum iners Reinw.	Bark and leaves	*Dalchini*	Bark as substitute of cinnamon leaves
C. pauciflorum Nees	,,	*Sinkoli*	,, ,,
C. tamala Nees & Eberm.	,,	*Tejpat*	,, ,,
Dioscorea deltoidea Wall.	Rhizome	*Kukurtarul*	starting material for diosgenin
Eleusine corocana Gaertn	Seed	*Kodo*	Used for domestic beer called *Katchigudi*
Evodia fraxinifolia Hook f.,	Fruit	*Khampa*	For dissolving kidney stone
Fagopyrum esculentum Moench.,	Seed	*Fafar*	A cereal
Glycine max Merr.	Seed	*Badmas*	Soyabeans, three varieties white, black and brown are seen
Iris ensata Thunb.	Rhizome	*Bhojo*	Pleasant smelling resembles *'Vacha'*
Juniperus recurva Buch.-Ham.	Leaves	*Dhupi*	Burnt for its sweet smell.
Litsea citrata Bl.	Fruit	*Sil Timur*	used as Oil for Skin diseases
Morus laevigata Wall.	"	*Kimbu*	
Nardostachys jatamansi DC	Rhizome	*Jatamansi*	*Jatamansi*
Orchis latifolia L.	"	*Panja*	*Salem Panja*

Picrorrhiza kurroa Royle ex Benth.	"	*Kutaki*	Two varieties, big and small are met with.
Piper aurantiacum Wall.	Fruiting spike	*Chabo*	It is quite different from *Chava*
P. brachystachyum Wall.	"	*Gol peepal*	*Peepal*
P. peepuloides Roxb.	"	*Peepal choti*	"
Rhododendron glaucum Hook.	Leaves	*Dhup Sunpati*	Used for fumigation
Rheum emodi Wall.	Rhizome	*Padamchal*	*Revand Chini*
R. webbianum Royle	"	"	"
Rubia cordifolia L.	"	*Manjitho*	*Manjith*
Swertia bimaculata Hook. f.	whole plant	*Chirato*	*Chireyatta*
Terminalia belerica Roxb.	Fruit	*Behada*	*Behada*
T. chebula Retz.	"	*Harar*	*Harar,* it is smaller in size comparable to *Harar Jangi* of market
Viscum album L.	whole plant	*Singhata*	Prescribed in muscular pains.
Zingiber officinale Rosc.	Rhizome	*Ardak*	The central portion is used as vegetable, the side branches after washing with lime water and drying are used as Sonth.

Animal drug (PLATE V, Fig. 29).

Lac	Oleo resin	*Kacha Laha*	For headache and vomiting, boiled in water and taken internally.

Mineral drugs (PLATE V, Fig. 30, 31).

Realger (Red orpiment)		*Kajushamir*	Given internally in the case of wounds.
Shilajit	Organo-mineral compound	*Shilajit*	*Shilajit* It had characteristic colour and smell.

Table II

The crude drugs of Sikkim which could not be identified.
(PLATE Fig. 32-34, PLATE VI-Fig. 35-41).

Name of the drug	Description
Betgyare	It is a female cone of some conifer. It is considered as a nutritive agent when sucked.
Chabo	In Gyalzing two types of samples of Chabo have been purchased. One of them is fruiting spike of *Piper aurantiacum*. The other, an underground part, about 1 cm thick, liana like structure with the split in between the vascular bundles could not be identified.
Chiratoo	It appears to be mixture of many species of *Swertia* and some other plants.

Dhulokti	Thick knotted underground parts, dark brownish in colour. This along with the plant of *Viscum album* and the rhizome of *Rheum webbianum* is given for muscular pains.
Hing	The jar containing the genuine *Hing* contained some local gum, which because of contact with asafoetida had acquired its smell. It is sold as *Hing* grade II. The genuine *Hing* when tested with hydrochloric acid and ammonia gave a blue fluorescence, showing the genuineness, whereas in the case of *Hing* grade II, there was no fluorescence indicating adulteration.
Jibo	It is some dried herb with compound leaves, dark brown in colour. In literature *Jibo* has been identified as *Trema orientalis*, but the collected sample does not resemble with the plant.
Kesar	It consisted of pink orange flowers, with free sepals, petals united with stamens to form a tube along with a single carpel, which showed the sample to be an adulterant.
Kbokim (Nepali Nag)	It is an underground part of a plant given in dysmenorrhoea.
Khyar	It is a gum probably of *Shorea robusta*.
Mahaguru	Underground part, horny, 0.5 cm thick.

Nirvishi (Bikhma)

In Gangtok Bazar, at a Tibetan stall, this drug was being sold at Rs. 200 per Kg. It was dark black, spongy tuber, with a continuous cambium and bitter taste. In literature, *Nirvishi* has been identified as root of *Delphinium denudatum*, but the root appeared to be that of some aconite. It is prescribed as an antidote of poison. The appearance of the root indicated that has been given some treatment but a transection of the tuber showed that it is in its natural form.

Sarma Guru

It consists of a straight tuber about 5 cm long and 0.5 cm thick, with a crown of radical leaves at the top. In transection it is yellow in colour with a continuous cambium, slight smell and indifferent taste.

Adulterant in *Pakhanbheda*

The sample of *Pakhanbheds* contained some other rhizomes which could be easily differentiated from the genuine drug but could not be identified.

The above drugs under their local names are supplied to crude drug centres of India where these are sold under some other well known Indian names.

In Table III are given the names of the plants of Group II along with their place of occurrence and their importance as source of drugs. The people of Sikkim gave no knowledge about their economic importance.

TABLE III

Plants used as drugs but not collected in Sikkim.

Name of the plant	Locality (Altitude in meters)	Local Name	Remarks
Abies forrestii C.C. Rogers	Yumthang (3,000) Changu (3,500)	*Ailey*	*Talispatra*
Alstonia scholaris R. Br.	Jorethangu (700)	——	*Saptaparna*
Berberis aristata DC	Lachung (2,500)	——	Daru Haridra
B. umbellata Wall.	" "	——	" "
B. wallichiana DC	" "	——	" "
Bergenia purpurascens Hook. f. & I.	" "	*Khesanabo*	*Pashanbheda*
Betula utilis D. Don	Yum thang(3,000)	——	*Bhojpatra*
Boerhaavia diffusa L.	Rangpho (325)	——	*Punarnava*
Centella asiatica L.	Gangtok (1 500)	——	*Mandukaparni*
Ceologyne corymbosa Lindl.	Rabangla (")	——	*Swarnjiwanti*
C. ochracea Lindl.	Yaksam Road(1,500)	——	" "
Curcuma zedoaria Rosc.	Between Singtam and Temi (1,000)	—— ——	*Sathi*
Datura metal L.	Rangpho (325)	——	*Dhatura*
D. suaveolens Humb. ex Willd.	" "	——	
Dioscorea bulbifera L.	Yaksam Road (330)	*Ghartarul*	*Varahikand*

Dryopteris wallichiana (Spreng.) Hyld.	Kewsey (3,000)	——	Male fern
Erythrina variegata L.	Legship (1,000)	Phaltho	*Mandhar*
Lycopodium cernuum L.	Pamionche (2,000)	Negbeli	Yields Lycypodium powder.
L. clavatum L.	" " " "		" "
Murraya koenigii	Naya Bazar (500)	——	*Surabhnimba*
Scindapsus officinalis Schott.	Gyalzing (1,500)	Kanchurna,	*Gaj Pipal*
Sida carpinifolia L.	Rangpho (325)	——	*Bale*
S. humilis Willd.	" "	——	"
S. veronicifolia Lamk.	" "	——	"
Solanum indicum L.	Mangan (1,220)	——	*Blrhatta*
S. nigrum L.	Rangpho (325)	——	*Mankoh*
S. torvum Swartz	" "	——	Substitute of *Solanum Indicum.*
Spilanthes acmella Murr.	Toong (1500)	——	*Akarkara*
Urena lobata L.	Rangpho (325)	——	*Baia*
Valeriana hardwickii Wall.	Between Toong Singhik (2,000)	——	*Tagar*
Viola serpens Wall.	Yksam Road		*Banafasha*
Vitex negundo L.	near Gyalzing (1,000)	—	*Nirgundi*
Woodfordia fruticosa Kurz.	Rangpho (325)	——	*Dhataki*

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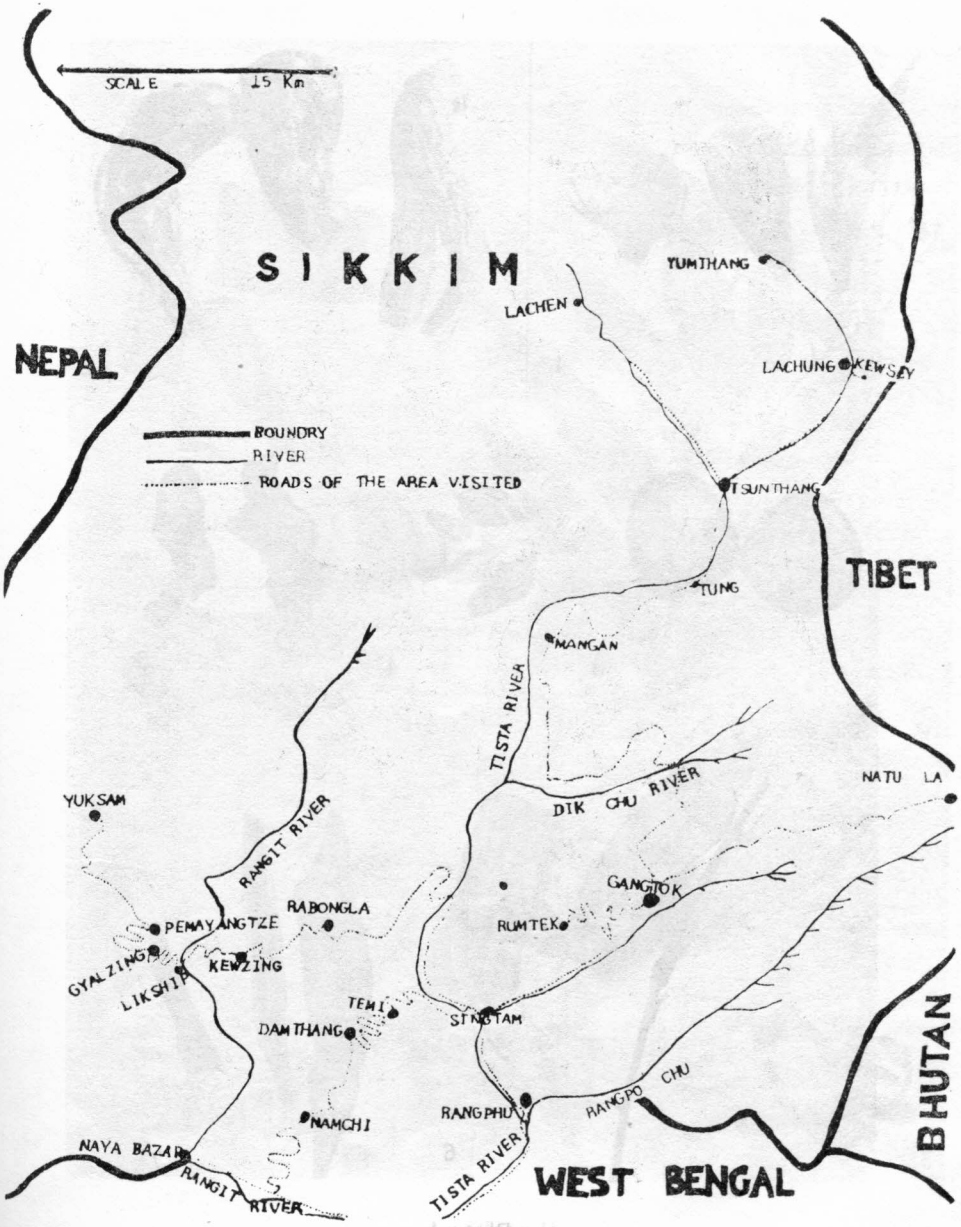
हिन्दी सारांश

सिक्किम की वनौषधियों का द्रव्यविनिश्चयात्मक अध्ययन

एच.एस. पुरी एवं ज्ञानेन्द्र पाण्डे

सिक्किम के सर्वे के दौरान यह देखा गया कि कुछ वनौषधियां ऐसी है, जिन्हें वहां के स्थानीय लोग इकठ्ठा कर के बाजार में बेचते हैं, किन्तु अनेक दूसरे पौधों के गुणों के बारे में उन्हें बिल्कुल जानकारी नहीं है। प्रस्तुत लेख में सिक्किम से इकठ्ठी हो रही तथा वहाँ से इकठ्ठी हो सकने वाली बनौषधियों के बारे में बताया गया है।


SCALE 15 Km
SIKKIM
NEPAL
TIBET
BHUTAN
WEST BENGAL
BOUNDRY
RIVER
ROADS OF THE AREA VISITED
YUMTHANG
LACHEN
LACHUNG
KEWSEY
TSUNTHANG
TUNG
MANGAN
TISTA RIVER
DIK CHU RIVER
NATU LA
YUKSAM
RANGIT RIVER
RABONGLA
PEMAYANGTZE
GYALZING
LIKSHIP
KEWZING
GANGTOK
RUMTEK
TEMI
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SINGTAM
NAMCHI
RANGPHU
RANGPO CHU
NAYA BAZAR
RANGIT RIVER
TISTA RIVER

Fig. 2.

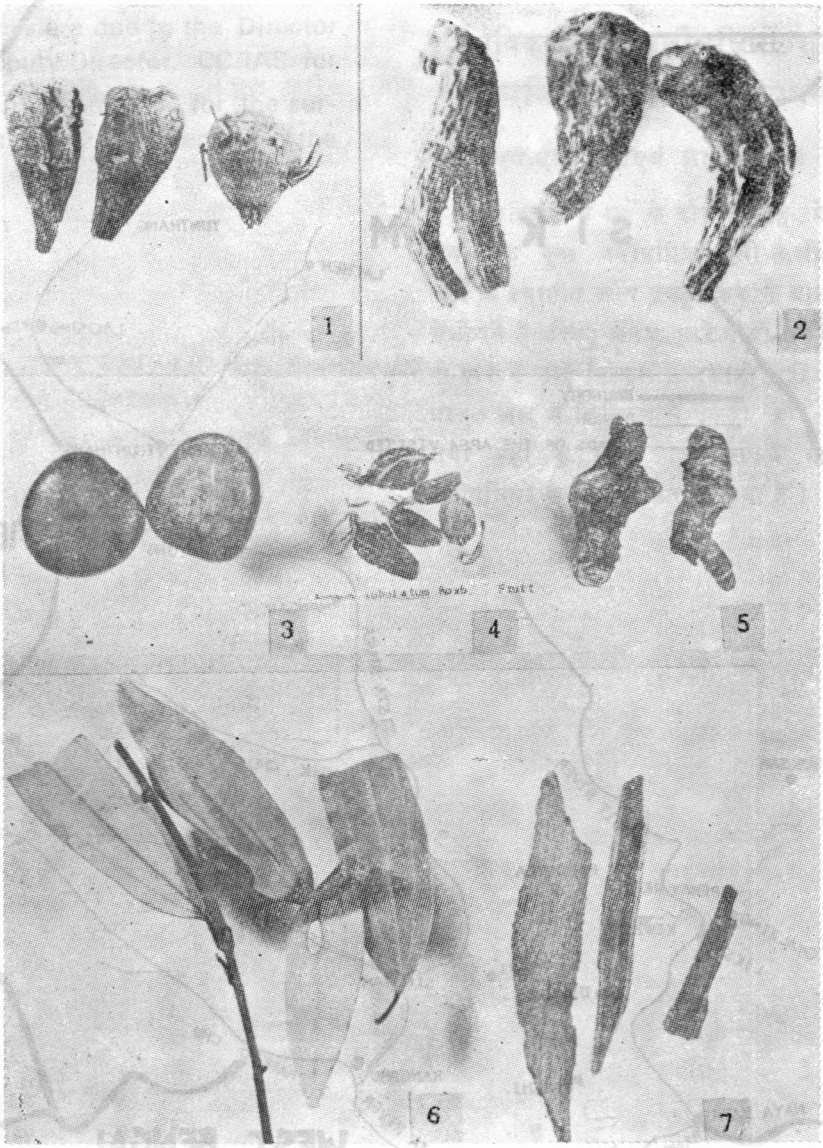

Plate I

Fig. 1 : *Aconitum, heterophylloides*, tuberous root × ½

Fig. 2 : *A. spicatum*, tuberous × ½

Fig. 3 : *Aesculus indica*, seed × ½

Fig. 4 : *Amomum subulatum*, fruit × ½

Fig. 5 : *Bergenia ligulata*, rhizome × ½

Fig. 6 : *Cinnamomum iners*, leaves × ½

Fih. 7 : *C. iners*, Bark × ½

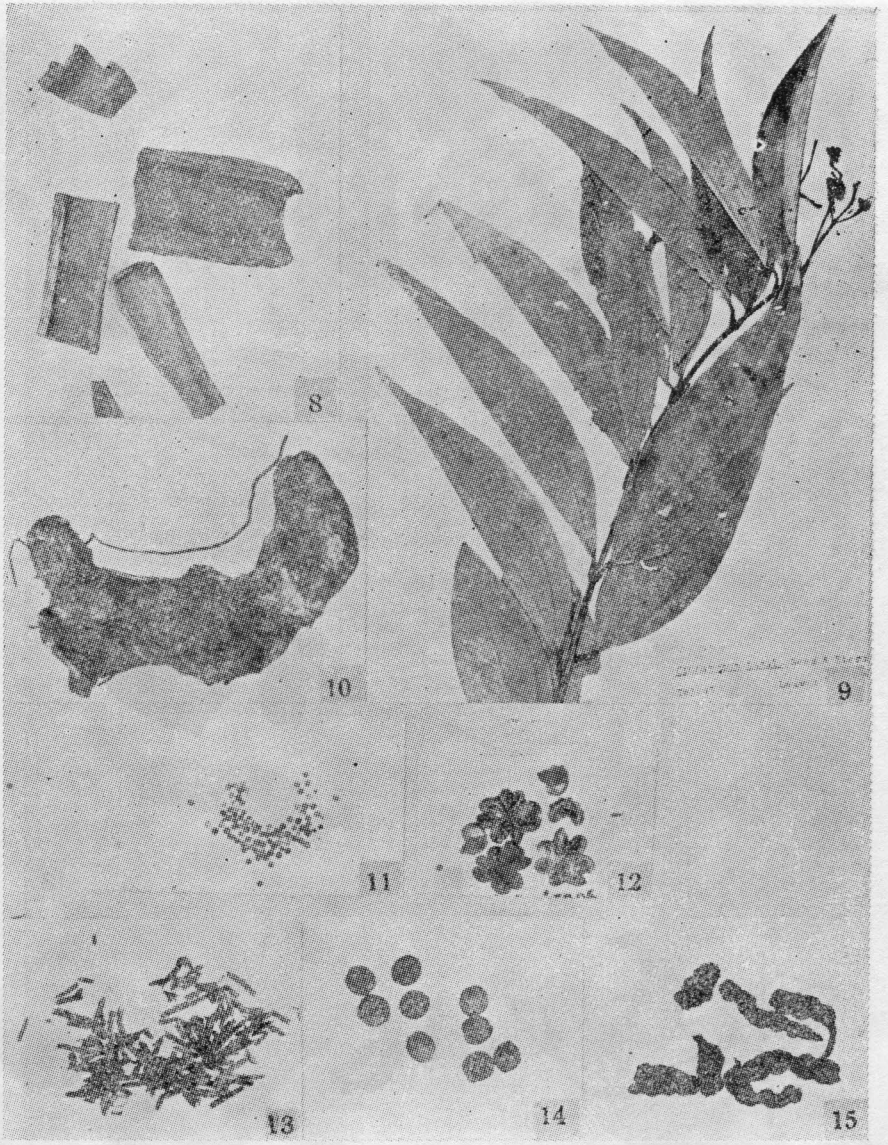

Plate II

Fig. 8 : *Cinnamomum pauciflorum*, bak × 1

Fig. 9 : *C. tamala*, leaves × $\frac{1}{3}$

Fig. 10 : *Dioscorea deltoidea*, rhizome × 1

Fig. 11 : *Eleusine corocana*, seed × 1

Fig. 12 : *Evodia fraxinifolia*, fruit × 1

Fig. 13 : *Juniperus recurva*, leaves × $\frac{3}{4}$

Fig. 14 : *Litsea citrata*, fruit × $\frac{3}{4}$

Fig. 15 : *Morus laevigata*, fruit × $\frac{3}{4}$

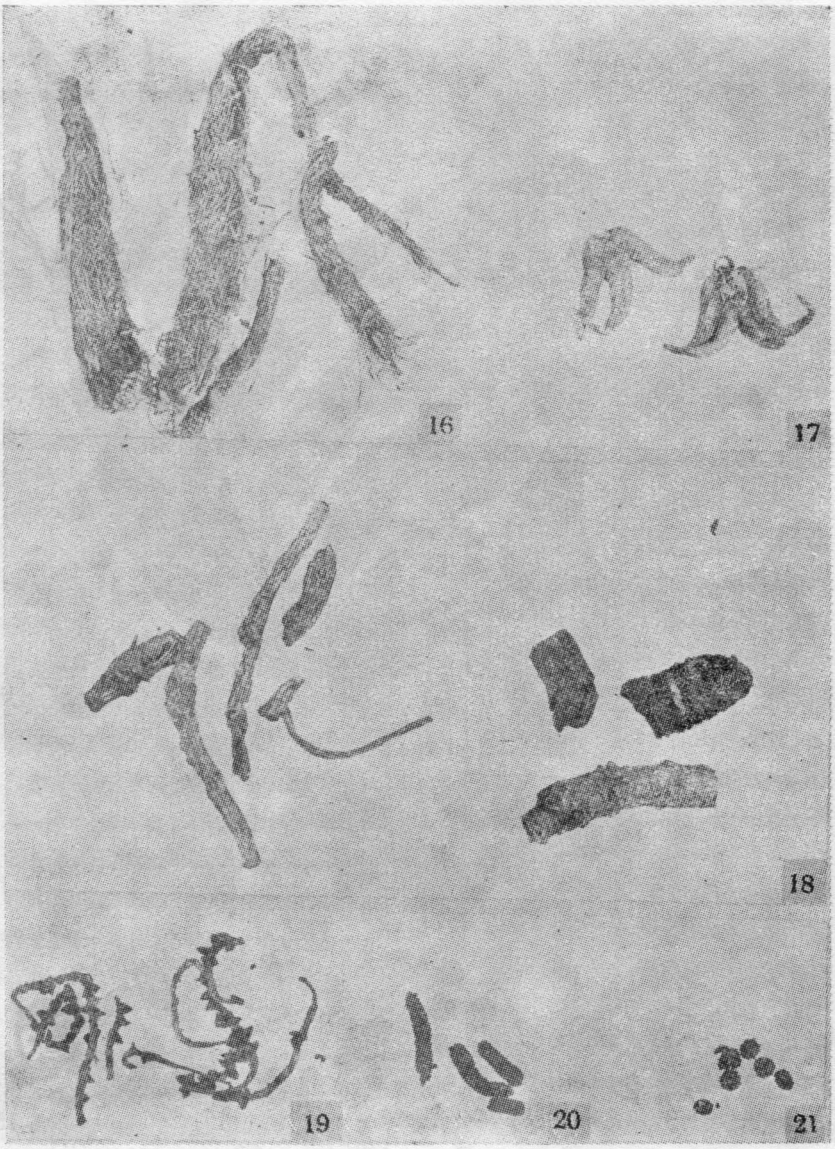

Plate III

Fig. : 16 *Nardostachys jatamansi*, rhizome × 1

Fig. 17 : *Orchis latifolia*, rhizome × 1

Fig. 18 : *Picrorrhiza kurroa*, rhizome, small and big variety × 1

Fig. 19 : *Piper aurantiacum*, fruiting spike × $\frac{3}{4}$

Fig. 20 : *P. peepuloides*, fruiting spike × $\frac{3}{4}$

Fig. 21 : *P. brachystachyum*, fruiting spike × $\frac{3}{4}$

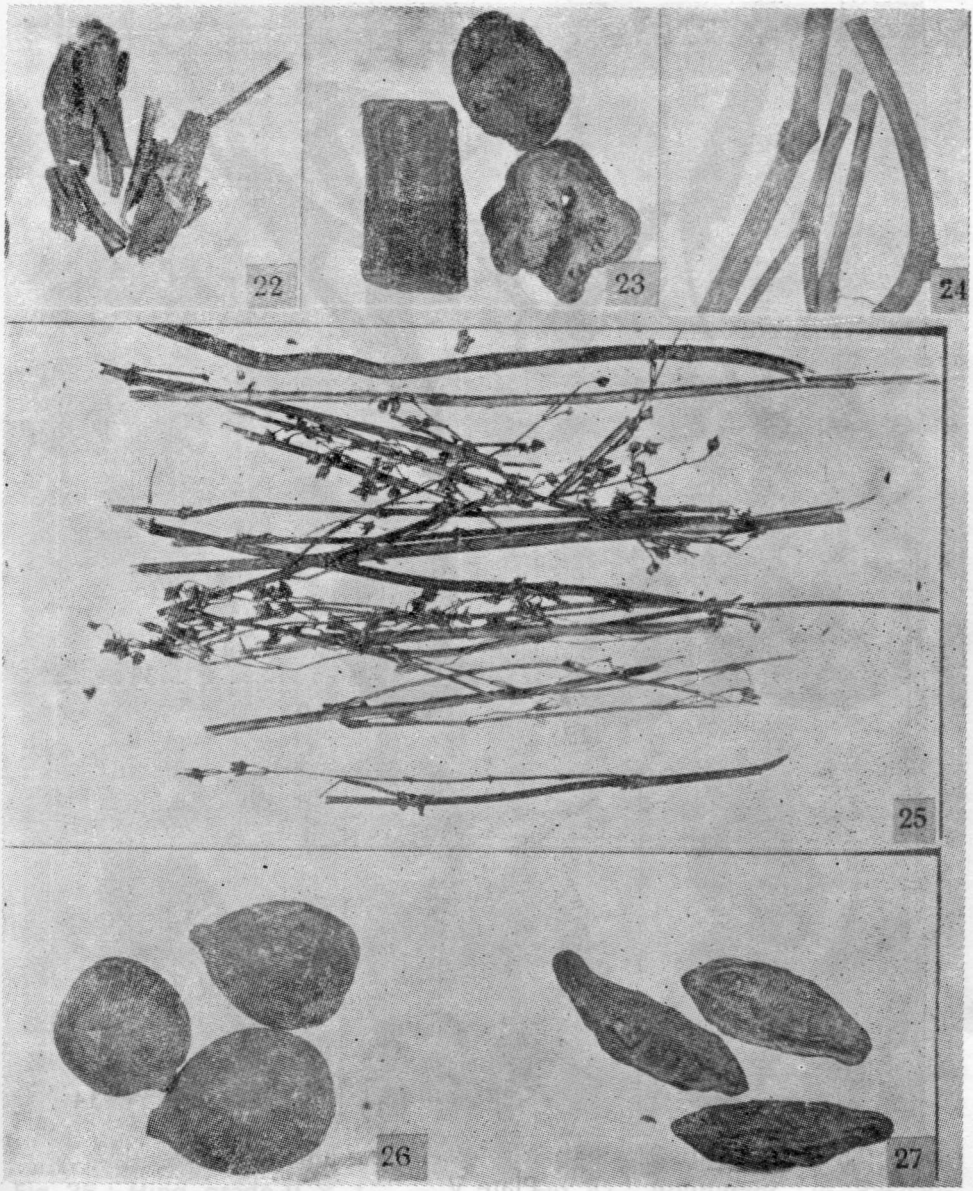

Plate IV

Fig. 22 : *Rhodadendron glaucum*, leaves × $\frac{3}{4}$

Fig. 23 : *Rheum emodi*, rhizome × $\frac{3}{4}$

Fig. 24 : *Rubia cordifolia*, rhizome × $\frac{3}{4}$

Fig. 25 : *Swertia bimaculata*, whole plant × 2/2

Fig. 26 : *Terminalia belerica*, fruit × 1

Fig. 27 : *I. chebula*, fruit × 1

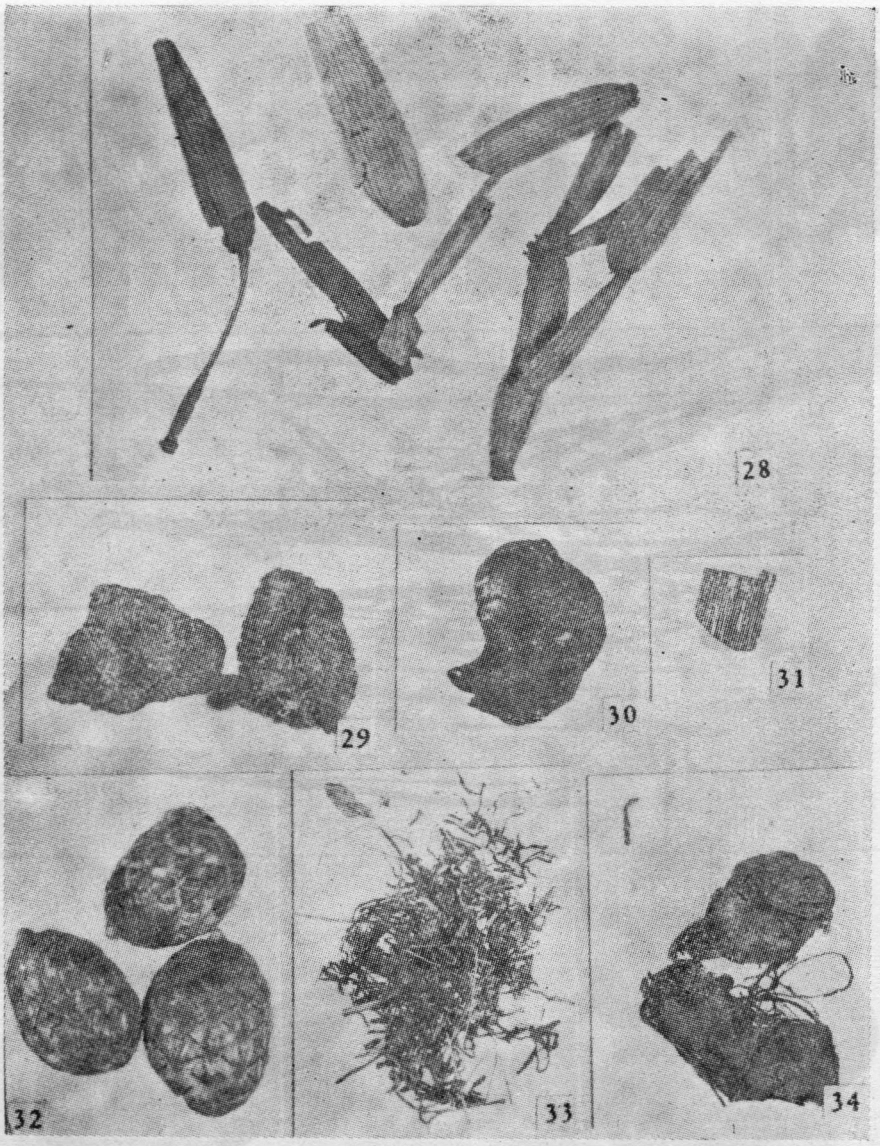

Plate V

Fig. 28 : *Viscum album*, whole plant × 1
Fig. 29 : Lac × 1
Fig. 30 : Shilajit × 1
Fig. 31 : Realgar, × 1
Fig. 32 : Betgyara × 1
Fig. 33 : Jibo × 1
Fig. 34 : Dhulokti × 1

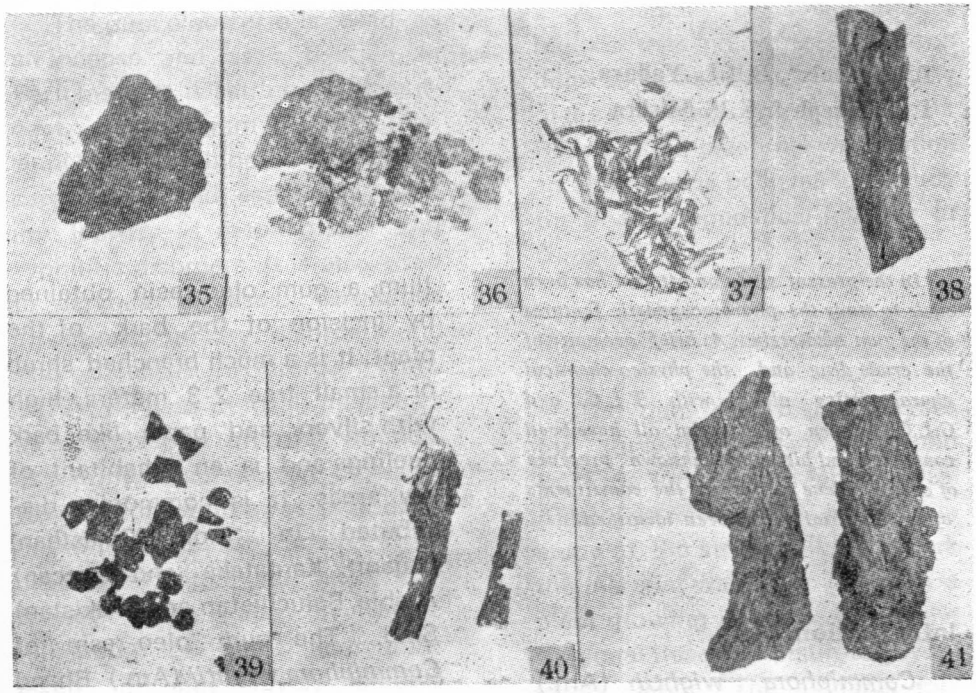

Plate VI

Fig. 35 : Hing (Asafoetida) × 1 grade 1

Fig. 36 : Hing, grade II × 1

Fig. 37 : Kesar, (adultrant) × 2

Fig. 38 : Khokim (Nepali nag) × 1

Fig. 39 : Khyar × 1

Fig. 40 : Sarma Guru X 1

Fig. 41 : Adulterant in Pakhan-bheda