

## An ethnozoological studies and medicinal values of vertebrate origin in the adjoining areas of Pench National Park of Chhindwara District of Madhya Pradesh, India

Neelima Bagde<sup>1\*</sup> and Shampa Jain<sup>2</sup>

<sup>1</sup>Department of Zoology, R.S. Govt. Girls College, Chhindwara, MP, India

<sup>2</sup>Department of Zoology, Govt. Model Science College, Jabalpur, MP, India

\*Corresponding Author Email- [neelimabagde@gmail.com](mailto:neelimabagde@gmail.com)

### ABSTRACT

This paper documents zootherapeutic practices in adjoining area of Pench National Park of Chhindwara district. The ethnozoological study was mainly conducted in the villages surrounding the Park area. It is primarily based on field survey carried out in villages, where dwellers provided information on animal species used as medicine, body parts used to prepare the remedies, and the illnesses to which the remedies were prescribed. The document tribes and rural involved in using animal parts as medicines. The animal parts namely- blood, excreta, urine, feather, fat, hair, spines, skin, flesh, bones, secretions, shell etc. were used in raw or cooked forms for the treatment of burn, fracture, sunstroke, pneumonia, rheumatism, asthma, drug addiction, antidote, fever, acidity, fit, cough and cold, tuberculosis, ear pain, allergy, diabetes, jaundice, impotency, diarrhea and dysentery, cataract, paralysis, leprosy, goiter, wound, whooping cough, stomachache, back pain. A total of 30 animal species were recorded and they are used for 41 kinds of different ethno medical purposes. Fauna is the cheapest way for cure of various health disorders

### KEYWORDS

Ethnozoology,  
Zotherapy,  
Tribes, Remedies,  
Health disorder

### INTRODUCTION

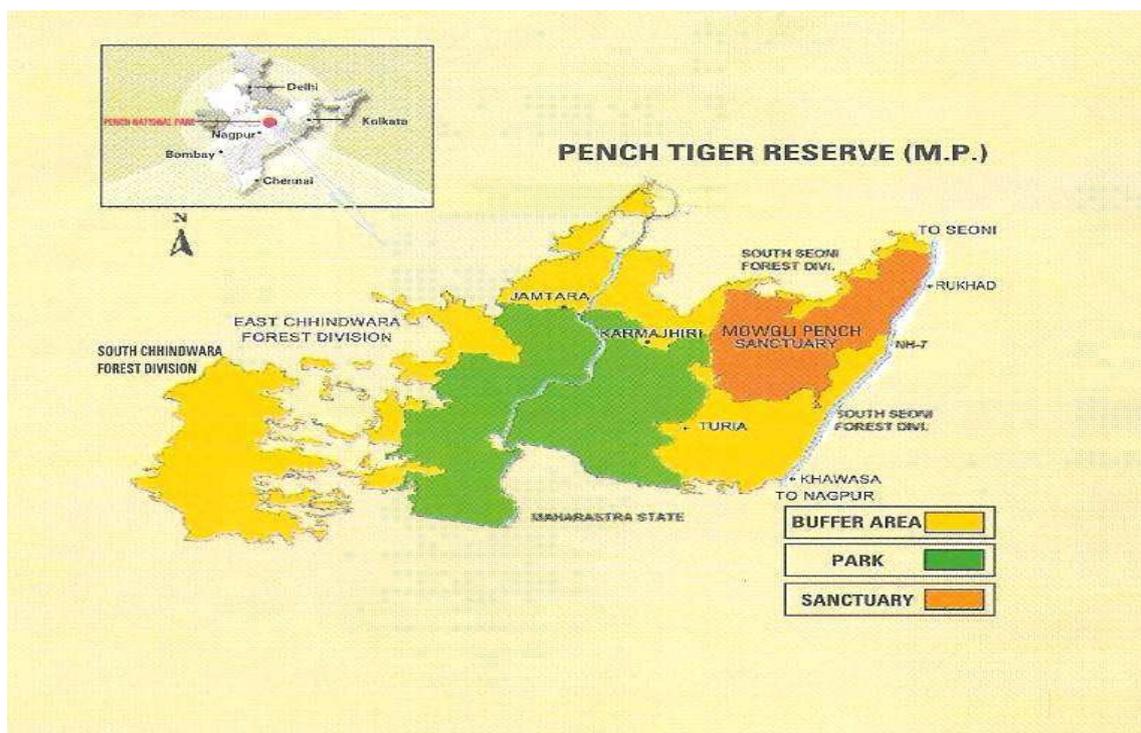
There is evidence that human beings are familiar with use of animals and plants for food, cloth, medicine etc. since ancient times, (Judith, 2005). Ethnozoological study is concerned with perceiveness, Management, classification and use of animal species by mankind through human- faunal interrelation and interaction in the surrounding environment where they live. The medicinal use of animals and animal- derived product is known as Zotherapy which have always played a significant role in the healing practice, magic rituals and religions of indigenous and western societies all over the world (Angelletti *et al.*, 1992; Rosner, 1992). Ancient man used to have a broad natural pharmacopoeia consists of wild plant and animal species. Animals and the products derived from their body organs constitutes the part of inventory of medicinal substances which are widely used by the people since time immemorial and such practices still exist in traditional medicine, (Unnikrishnan, 1998). Ingredients of wild plants and animals are not only used in traditional medicine but have been increasingly used as raw material in preparation of modern medicine and some herbal preparations except few much work has not been done on ethnozoology, therefore in the study it is endeavored to record the importance of animal products and their utility as a medicine by the local tribal and rural community in therapeutics because it is observed that the tribal/- rural communities residing at the products as traditional medicine. The study not only brings forth the

salient features of the life style of tribal and rural people at Chhindwara and attempts to inventories' the traditional nature cure system also suggest a strategy to conserve these for future too (Banarjee *et al.*, 2010).

India is gifted immense faunal and floral biodiversity, because of the extreme variation in geographical and climatic condition prevailing in the country. There are about 45000 species of plants and 81000 species of animals (MoEF, 1994). In India, different tribal and ethnic communities are dispersed all over the country people of these communities are highly knowledgeable about the animals and their medicinal value, and they also provide considerable information about the use of animals and their by-products as medicine. Most of the rural areas, tribal and ethnic people are totally dependent on local traditional medicinal system for their health care because they are living in remote areas where hospital and other modern medicinal facilities are not available, so they use their traditional knowledge for medicinal purpose and this knowledge is passed through oral communication from generation to generation (Jaroli *et al.*, 2010).

#### Study Area:

The Pench National Park (Map-1) nestling in the lower southern reaches of the Satpuda hills is named after the Pench River, mean deriving through the Park from north to south. It is located on the southern boundary of Madhya Pradesh bordering Maharashtra in the district of Chhindwara and Seoni.

**MAP-1:** Map of Pench National Park

It is situated in the 79° 07'45" East to 79° 22'30" East longitudes and 21° 37" North to 21° 51' 30" North latitudes and 425-630 M (M.L.S.) Altitude. Average annual temperature in December 4° C. Minimum and Maximum 42° C. in May. Average annual rain fall of about 1300 mm. The Pench river flowing through the center of the reserve is dry by the April end but a number of water pools locally known as dohs are found, which serve as water holes for wild animals. The undulating topography supports mosaic of vegetation ranging from moist. The forests of Park are south Indian tropical moist Deciduous, Southern Tropical Dry Deciduous Teak forest and Southern Dry Mixed deciduous forests. Teak forests good grass cover and is consequently a fine habitat for herbivores. The area has always been rich in wild life.

The Park exhibits a great ethnic, cultural, floral and faunal diversity. It is a very popular destination for eco-tourism. A variety of fauna including highly rare and endangered species are found in this Park. There are over more than 200 species of resident and migratory birds, 45 butterflies, 54 moths and numerous other insects. It is house of panther, leopard, sloth bear, Sāmbhar, chinkara, jackal, wild cat, elephant, deer, wild dog and languor amongst others. The ethnozoological study was mainly conducted in the village's surroundings the Park. The Gond are the main tribal group which lives around the Park, so most of these data were collected from Gond tribal people.

#### **GOND TRIBES:-**

The Gond people are main inhabitant of surrounding areas of the Pench National Park, Bicchua, tehsil of Chhindwara district. 42,243 tribes live in Bicchua tehsil. It is 54.4% of total population of District. They are traditionally a nomadic community and speak Gondi. Gonds are generally shy, honest and laborious. They are very co-operative in nature and peace loving people.



**Figure.-1:** Picture of Gond (old age) Woman (Photo by: Neelima Bagde)

The economic condition of the tribes is not good. Agriculture, animal husbandry, poultry forming and laboring are source of income. They also collect gum, traditional medicine and honey and sale to generate income. The life of the people is full of traditions and social customs from birth to death owing to outdated customs not attuned to remain competitive in the current economic scenario of privatization.

Due to living in remote areas traditional culture large number of family member and poverty their children are not able to take even primary education, only 5-10% children get primary education, higher education. The tribes and rural people residing in the remote and deep forest areas still dependent on plants and animals for their primary health care and for treatment for various ailments (Fig-1 Gond Tribe woman).

**MATERIALS AND METHODS**

Ethnozoological information about animal and their products used in traditional medicine a study was conducted from January 2009 to April 2009 in the surrounding villages are Jamtara, Gumtara, Khamarpani, Bicchua, Ubbegoan, Linga, Govara, Kunda, Palatara, Chhindi of South & East Chhindwara forest range of Pench Tiger Reserve. The ethnomedicinal data (local name of animals, mode of preparation and administration) were collected through semi- structured questionnaire interview informal conversations and group discussion with selected rural/tribal people. A total of 20 (15 male, 5 female) people were selected to collect ethnozoological information these information were collected from local herbalist, healers, farmers and local doctors are called Panda, Ojha, Padiyar. Among these interviewees 10% were aged 35 to 45 years, 40% were

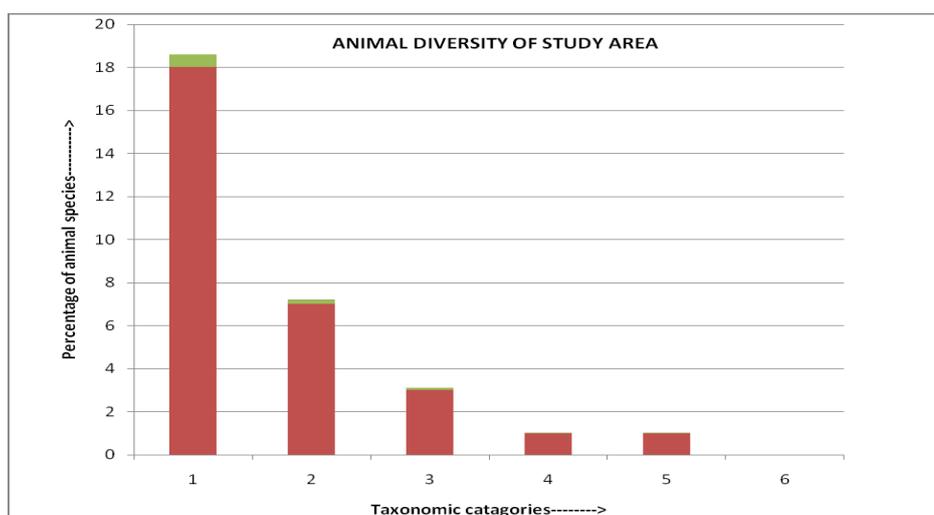
60 to 70 years old and half of samples 50% were in the 50 to 60 age range. Collections are valuable because they serve as voucher specimens records of the animals that are known by community and function as specimens for systematic identification (Martin, 1995). The scientific name and species of animals were identified using relevant and slandered literature (Ali, 1996; Prater, 1996).

**RESULTS AND DISCUSSION**

The present study revealed the traditional knowledge of treating various kinds of ailments using different vertebrate animal and their products by the local tribal and rural people inhabitants of villages in the adjoining areas of Pench National Park. Many people were found to lack formal schooling education but they have knowledge about use of local animal and plant resources for traditional medicinal purpose.

Additional Table-1 shows that Gond tribes of Chhindwara were using 30 animal species for the treatment of over 41 kinds of ailments. The animal species used as traditional medicine by these people consist of 18 mammals, 7 birds, 3 reptiles, one amphibian and one Pisces. Highest number of animal belonged to mammalian taxonomic group (N=18, 60%), followed by birds (n=7, 23%), and reptiles (n= 3, 10%), amphibians (n=1, 3.3%), Pisces (n=1, 3.3%) (Table 2 & Fig. 2).

Tribal people use these animals and their products for the treatment of 41 kinds of different ailments including asthma, paralysis, cough & cold, fever, wound healing etc. These animals were used as whole or by products of these animals like milk, blood, organ, flesh, feather, dung, bone etc. for the treatment of various ailments and used in the preparations of traditional medicine (figure 3 & 4).



**Fig. 2 :** Animal used in study area

**Table 1:** list of animals and their products used as medicine in adjoining area of Pench National Park.

S.N.	Eng. Name	Scientific Name	Local Name	Parts Use	Medicinal use	How use
1	Pig	<i>Sus scrofa domestica</i>	sungra	Fat	Burn & Fracture	Fat applied on burn & wound area.
2	Goat	<i>Capra indica</i>	Bakari	Milk	Sunstroke	Milk is poured in finger tips.
				Urine	Tuberculosis	Administered orally 2 tea Spoon 21 days regularly.
				Dropping	Gout	Smooth paste with water is Applied on swelling.
				Leg	Asthma	Soup is taken orally.
				Intestine	Ulcer	Juice is used as a remedy for ulcer.
3	Wild boar	<i>Sus scrofa cristatus</i>	Barha	Skin	Pneumonia	Ash of skin orally use and rub on chest area.
				Fat	Rheumatism	Oil use for massage on affected area.
4	Cow	<i>Bos spp.</i>	Gay	Abdominal stone	Asthma	Small piece used orally to Cure asthma.
5	Horse	<i>Equus hemionus</i>	Ghoda	Sweat	Drug addiction	Sweat mix with wine and administered orally.
6	Wild dog	<i>Canis alpinis</i>	Dhol	Stool	Antidote	Stool use orally for stomach Poisoning.
7	Hare	<i>Lipus nigricollis</i>	Kharha	Flesh	Fever	Cooked flesh use orally.
				Liver	Acidity	Dry liver is taken orally.
				Dropping	Fit	Fume of dropping is taken nasally.
				Bone	Cough & cold	rub with water and use to affected area.
8	Rat	<i>Rattus rattus</i>	Chuha	Dropping	Urine obstruction	Mix with water and apply on abdominal part to maintain free passage of urine.
9	Sloth bear	<i>Melursus ursinus</i>	Richh	Liver	Tuberculosis	Powder of liver use orally.
10	Flying fox	<i>Pteropus spp.</i>	Badur	Whole body	Asthma	Ash is use to cure asthma.
11	Pangolin	<i>Manis crassicaudata</i>	Khol-madar	Shell	Back pain	Shell is tied in back portion of lumber region.
12	Three striped squirrel	<i>Fanambulus Palmarum palmarum</i>	Gilhari	Blood	Fit	Fresh tail blood is used as a nasal drop.
13	Porcupine	<i>Hystrix indica</i>	Sehi	Spin	Stomachache	Ash of spine is mixed with honey and administered orally.
14	Mole	<i>Talpa spp.</i>	Chhucu	Whole body	Asthma	Boiled in water and taken orally.
15	Indian bison	<i>Bos gaurus</i>	Jangli boda	Dung	Hair growth	Dry dung boiled with coconut oil promotes hair growth.
16	Sambhar	<i>Cervus unicolor</i>	Sambar	Antler	Pneumonia	Rubbed with water and paste is applied on chest. ( for children ).
17	Spotted deer	<i>Axis axis</i>	Harin	Antler	Ear pain	Rubbed with water and used as eardrop.
18	Monkey	<i>Mucaca mullata</i>	Bandar	Flesh	Joint pain	Cooked meat use for joint pain.
19	Common mayna	<i>Acridotheres tristis</i>	Laho	Whole body	Whooping cough	Ash is used orally with honey.
20	House sparrow	<i>Passer Domestica</i>	Gaonrani	Nest	Ellery	Fume apply in whole body covered with blanket.
21	Domestic fowl	<i>Gallus gallus</i>	Pilaii	Gall bladder	Diabetes	Fresh gall bladder administered orally.
				Inner Membrane Of gizzard	Jaundice	Dry membrane use orally.
22	Jungle fowl	<i>Gallus sonnerati</i>	Jangli Murga	Testis	Male impotency	Organ use orally.
23	Pea fowl	<i>Pavo cristatus</i>	Mor	Feather	Diarrhea & dysentery	Ash mix with honey and make smooth paste is used orally.
24	Cattle egret	<i>Bubulcus ibis</i>	Bagula	Bone	Cataract	Powdered bone suspended in rose water is used as eye drop.

**Table 1: Continued...**

Sr.No.	Eng. Name	Scientific Name	Local Name	Parts Use	Medicinal use	How use
25	Pigeon	<i>Columba livia</i>	Parewa	Blood	Paralysis	Fresh blood is applied on affected area.
26	Cobra	<i>Naja naja</i>	Nag sap	Casts of slough	Leprosy	Ash mixed with oil and apply on wound.
27	Rat snake	<i>Ptyas mucosus</i>	Dhamna	Vertebrae	Goiter	Making charm and tide around neck.
28	Chameleon	<i>Chameleon zeylanicus</i>	Dagdaga	Tail	Elephantiasis	Bound around leg to cure this problem.
29	Frog	<i>Rana tigrina</i>	Menduk	Flesh	Wound	Crushed flesh applied on wound.
30	Labeo	<i>Labeo rohita</i>	Rohi	Stone	Kidney stone	2mg. stone administered orally.

**Table-2: Animal diversity of study area**

Sr.No.	Phy/Class	No. of Animals
1	Mammalia	18 (60%)
2	Aves	07 (23%)
3	Reptilia	03 (10%)
4	Amphibia	01 (04%)
5	Pisces	01 (04%)
<b>5 Class</b>		<b>30 Animals</b>

Additional Table-1:- Also shows that cough, asthma and other respiratory diseases are most frequently cited disease among these people, as such number of traditional medicine are available for the treatment of such diseases, many animals by products were used like flesh of frog, milk of goat and ash of peacock feathers are some of them. Goat (*Capra indica*) is most frequently cited animal species among these people by products of these animals were used in the treatment of various ailments.

Different animals used for healing by tribes of Chhindwara are also being used by various groups in India and other country. Some animals and their products are being put to similar uses, such as fat of *Sus scrofa domestica* is used for healing of burns and fractures is also reported in Attapadi hills of Western Ghat, Ao tribes in Nagaland and Simplipal biosphere reserve Orissa. (Padmanabhan and Sujana, 2008; Kakati *et al.*, 2006; Mishra *et al.*, 2011; Jamir and Lal, 2005). *Talpa spp.* is used in asthma is also used in wild life Sanctuary of Eturunagaram in the Warangal district of Andhra Pradesh, (Banarjee *et al.*, 2010), Naga & Ao tribes of Nagaland and SBR Orissa. Dung of *Bos gaurus*, is used for promotes hair growth is also used by tribes of Attapadi hills of Western Ghat. Antler of *Axis axis* is used in earache is also used by Naga tribes in Nagaland and tribes of Attapadi hills. *Labeo rohita* (fish) stone of fish is used for kidney problem is also used by Saharia tribes of Rajasthan. (Mahawar *et al.*, 2007). Milk of *Capra indica* is used for sunstroke, urine is used for tuberculosis among Ao tribes of Nagaland, (Kakati *et al.*, 2006), leg is used for asthma is also used by Saharia tribes of Rajasthan. Stool of *Canis alpinis* is used for stomach poisoning in this area is also used by tribes of Attappadi hills of Western Ghat. Blood of *Collumba spp.* is used for Paralysis in this area is

also used by Saharia tribes of Rajasthan. Spine of *Histrix indica* is used in stomachache is also used in wild life sanctuary of Eturunagaram in the Warangal district of Andhra Pradesh, Naga and Ao tribes of Nagaland. (Banarjee, 2010; Kakati *et al.*, 2006; Jamir and Lal, 2005).

**Fig.-3: Cattle Egret ( *Bubulcus ibis* )****Fig.-4: Domestic animal ( *Capra indica* )**

However some of these animals and their products are being used for the treatment for other disease in different parts of India and abroad, such as the casts of slough of *Naja spp.* is used for leprosy in this area but the meat and fat used for eye sight and cancerous wound by Tamang people in Central Nepal. The *Pavo cristatus*, ash of feather is used for diarrhea and dysentery in this area but feather is used for infertility by Saharia tribes of Rajasthan. Sweat of *Equus spp.* is used for anti-drug addiction in this area

but semen administered orally to cure tetanus and rabies and bones is used for herpes by Saharia tribes of Rajasthan. Fresh tail blood of *Funambulus palmarum palmarum*, is used for fit in this area but intestine is used for general poisoning by tribes of Attappadi hills of Western Ghat. Tail of *Chameleon zylanicus* is used for Elephantiasis in this area but fried animal oil is used for wound healing agent by tribes of Western Ghat. Liver of *Melursus ursinus*, is used in tuberculosis but fat is used for Rheumatism by people of Simlipal biosphere reserve, Orissa (Mishra *et al.*, 2011).

Nest of *Passer domestica* is used for allergy in this area but whole animal is used for impotency by Jirels of Central Nepal. *Lepus nigricollis* is used for fever, acidity, fit, cough and cold in this area but flesh is used for asthma by Jirals of Central Nepal (Lohani, 2011).

## CONCLUSION

To conclude, a total of 30 animal species were identified for the over 41 kinds of medicinal purposes used by Gond tribes, inhabitants of village surroundings areas of Pench Park Chhindwara. Out of these 30, mammals consist the highest number of animal (n = 18, 60%) reported for the medicinal purposes. Our study also shows that the Gond tribes and rural people have very rich folklore and traditional knowledge in the utilization of different animal. So there is an urgent need to properly document to keep a record of the ethnomedicinal data of animal products and their medicinal uses. Further studies are required for scientific validation to confirm medicinal value of such products and to include this knowledge in strategies of conservation and management of animal resources. We hope that this information will be helpful in further research in the field of ethnozoology, ethnopharmacology and biodiversity conservation point of view.

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## REFERENCES

- Ali S (1996) The book of Indian Birds, Bombay: Bombay Natural History Society.
- Angelletti LR, Agrimi CC, French D, Mariani-Contantini R(1992) Healing ritual and sacred serpents. *Lancet*, 340: 223-225.
- Benarjee G, Srikanth K, Ramu G, Narasimha Ramulu, K(2010) Ethnozoological study in a tropical wildlife sanctuary of Eturanagaram in the Warangal district, Andhra Pradesh. *Indian Journal of Traditional knowledge*. 9 (4): 701-704.
- Jamir NS and Lal P (2005) Ethnozoological practices among Naga tribes. *Indian Journal of Traditional knowledge*, 4(1): 100-104.
- Jaroli DP, Mahawar MM, Vyas N (2010) An ethnozoological study in the adjoining areas of Mount Abu wildlife Sanctuary, India, *Journal of Ethnobiology and Ethnomedicine*, 6(6):1-8.
- Judith H (2005) Information resources on Human-Animal Relationships Past and Present. AWIC (Animal Welfare Information Center). *Resource Series*, 30.
- Kakati LN, Bendang AO, Doulo V (2006) Indigenous knowledge of zootherapeutic use of Vertebrate origin by the Ao Tribe of Nagaland. *Journal of Human Ecology*, 19(3):163-167.
- Lohani U (2011) Traditional uses of animals among Jirels of Central Nepal. *Ethno Med* 8 (2): 115-124.
- Mahawar MM, Jaroli DP (2007) Traditional knowledge on zootherapeutic uses by the Saharia tribes of Rajasthan, India. *Journal of ethnobiology and ethnomedicine*, 3(25): 3-25.
- Martin GJ (1995) Ethnobotany. Chapman and Hall, London.
- Mishra N, Raut SD, Panda T (2011) Ethnozoological studies and medicinal values of simlipal Biosphere Reserve, Orissa, India.
- MoEF (1994) Biodiversity country studies, strategies and action plans. Ministry of Environment and forest, Govt of India.
- Padmanabhan P, Sujana KA (2008) Animal products in traditional medicine from Attappady hills of Western Ghat. *Indian Journal of Traditional knowledge*, 7(2): 326-329.
- Prater SH (1996) The Book of Indian Animals. Bombay. Bombay Natural History Society.
- Rosner F (1992) Pigeons as a remedy (segulah) for jaundice, New York State, *Journal of Medicine*, 92(5): 189-192.
- Umnikrishnan PM (1998) Animals in Ayurveda, *Amruth*, 1(3):1-23.

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