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THE BONDO TREE PRESS AND ITS LINKS

By K. P. CHATTOPADHYAY

In a paper published thirty years ago, the present writer pointed out the association of a primitive oil press used in Nepal and an early culture stream, prior to the Vedic culture in India. The oil press described in use in Nepal at an early period consisted of two planks, fitted on two supports. The crushed seed, after roasting, was packed in split bamboo baskets and placed between the planks. The baskets were then pressed hard by leverage between the planks. It was suggested that similar plank presses were to be expected in other areas on the margin of the advanced culture areas inhabited by Hindus.[1]

The occurrence of the plank press was reported later by the author and others[2] among Hos, Oraons, Kharias and Santals of Chota Nagpore and Orissa, Korkus and Gonds of Central Province and Koyas of Godaveri district. An even more primitive type of oil press was described by the writer in detail for Santals of Bengal (Plate I, fig. 1) and Koches of Assam.[3] Instead of a wooden post to support and keep fixed one end of the pair of planks of the press, the trunk of a living tree is used. A hole is cut in it at about two feet from the ground. A thick, shaped block of wood is placed at the foot of the tree. On this are put the fibre baskets packed with crushed and roasted mustard seed (Koch) or mohul kernels (Santals). On it is put a short upper plank and then pressure is applied by a long pole, and sometimes with the help of crossbars. Sometimes, the pressure is applied simply by the operator sitting on the pole with other members of his family. This type of tree press, it was pointed out in the earlier paper, occurs in Nicobar. It was reported also from a village in Bengal, on the border of Hill Tipperah.

The tree press was found in purely Santal villages in Muruda Pargana, Mayurbhanj. These had the tree press only. The plank press was common in Santal villages which had a Hindu hamlet. In the Jamtara subdivision of Santal Parganas and in Jhargram subdivision of Midnapore, the tree press had been known one or two generations earlier but had been replaced by the plank press. It was noted by the writer that 'the geographical distribution of the tree press is limited within the bounds of the area to which the Austric speaking tribes spread in India; although in two of the places (in Assam and Bengal), where the tree press is found, such tribes have now disappeared'. It was further concluded on technological evidence that 'the plank press assumed its present form' among non-Austric speakers although its basis was the tree press.

In May 1952 the writer made a short tour in Koraput district and visited villages near Jeypore as well as a few miles away from Koraput in Orissa on the Bori road leading from Koraput. Distant areas like Maitilli, Malkangiri, Naorangpur and Machkund were also visited. The writer came across a tree press exactly of the same type as used by Santals (the simple type) and Koches, in the village Khemaguru, inhabited by Bondas or Bondos, at the base of the Bondo Hills. The Bondo speech is of Austric family. The photo shows clearly the identical construction of the press (Plate I, fig. 2). The tree in this case was a tamarind tree. The press is located in the compound of Gasi Nai, the Naeko of the village, and as among Santals is common to the village. Mohul kernels are crushed and roasted and then packed in somewhat long cylindrical baskets of fibre. The Forest Officer

kindly identified the material as strips of bark of Wahenia. A similar tree press was said to be in existence in Raswara village, ten miles away, towards Balimela. Other tree presses were reported from Koya villages, in Sardagura and Gondipalle. The Bondo informant referred to the tree press as Tela-siri while the Koya referred to it as Gargute. A plank press of the Santal type was observed in Malkangiri in the house of Pandu Mandla, of Rona tribe. Here the kernel was being pounded in *dhenki* (husking lever) instead of in a pestle; it was then roasted in earthen pots and packed in cylindrical fibre baskets.

Near Jeypore the plank press was found in the mixed village of Maliguda. On Naorangpur side, the plank press was reported from the villages of Paraligura, three miles from Naorangpur, and further away at Pappahandy, in the house of a Kewat. It was also reported from outlying villages on Bori side.

Recently two research scholars of the Department of Anthropology, University of Calcutta, working under me have reported the occurrence of the tree and plank press in other areas. One of them, G. Chattopadhyay, found the tree press among Murias in Bastar district. A sketch of the same is given (Fig. 1). Another research scholar, S. Navlakha,

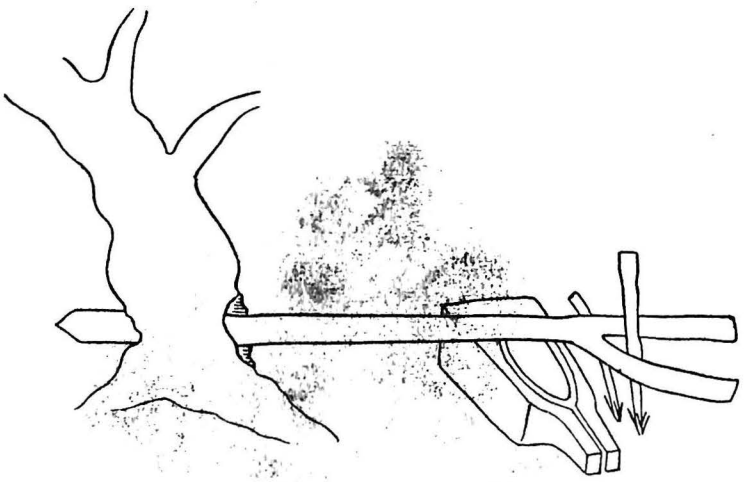

FIG. 1.

Bastar Tree Press.

observed a new type of plank press among Bhils. As the construction is very different from other plank presses, a full description with sketches is given in a separate short note by Navlakha along with this paper.[4] Wijesekara had mentioned in his work on Ceylon[5] an oil press where oil is squeezed between two planks. A. Jayasundara, an Honours student in my department who comes from Ceylon, carefully studied at my request the structure of the oil press used even now among the peasants in Kandy area and has described this tree press. This is also published as a separate note along with this paper.[6] The oil mill prevalent in peninsular India and adjacent areas is also found in Ceylon. Wijesekara states: 'A stone or wooden mortar is planted very firmly on the ground, allowing a short neck

at the bottom to appear above the ground. A pestle of wood is placed in the mortar. A pair of bulls or a man carries the yoke round the mortar. The oil is squeezed out through the opening at the bottom of the chekku on a side'. Obviously the hole is in the wooden mortar. The machine is said to be for extracting coconut oil. It is however added—'But the villagers prefer hand-made coconut oil'.

A distribution of the tree press and plank press on the map of India printed herewith (Map 1), showing the areas of Austric speech, clearly brings out the association. It should be added that the occurrence of 'abrupt tones' in the Newar language is considered to be due to the influence of contact with Austric (Kherwari family probably) speech, which has been submerged. The Newars have been shown by the writer, in the paper already referred to, to have derived their culture from pre-Vedic cultured immigrants. It represents an area of culture on the margin of the settlements of Vedic immigrants. Upper Assam is also such an area. The tribal areas enumerated also fall into this category. On the hypothesis of origin of the plank press put forward, the tree press should occur among primitive tribals in Nepal. Unfortunately no field work has been done among them. Even in tribal areas where work has been done, such particular items of material culture are often overlooked as with regard to Bondos, about whom we have a monograph, without any mention of the tree press found by me among them. The place of occurrence of the Bhil plank press falls outside the limits of Austric speech in India. But it should be remembered that the Bhils have adopted Indo-Aryan speech as a foreign tongue.[7]

Outside India, the tree press occurs in Ceylon, among the Sinhalese peasantry who are not a tribal folk. Both the tree press and the plank press occur as the traditional implements for expressing oil from oil seeds in Viet Nam where a cultured folk speaking an Austric language live. In outlying villages in South China, however, only a plank press is used or was used recently to extract oil.* A similar but more elaborate press† is employed to squeeze out milk of soya bean (Fig. 2).

The Kol word for oil is Sunum. It occurs as Senum among the Sakai of the Central group and as Sinum among the Orang Tanjang in South Selangkor.[8]

The Indo-Aryan term Sneham which is of the same root as Schnee in German and Snow in English was applied to oils and fats in Sanskrit quite early. But the earlier sense was moisture. The extension of the term to oils and fats seems to have been of later date. The Dravidian term for oil is Neyi, which refers also to fats. Butter is however referred to as Ven-ney, i.e. white grease or ghee. In Gondi the term pal is used to denote milk and the term for butter or ghee is pal-ni, the term ni meaning oil. This use of a descriptive term indicates that oil was known earlier in Dravidian and butter came to be made later. The Nicobarese term for oil from coconut is Ngai(j), Ngai(ch) when boiled out and Mayai(j), Mayai(ch) when squeezed out. The Polynesian term for oil is Niu.[9] The Viet Nam term for oil is 'DAU' and for the tree press and plank press, respectively, 'Kay go ep dāu' and 'Van ep dau'. The word 'Kay' means tree, the term 'Ep'=press, 'Go'=wood and 'Van'=plank.

Oil pressing is done in a press which the Santals refer to as Sunum Pat. Now this term Pat is not taken from Indo-Aryan. To press is described

* For the information about Viet Nam I have to thank Prof. Hach of the University of Saigon, and Mr. Bac, advocate, Saigon. For the information about China I have to thank my friends in the Chinese Consulate.

† After sketch No. 10 in 'Institute Indochinois pour l'etude de l'homme, 1943' in the article 'Petites et grandes industries chinoises a Shanghai' by J. Malval.

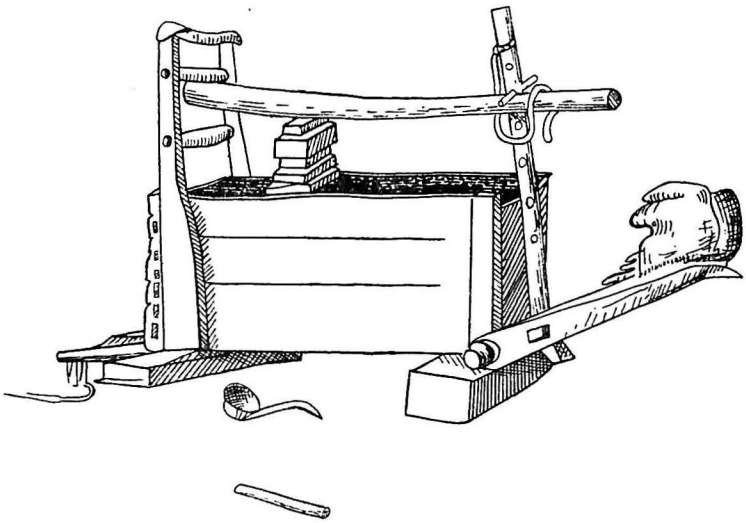

FIG. 2.

by the word Pat in Mon, Pat in Stieng and Pit in Bahnar.[8] The Sre are a folk living in the 'high plateau of Annam . . . more or less primitive, strangers to the yellow race and occupying the country anterior to them'. Glottal occlusion is a character of their language. In the language of this people of an early stratum in this area, the word Pat describes a 'mouvement complexe produit d'une traction, torsion, pression', i.e. a complex movement, the product of traction, torsion and pressure'.[10] This is what occurs in the primitive oil presses described by the present writer (in the primitive oil presses of Santals, Hos, Korkus and others).

It should be evident that the term for oil and oil press as found among speakers of the Austric language cannot have come from Dravidian. The term for the press has also not come from Dravidian or Indo-Aryan. It is of interest to note that the term Salmi (or variant of the word) used for the oil pressing caste of Newars of Nepal, linked with an early culture, shows resemblance with the word Sunum and its variant Sulum used for oil among Santals. Since the tree press is found among the Ceylonese peasantry, and there was no oil pressing among the only tribal folk of Ceylon, the Veddas, it has to be concluded that the ancestors of these peasants were the people who brought this oil press to Ceylon. But tradition and physique link these early comers to Ceylon with people of the Indo-Aryan speaking tracts of India. Among these Indo-Aryan speakers, the peasantry do not employ the tree press. It had however survived in an outlying eastern area of Bengal and occurs in tribal areas among Austric speakers and tribes in contact with them. A somewhat improved type of it, a plank press was found in Nepal in association with what has been considered to be a pre-Vedic culture there. In the tribal areas of Chota Nagpore, Madhya Pradesh and also Orissa, this improved beam or plank press is not found in purely Santal villages but in those in close contact with Hindu peasantry or semi-Hinduized other tribes. The present writer has indicated reasons for concluding that the plank press has evolved from the tree press. Further when the oil mill with pestle and mortar, wherein seed is crushed by rotary motion, was invented by some other people, the

original type was without a hole to drain the oil produced in the mortar. The present writer suggested that the hole in the mortar came from influence of the draining device in the plank press. The clumsier holeless mill was continued by people who were of the culture of the inventors of the rotary oil mill due to conservatism while the people who used the plank press modified and improved it by adding the drainage hole. The claim of the users of the less efficient mill to be of higher status than those who added the hole fits in with such a view. It may be added that the latter people roast the pounded seed before charging the mortar, just like the users of the plank press.

Now the people who went to Ceylon from India must have been seafaring, since they did not cross over from the tip of the peninsula but from areas further north, probably from the Sind or Gujarat area or from the coast of Bengal. Leaving the exact locality of centre of migration open, it is evident that seaworthy boats and knowledge of seamanship must have been present in such a culture. It has been pointed out in the earlier paper that the leverage employed in pressing the planks together to crush the seeds to extract the oil is comparable to the leverage used in propelling a boat. This agrees with the knowledge of seamanship and of boats needed for migration. But such migration must have occurred prior to introduction of knowledge of the oil mill which in its turn depended on knowledge of machines capable of rotary motion, i.e. of wheels, wheel-made pottery and similar implements. Now the rotary oil mill originated, it has been shown by the present writer in the same earlier paper, among the advanced Dravidian speaking people of South India. If the tree press had also been invented by the ancestors of these Dravidians and they had spread it to the different areas like Assam, Nicobar, Chota Nagpore and Ceylon, the more efficient oil mill would have been adopted by the users of the tree press long ago. The improvement about drainage hole would also have occurred among the Dravidians and no question arisen about higher status of users of the huge and clumsy holeless mill.

The tradition of origin of Santals as narrated by them makes it clear that at first they had no sibs or sib exogamy and were a hunting folk. Growing of plant food by shifting cultivation, the making of the fermented drink from such grain and sib formation and exogamy are associated in their traditions and hence came together to Santals. Production of oil seeds and of oil could have come only in this second stage, if not later. It is known that the Ceylonese peasantry also practise shifting cultivation. In this Chena cultivation as it is termed, 'thick forests are selected as a chena . . . The trees are felled and the jungle is cleared . . . Good timber is removed for sale. When the leaves have dried, the clearing is set on fire . . . The burnt out area is fenced' with timber palisades to keep out large wild animals. 'A watch hut is erected within the area, as watching the chena constitutes the most exacting task of this method of cultivation'. In another publication on Ceylon it is stated that after the land is 'burned' and fenced roughly, it is cleared of leaves and small roots, etc., and the seed is then thrown on and scraped in with 'udalla' which is the Ceylon term for hoe.[11] Buffaloes are used for plough cultivation. Irrigation with ridge boundaries of fields in plains with plough cultivation, and slash and burn type with hoe cultivation in hills is the rule. The description noted can be applied to the methods of shifting cultivation with hoe traditionally practised by various tribes in India. The difference in the case of Ceylon is that chena cultivation as well as settled agriculture is done by the Kandyan peasantry where the older culture of Ceylon survived, little influenced by the European occupation of the maritime area. This again is in agreement with

the hypothesis that the ancestors of the Ceylonese proper were of the same culture as that which in India spread knowledge of shifting cultivation and of the tree press among tribal folk in India. A more detailed discussion of the further implications of these conclusions and data will be published in a separate paper.

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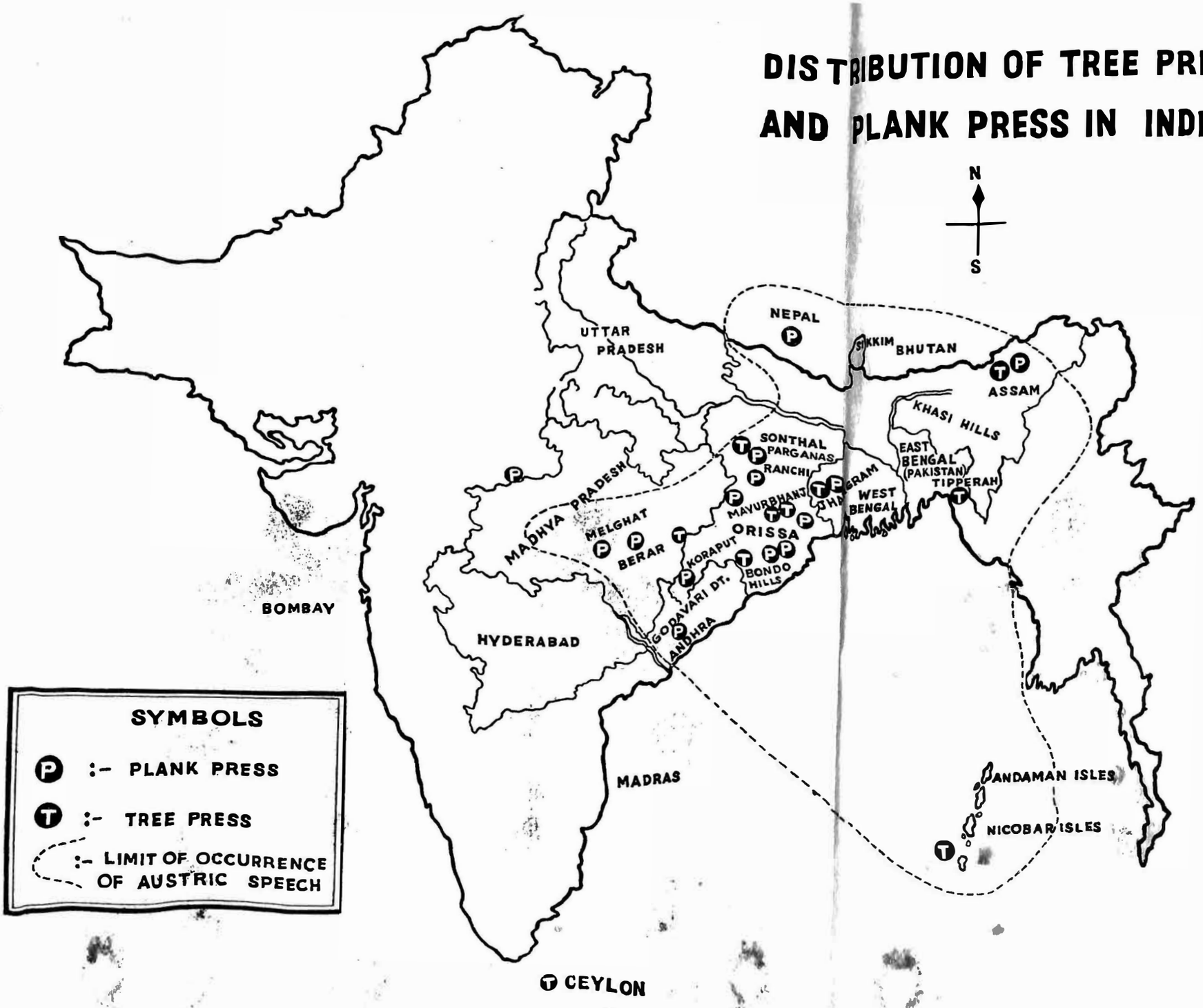
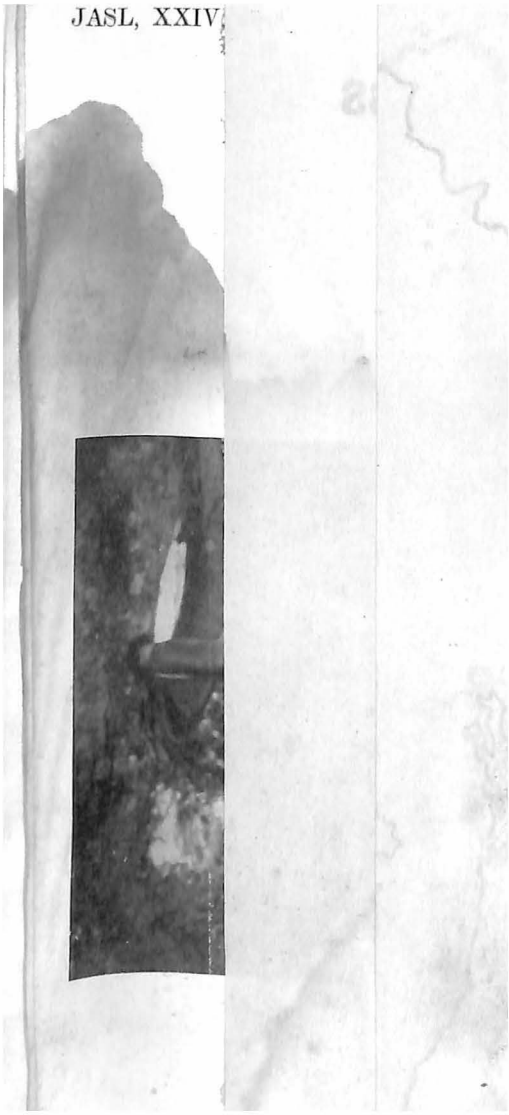
FIG. 1.

FIG. 2.

FIG. 3.


DISTRIBUTION OF TREE PRESS AND PLANK PRESS IN INDIA
N
S
NEPAL
UTTAR PRADESH
SIKKIM
BHUTAN
ASSAM
KHASI HILLS
EAST BENGAL (PAKISTAN)
TIPPERAH
SONTHAL PARGANAS
RANCHI
MAYURBHANJ
JHARGRAM
WEST BENGAL
MADHYA PRADESH
MELGHAT
BERAR
KORAPUT
ORISSA
BONDO HILLS
GODAVARI DT.
ANDHRA
HYDERABAD
BOMBAY
MADRAS
ANDAMAN ISLES
NICOBAR ISLES
CEYLON
SYMBOLS
P :- PLANK PRESS
T :- TREE PRESS
:- LIMIT OF OCCURRENCE OF AUSTRIC SPEECH

Map 1.



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THE SINHALA TREE PRESS

By A. JAYASUNDARA

The tree press is still widely used for extracting oil from various kinds of seeds, roots, bark or herbs of medicinal value, by the Sinhala villagers in various parts of Ceylon. The tree press appears to be more prevalent in the interior regions of the country, where a majority of the population follow agricultural pursuits. The use of the tree press is not limited to a particular caste, as such. However it may be mentioned that the weaving of the 'Rinser' or Paha ('a' as in pat) is done usually by the members of the Rodiya caste, who either sell it at the weekly fair or exchange it for a quantity of paddy or other cereal. The other parts that enter into the composition of the press hardly require any specialized labour and hence are made by the villagers themselves.

The seeds usually taken for extracting oil are many though it may be said that Mee (Sinhala term), Domba (Sinhala term), Khohomba and Margosa are chief types. Medicinal oils are also extracted from herbs, roots, leaves, bark, etc., by using this press.

The tree press is composed of the following parts:

I. A hole is bored in the trunk of a thick living tree, at a height of about three feet from the ground, with a diameter of about $4\frac{1}{2}$ inches to 5 inches and depth of about 6 to 8 inches.

II. Two wooden planks (*A* and *A'* in fig.) each having a length of about 5 feet or a little more and thickness of about 2 inches are taken. Their width at one end is about 5 inches and at the other is about 2 inches. Each plank has one of its surfaces, which we may term inner surface, flat, while the other three surfaces are rounded off, so as to give the outer surface a semicircular shape in cross-section.
About 6 inches away from the wider end, in the centre of each plank, a hole is made, having a diameter of about 2 inches.

III. A cylindrical wooden pole (*hb* in fig.) having a length of about 2 feet 6 inches and a diameter slightly less than 2 inches is taken.

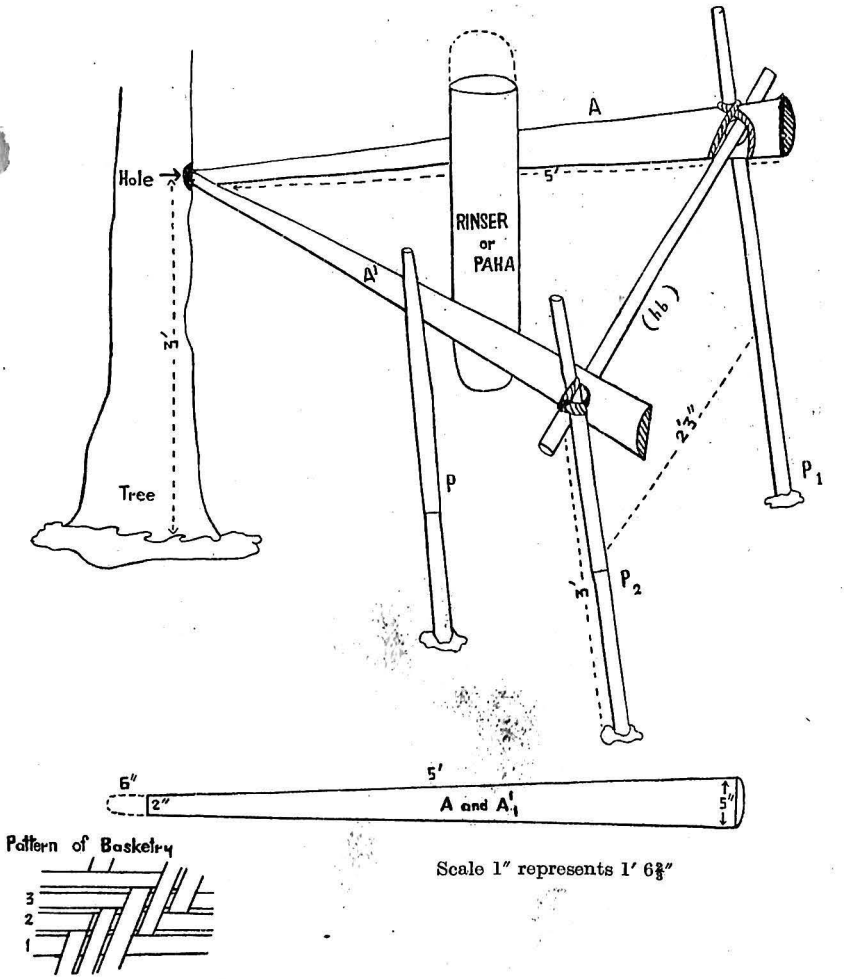
IV. Three other wooden poles are also required.

V. The 'Rinser' or the 'Paha' is a basketry container woven out of thin strips of cane. Sometimes fibres of barks of certain trees are taken when cane is not available. The pattern is twilling in three.

Method of Setting the Press:

The narrow ends of the planks *A* and *A'* are inserted into the hole in the trunk of the tree, in such a manner that the flat inner surfaces of both planks are vertical and face each other. Then the cylindrical pole is made to pass through the holes bored at the wider ends of both planks. This pole is kept in horizontal position by tying its ends with coir rope or rope made of the fibre of some jungle creeper to the upper ends of two poles $p_1 p_2$ which are firmly fixed upright in the ground. One of the planks *A* is kept fixed by tying it to an upright while the other *A'* is made to slide freely along the horizontal pole (*hb*) so that when moved

to the plank A, their inner, flat surfaces come in contact. A third pole (p in fig.) is fixed upright in the ground at about $1\frac{1}{2}$ feet away from p_2, so as to set a further limit to the movement of the plank A'.



Then the 'Rinser' or 'Paha' is filled with crushed and steamed seeds, and placed near about the central portion between the separated planks. At the beginning of the operation, the upper part of the Rinser is pressed but as the process is continued the basket is gradually raised. In pressing out oil the plank A' is made to move towards plank A and then withdrawn. The process is repeated by moving the plank A' forward and backward. One man holds the Rinser while another pushes the movable plank, towards fixed plank. (Photo showing press only). The above details have been ascertained at the request of Prof. K. P. Chattopadhyay and the note written in consultation with him.

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AN OIL PRESS AMONG BHILS OF RAJASTHAN

By S. NAVLAKHA

1. An oil press, which I have briefly described in the following lines, came to my notice among Bhils during my field investigations on them in the early part of 1958. It was first reported to me at Kundal in the district of Banswara and thereafter its use was confirmed at different village settlements in the same district. Its use is now, however, gradually diminishing and usually only a few families at a settlement possess it, lending it now and then to others for their use.

2. The oil press is an extremely simple device for extracting oil. It consists of two prepared planks of wood almost identically shaped and of nearly same dimensions. Fig. I, drawn of the first press I saw, shows the front view of the two planks *A* and *B*: *A* which is slightly longer than *B* measures 23″ in length, 6″ in maximum width and 1·3″ in thickness. It is shaped so as to obtain a highly tapering upper end and relatively less so at the lower end. The broadest region of the plank, which is closer to the lower end, is immediately followed, further towards the latter, by two lateral notches. At the upper end a hook is formed on the front aspect of the plank by retaining some length (2″) downwards of this end thicker than the rest of the plank body. This is easily discernible in the lateral view from Fig. II. The plank *B* measures 20″ in length, 6″ in maximum width and 1·2″ in thickness. It is identically shaped with lateral notches at the corresponding position but is different from the plank *A* in its absence of any hook at the upper end. Both the planks are almost uniformly thick through their body except that the lower ends in either case are slightly thicker (by less than 0·5″) than the upper.

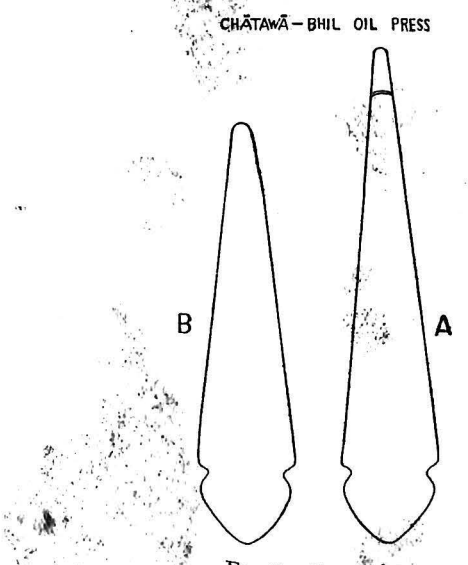

FIG. I. Front view

3. For manipulation of the oil press it is vertically placed. Plank *A* is tied to a hut pillar vertically from its hook with a *san* (sunn hemp) rope. Plank *B* is tied to the plank *A* at the region of their notches. The frontal surfaces of both the planks now face each other and become the interior walls of the press. Prepared and steamed oil seeds, contained in a cloth piece, are introduced between these walls. Another rope is wound round the pillar and the press (as shown in Fig. II) so that the manipulator, man or woman, now sitting on haunches on the ground facing the press puts one of his/her legs to rest on the lower end of the press and draws on forcefully at the two terminals of this rope. Thus a powerful pressure is exerted on the oil seeds between the press. The oil consequently drains out from the lateral sides of the press and is collected in a vessel kept just below on the ground.

4. The oil is extracted from *mahua* seeds. The collected seeds are crushed and then steamed. The latter is done by keeping them in a cloth over a pot with boiling water inside it. Sometimes, although rarely, oil is extracted from the seeds of *Kaleji* tree, which is used for medicinal purposes. The *mahua* oil, however, serves in a variety of ways, chiefly in eating.

CHĀTAWĀ – BHIL OIL PRESS

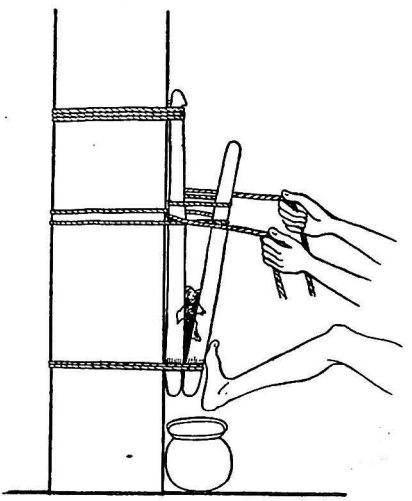

FIG. II. Manipulation