

Birhor's are custodian of vast Traditional Botanical knowledge; needs to be documented

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Abstract

According to the World Health Organization about 65 percent of Indians, especially those from rural areas, are dependent on traditional medicine for treating diseases. However, large-scale habitat destruction is severely reducing medicinal plant availability. Birhors—the endangered tribe are curators of vast traditional knowledge and their acquaintances with respect of plants are significant.

Their knowledge about plants are not only limited to their collection and use but they know about their specific characteristics including toxicity, palatability, medicinal use, their spatial distribution seasonal availability as well as ecological relationship. Besides these they have vast knowledge of some of the under exploited protein rich plants and their uses as supplementary food.

But their knowledge is not documented yet. Verbally they used to pass their knowledge to their next generations.

In this paper, attempt has been made to preserve their traditional botanical knowledge. In view of the short life expectancy and rapidly diminishing populations of Birhors earliest documentation of their knowledge is vital; needs to be authenticated and bring it into common practice. This can be open a new panorama in plant research as well herbal medicines, which is much safer, cheaper and eco-friendly.

Key Words: Birhor, Traditional Knowledge, Botanical Knowledge, Herbs and Medicines

Introduction

Birhor ('Bir' means Forest and 'Hor' means Man or the man of Forest) a forest tribe basically nomadic, hunters and food collectors and their day to day needs were totally depends upon the forest including Food, Medicines, Shelters and other household purposes. They used plant's roots, barks, fruits, seeds and flowers as medicines are typical and relatively new and their further scientific conformation is essential.

The knowledge of Birhor's of the medicinal value of the plants attained significance in recent times due to establishment of several therapeutic values of these products as well as using these products in modern medicine

Research Area

Different tribal villages in the hilly terrain of Dhanbad, Giridih and Hazaribagh districts of Jharkhand.

Objectives

- # How to join them with the main stream of development as well as society.
- # How to solve their various issues.
- # To draw attention of the government towards their traditional knowledge which needs to be documented earliest.

Methods of Research

Research has been carried out by personal visit and observations, questionnaire, interviews and conversations with different tribal people in different villages in the hilly terrain in Jharkhand.

Besides the tribal people's opinion and comments, many earlier research reports, as well as views of educationalists, professors, head of departments of the concern subjects, particularly of anthropologists have been taken into consideration during this study and research.

A literature survey was carried out on the study area before the field work started. Most of the works were based on field study. The present work is the outcome of extensive study and survey of different tribal villages. During field work, interviews were conducted.

Besides in-depth study the contents had been taken from relevant books, articles, journals and websites. The Method used is analytical and descriptive. Data from both primary and secondary sources have been taken.

Study and Findings

Under the study on the ethno medicinal plants of was carried out through questionnaire, personal interviews and conversation from several Birhors in the hilly terrain of Jharkhand, Ajodhya hill and its' surrounding birhor tribal villages in West Bengal; found that the major plant part used by birhor was constituted by roots followed by leaves and stem. Gastrointestinal ailments, Fever, cough and cold related ailments, skin diseases and sexually transmitted diseases were the four major disorders treated by the use of medicinal plants in this area. More than ten plants were found to be useful in the treatment of gastrointestinal ailments, fever, cough and cold related ailments, skin diseases and sexually transmitted diseases respectively.

Now its' too urgent that government should take every possible steps to conserve the plants used by Birhors which can be open new panorama in plant research as well herbal medicines, which is much more safe, cheaper and eco-friendly.

According to the World Health Organization about 65 percent of Indians, especially those from rural areas, are dependent on traditional medicine for treating diseases. However, large-scale habitat destruction is severely reducing medicinal plant availability.

This is one of the reasons why the number of traditional healers is declining in almost all rural communities. Youth belonging to families of traditional healers are rarely interested to opt for their ancestral profession. This reluctance is also an important reason for loss of traditional knowledge.



Its' worth mentioning that, use of plant based drugs and chemicals for curing various ailments and personal adornment is as old as human civilization. In India, the sacred Vedas dating back between 3500 B.C and 800 B.C give many references of medicinal plants.

Plants and plant-based medicaments are the basis of many of the modern pharmaceuticals we used today for our various ailments. At one time, nearly all medicines were derived from biological resources.

State of the Environment Report- 2001, reveals that even today about 67 to 70 percent of modern medicines are derived from natural products.

In India, almost 95 percent of the prescriptions are plant-based in the traditional systems of Unani, Ayurveda, Homoeopathy and Siddha. Due to lack of literacy, their knowledge on plants developed often at the cost of their dear life through centuries old experience could not be perfectly documented and it had rather descended from one generation to another as a domestic cultural heritage.

Population explosion is a global threat and several methods of birth control have been devised by doctors and scientific to prevent unwanted pregnancies.

The women of the Birhor tribe use plant based oral contraceptives as they have inherited this knowledge from their ancestors. Plant-based contraceptives have no side effects and are cost effective and easily available.

The plant part most used by Birhors is the root followed by leaves and stem. gunja, custard apple, sharifa, semal, palash, pomegranate, carrot, papaya and neem are some of the plants used by the women for the purpose of birth control.

Elaborating on the use of plants and herbs as contraceptives, Karmi Birhorin, a traditional medicine practitioner from Demotand, said she uses one gram of gunja seed powder in milk boiled for 30 minutes. As many as 200 ml of this mixture, taken twice daily during a menstrual cycle, acts as a contraceptive.

The unripe fruit of custard apple taken raw with warm water also acts as a contraceptive, she said. Semal flower is boiled with black pepper and the mixture is taken orally to prevent pregnancies, Sukar Birhor of Chalkari village in Dhanbad district said.

"The petals of the palash flower boiled in cow milk for one hour taken thrice daily during the menstrual cycle acts as a contraceptive. The pomegranate is also used as anti-fertility agent when taken in boiled form with water," Sukar Birhor said.

A decoction of carrot also prevents pregnancies, Sushma Birhorin of Kalichattan said.

"The bark of the male plant root of papaya cooked with catfish prevents pregnancy. To restore fertility, we carry out the same procedure but with the female papaya plant," Sushma said. The leaves, fruits, bark and other parts of the neem plant are also used as contraceptive, she said.

Besides, Birhors use various plants parts for gastrointestinal ailments, Fever, cough and cold, skin diseases and sexually transmitted diseases are the four major disorders treated by the use of medicinal plants in this area. More than ten plants were found to be useful in the treatment of these ailments.

Birhors are curators of vast traditional knowledge and their acquaintance with respect to plants is significant. Their knowledge of plants is not only limited to their collection and use. They also know about their specific characteristics such as toxicity, palatability, medicinal use, spatial distribution, seasonal availability as well as ecological relationship. Besides, they have a vast knowledge of some of the under-exploited protein rich plants and their uses as supplementary food.

During a study, it was found that primitive tribal groups who still subsist on hunting and food gathering or are in the primitive agricultural stage and prefer to remain in the forest are repositories of ancient knowledge of herbal remedies. Many plants are reported to have sterilising, contraceptive and abortion facilitating properties.

"Plants that have contraceptive and abortion facilitating properties may act by rapid expelling the fertilised ova from the fallopian tubes, inhibition of implantation due to a disturbance in oestrogen and progesterone balance and causing foetal abortion perhaps due to lack of supply of nutrients to the uterus and the embryo and also on the male side through affecting sperm count," Dr PK Mishra, head of botany department in VBU, said.

"A 200-billion dollar business of the crude drug is a temptation to the western world and proper documentation of plants is an essential need," Mishra said.

Birhors have been using various medicinal herbs in the treatment of their many diseases which are as varied as their culture. But all their detailed uses have not been documented. It is important that before their oral wisdom about plants and other natural resources get lost as a result of industrialisation and urbanisation, they should be documented in scientific literature after authentication.

Though they use large numbers of herbs in remedies, practically nothing about these is known to the outside world. The remedies applicable to various diseases are quite interesting. The tribals have hit upon some herb in some way or other through experience and found it efficacious. They then tried the same for complaints other than those originally applied to and have, in this way, been guided entirely by experience.

It's of urgent importance that the Government takes every possible step to conserve the knowledge used by Birhors which can be open new panorama in plant research and herbal medicine and is a safer, cheaper and eco-friendly alternative to the people at large.

Ethnobotanical uses by Birhor tribe's --in Jharkhand,

Custard apple or Sharifa (Annonosqomoso)

Parts Used – Fruits

Medicinal Uses – As contraceptive: 2 to 5 unripe fruit taken raw with warm water act as contraceptive.

Semal (Bombax Ceiba)

Parts Used – Flower

Medicinal Uses – As contraceptive: Flower is boiled with black pepper and the mixture are orally taken to prevent pregnancy.

Palash (Buteo monospermo)

Parts Used – Fruit

Medicinal Uses – As contraceptive : Petals are boiled in cow milk for one hour. The mixture taken thrice daily menstrual cycle acts as contraceptive.

Pomegranate or Anar (Punicagmnotum Punicaceae)

Parts Used – fruit

Medicinal Uses – As anti fertility agent: Used as anti fertility agent when it after boiled with water

Carrot or Gaajar (Daucus carota)

Parts Used – Fruit

Medicinal Uses – As anti fertility agent : Tribal take its decoction (boiled with water) to prevent pregnancy.

Papaya or Papita (Carica Papaya)

Parts Used – Bark

Medicinal Uses – As anti fertility agent : Peel of the bark of male plant root and sizeable fruit Xylophia aethiopia, little oil of Elais guineensis and cook with cat fish and taken orally to prevent pregnancy.

While to restore fertility, carry out the above but with female plant.

Neem (Azadirachta Indica)

Parts Used – Bark

Medicinal Uses – As anti fertility agent : Leaves, fruits, bark and other parts are used as contraceptive.

Gunja (*Abrus precatorius*)

Parts Used – fruit

Medicinal Uses – As anti fertility agent : Wash whole and boil in water obtained from fermented milled fruits of Zeamys. Take in small glass or cups three times daily before intercourse works as contraceptive.

Rati, Gunja (*Abrus precatorius*)

Parts Used - seeds

Medicinal Uses – For anti-fertility: White seeds kept in unboiled cow milk for the period of over night and the seed is given to woman in the morning at the end of menstruation cycle for preventing conception.

Maghua, Ata, Boror (*Annona squamosa*)

Parts Used - Dried root powder

Medicinal Uses - For abortion of pregnancy: Dried root powder (5gm) is taken once in morning for five days by women for abortion of 3 to 4 months of pregnancy.

Rajamaghua, Ramphala, Barhial (*Annona reticulata*)

Parts Used - Seed powder

Medicinal Uses - For spoiling of pregnancy: A mixture of seed powder with black pepper (*Piper nigrum*) (about 3gm) is prescribed for spoiling of pregnancy up to 3-4 months duration.

Agara, Agora, Kantakusum (*Argemone mexicana*)

Parts Used: Leaf.

Medicinal Uses - For Leucoderma: Leaf juice is taken by women twice a day for fifteen days as a cure for leucoderma.

Puruni saga (*Boerhavia diffusa*)

Parts used –Whole plant

Medicinal Uses - For the treatment of Leucorrhoea: Decoction of plant (15ml) is given once a day in the early morning for fifteen days for the treatment of Leucorrhoea and dried plant powder is smoked as cigarette once a day for the treatment of ashma.

Tala, (Borassus flabellifer)

Parts used - Male inflorescence

Medicinal Uses - For contraceptive: Ash (after burning of male inflorescence) with powder of black peppers (*Piper longum*) & cow milk in the ratio of 2:1:1, is prescribed to women as contraceptive.

Solaganthi, Sanaghar podia (Borreria articularis)

Parts used - Whole plant and Root

Medicinal Uses - For menstrual disorder: For the regulation of excessive menstrual flow root paste (15gm) with hot water is taken by women in empty stomach just starting of their periods.

Semulo, Simili (Bombax ceiba)

Parts used - Fleshy roots

Medicinal Uses - For menstrual disorders: Pasty mass of fleshy roots of young plant (1 gm) mixed with unboiled cow milk (2ml) is taken once a day in the early morning for a week by women to regulate irregular menstruation.

Arakha, Patladhudha, Parkha (Calotropis gigantean)

Parts used - Root

Medicinal Uses - For Leucorrhoea: Decoction of root (3ml) with Paste of *Piper longum* (1gm) is given to women in empty stomach continuously ten days for the treatment of Leucorrhoea.

Barun, Varuna, Pitmaiel (Crateva nurvala)

Parts used - Stem bark

Medicinal Uses - For contraceptive: Fresh juice of stem bark (3ml) mixed with seed powder of *Piper nigrum* (1gm) is taken by women in the seventh days of menstrual cycle as a contraceptive.

Rai, Rai-daru (Dillenia aurea)

Parts Used - Stem bark

Medicinal Uses - Gaining of vitality after child birth: Extract of stem bark (10ml) is taken once a day for two week in empty stomach for restoration of health after child birth.

Rai, Aghai (*Dillenia pentagyna*)

Parts Used - Stem bark

Medicinal Uses - For easy delivery: Midwives (Dhai) of ethnic group uses tree gum for easy delivery purpose.

Panidimiri, Demburu, Kharsen (*Ficus hispida*)

Parts Used - Fruit

Medicinal Uses - For Milk secretion: Boiled green fruits given to mother as a galactagogue for better milk.

Hati-sura (*Heliotropium indicum*)

Parts Used - Root

Medicinal Uses - For anemia: Decoction of root (10ml) with honey (2ml) is taken as vitamin for iron deficiency by woman against anemia during pregnancy period.

Anantamul (*Hemidesmus indicus*)

Parts Used - Root

Medicinal Uses - For leucoderma: Root paste (about 10gm) is taken in empty stomach continuously seven days for the treatment of leucoderma.

Parijat, Mondaro, Mandar (*Hibiscus rosa-sinensis*)

Parts Used - Stem bark

Medicinal Uses - For Contraceptive: Stem bark paste (15gm) is given to woman continuously five days for causing abortion and mixture of pasty mass of flower buds (3gm) with rust of iron (2gm) and country liquor (2ml) is taken by women at the days of menstruation as a contraceptive.

Padam, Ranga padam (*Nelumbo nucifera*)

Parts Used - Rhizome.

Medicinal Uses - For white discharge: Decoction of rhizomes of white flowered plant (pundi-salukid,) about 15 ml is taken by women in empty stomach for fifteen days, as a cure for white discharge.

Phonphana, Phampan (*Oroxylum indicum*)

Parts Used - Stem bark

Medicinal Uses - For Menorrhagia: Decoction of stem bark (2ml) with common salt (1gm) is prescribed twice a day for one month against menorrhagia of women.

Gosingi, Jalapipla (*Phyla nodiflora*)

Parts Used - Root

Medicinal Uses - For promoting Sexual desire: Decoction of root (3ml) with unboiled egg (2mg) is given to women to promote sexual desire.

Kuchila, Gorumar (*Strychnos nux-vomica*)

Parts Used - Stem

Medicinal Uses - For Leucoderma: Pasty mass of stem (3gm) with Kusum (schleichera oleosa) Seed oil (1ml) is prescribed twice a day after food for ten days continuously for the treatment of Leucoderma.

Bhadara, Bahada, Behra (*Terminalia bellirica*)

Parts Used - Stem bark

Medicinal Uses - For Leucoderma: Stem bark paste (2gm) is prescribed to women with hot water twice a day after food continuously ten days as a cure for leucoderma.

Bano-kuthi, Gileri, Kulathio, (*Tephrosia purpurea*)

Parts Used - Leaf

Medicinal Uses - For post natal complications: Decoction of leaf (5ml) mixed with honey (2ml) given to women twice a day continuously for one month against post natal complications.

Dhai, Dhatuki (*Woodfordia fruticosa*)

Parts Used - Dried flowers

Medicinal Uses - For leucorrhoea: Dried flower powder (5gm) with honey (1ml) is given to women once a day continuously one month for the treatment of leucorrhoea.

Borokoli, Bodokoli (Zizyphus mauritiana)

Parts Used - Stem bark

Medicinal Uses - For relieve of abdominal pain: Stem bark paste is taken twice a day after food as a cure for abdominal pain during pregnancy.

Chitwair – In ordinary fever root of Chitwair is ground with water and the decoction is administrated orally. For curing stomach pain the root of the chitwair is boiled in one liter of water till its volume is reduced to half and the decoction is orally administrated. It also stimulated digestion and promote appetite.

Satawar – In heat fever root of satawar and root of patri are grounded with water and administrated orally. Birhors' also used it in Uraemia (blood in urine).

Parhi – In malaria fever root is ground with water and the decoction is administrated orally. In muscular and stomach pain root is grounded with water an past is applied

Dudhia – In body ace, fever and blood dysentery the dried root powder is taken with water. Root powder is also useful in removing worms in children. Though, the latex of the herb promotes formation and flow of milk in women.

Kalmegh - All parts of the plant above the ground are employed in preparing the medicinal decoction which is used in fever, worms, dysentery and gastritis.

Somraj – The seed of Somraj are used as a febrifuge and the leaves as vomitive. It is valuable medicine use ford destroying worm (antihelmintic).

Koraia – the pest prepared by the grinding the roots and bark with water which is massage downwards over the affected of swollen parts of the body.

Brihmi – Used for curing leprosy. The entire plant parts are boiled in water and the decoction given to the patients.

Besides many more these are few preparations that are commonly prescribed to birhor people by their practitioners. Study found that the traditional medicine practitioners collect plant samples from the forests.

Some of these plants have been reported to be poisonous and they may act as purgative. The pharmacognostic research into these plants is strongly recommended in order to establish their claims.

The use of plant resources as remedies is probably as ancient as man himself. The aforesaid uses are the ones practiced in day-to-day life of tribals living in forests. The use of traditional medicine for Gynecological disorders is widespread in this region with higher percentage of the population relying on it.

This is because of lack of modern medical facilities available in this region and the expensive medicare system which these tribal people are unable to afford.

The study of modern herbalism (phytotherapy) on contraception and abortion is rapidly evolving throughout the world. The curative parts of a plant are not simply its wood, stem or its leaves but the chemical compounds it produces.

Meanwhile the claims of the traditional medicine practitioners need to be investigated by subjecting these plants to further pharmacognostic screening and government support is strongly solicited.

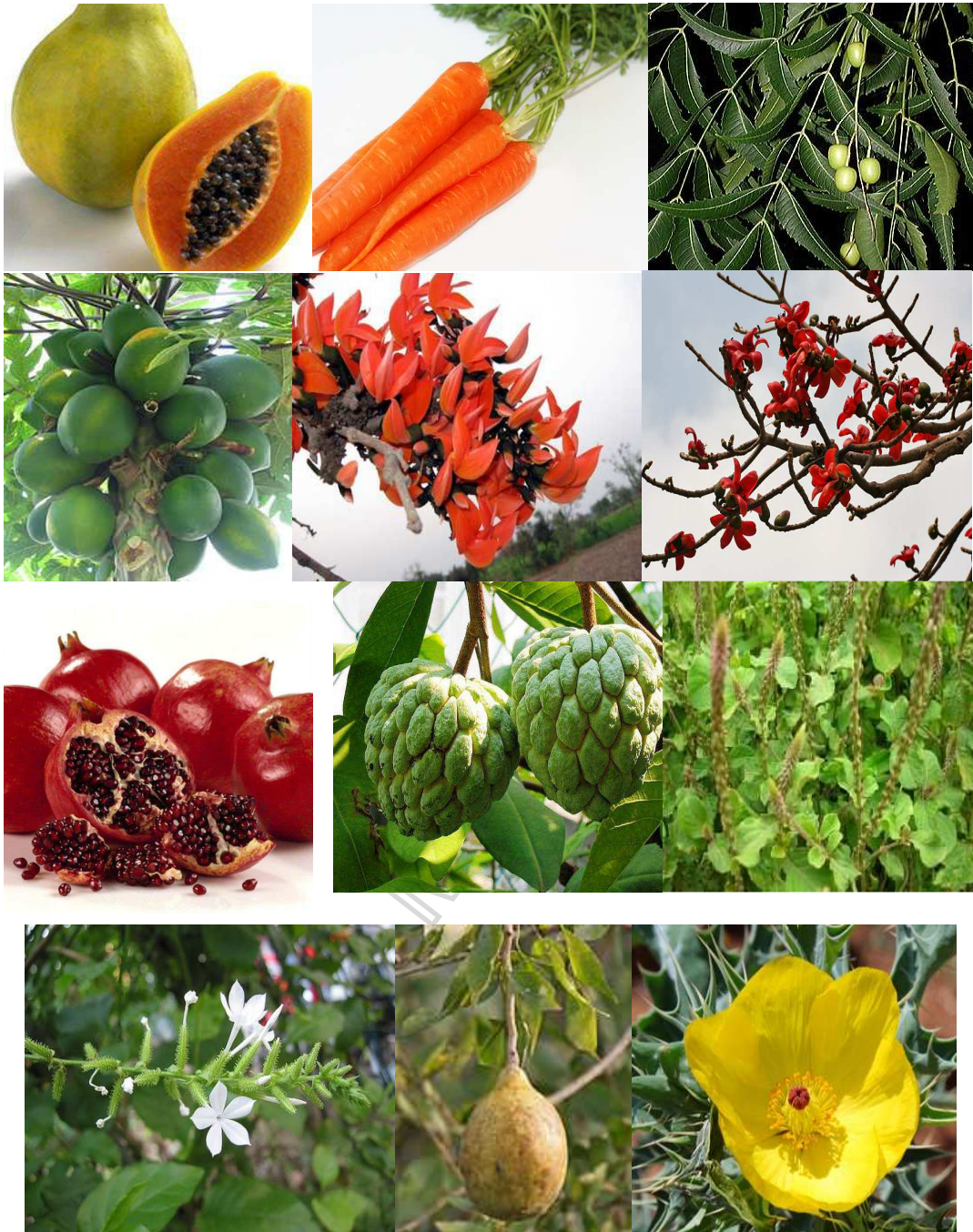
This ethnobotanical study based on questionnaires, administered on both the practitioners as well as users in tribal localities in the hilly terrains across the Jharkhand, WestBengal, Odisha and Chhatisghar.

During the study several tribal people agreed to provide answer to questions raised in the questionnaire, some of which were answered correctly and multiple answers were given by others.

Some of the questions asked were-sex of traditional medicine practitioners, experience in trade, source of knowledge, age of users or customers, solvent for preparation, plant names used source of plant materials, method of preparation and their application methods.

Though the use of the plant species must be verified by further scientific experimentation and this rich folklore can be utilized in drug discovery and herbal therapy. Therefore, the plants require a thorough investigation of their bioactive compounds for the efficacy reported.

During study it is also evident that a particular medicinal plant used by one group to treat a particular ailment may not be used by another group for the same purpose. These formulations used by the tribals need further clinical trials to test their efficacy and also to develop new drugs based on herbal medicine for effective remedy of different ailments.



CONCLUSION

Birhors a primitive tribe, India's poorest people live in the richest mining areas- their conditions continue to be the weakest. Mining has made the government richer but the people of the region poorer. Usually the first targets of land grab, displacement or development in the manse for globalization, urbanization, industrialization and mining tribal people in this country.

The degradation of the forest cover has uprooted the Birhors from their traditional sources of livelihood and brought in instability in their economic activities. They have been continuously moving in and out of their traditional economic activities.

Unless the tribal assert themselves in socio-political life their voice would be crushed. There should be a plan to help the birhor people fight for their livelihood, culture, languages, customs, traditions and values.

Now tribal politicians failed to influence the policies that went against the interest of the tribes. Even after enactment of Panchayats (Extension to Scheduled Areas) Act, 1996 the tribes were not getting its benefits due to lack of awareness about the policies and the programmes.

The problems of tribes are manifold. Health is one of the major ones among these. The risk is increasing day-by-day with extensive deforestation, frequent climatic calamities and the change in the traditional economy.

Everyone should take an oath work for bringing unity among different tribal groups and fight for their common goal of protecting their livelihood, culture, traditions, language and values.

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