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STUDY OF INDIGENOUS PRODUCTS IN DAY TO DAY LIFE

Special Project



STUDY OF INDIGENOUS PRODUCTS IN DAY TO DAY LIFE

Approval sheet

Special Project

The special project entitled "Study of indigenous Products in day to day life" by B. V. Ratnam is approved in partial fulfillment of the requirements for the Bachelor of Design Course in Industrial Design.

Guide

M. Bhandari

By

B. V. Ratnam

Examiner

B. V. Ratnam

Guide

Prof. Mohan Bhandari

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Bombay -400 076

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M. Bhandari

Date

22/3/98

Examiner

Bupail M.

B. V. Ratnam

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Acknowledgement

I am greatly indebted to my guide Prof. Mohan Bhandari for his guidance and support at every stage of the project.

I also owe my sincere thanks to my batch mates who have encouraged and helped me throughout the course of the project.

B. V. Ratnam

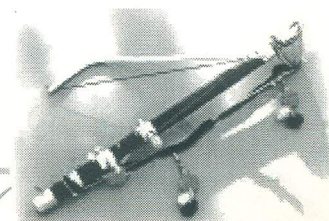
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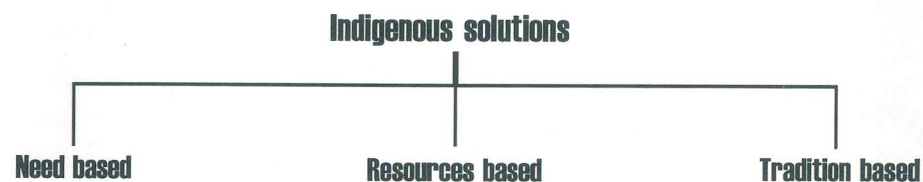
....Indigenous solutions

are the creative solutions that are triggered out from the minds of very few people in the process of fulfilling their needs under limited resources. Their solutions are happen to be without experts' innovation and apparent logical analysis. They use simple indigenous knowledge and arrive at ingenious solutions. To our delight, many of them are remarkably brilliant in creating amazing products that cater to their needs, irrespective of their basic qualification. These products are the live examples to prove that how constraints catalyse the creativity. Today, in the world of ever-growing technology, people are ignorant about indigenous skills which is why, such products – in spite of they being a treasure of creativity & innovation, they could not stand out to the level of public appreciation. No wonder we find such products even in our back yard lying unnoticed. So as a designer it is our responsibility to recognize and respect such indigenous knowledge, systems and thereby enlighten our creativity.

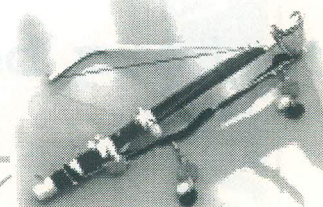


....The genesis

The three driving factors that lead to the genesis of the indigenous solutions.



Few samples are collected under each category and documented & analysed individually.



Need based products



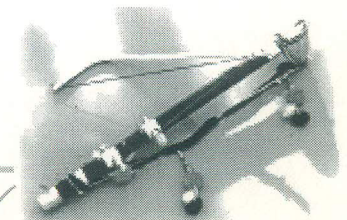
TURNED WOODEN TOYS

Andhrapradesh

Now lead to new dimension to the toys . . .

Etikoppaka is a small remote village in Andhrapradesh and is known for its elegant wooden toys. The occupation of the villagers is to make and sell these toys. They make toys using locally available wood from the trees called '*ankudu*' (botanical name - *rightia*). Each toy is an assembly of several tiny parts. To achieve interesting forms like birds, animals, mobiles, each form is split into small parts and each part is designed for the turning operation. Creative combination of other natural elements are also used.

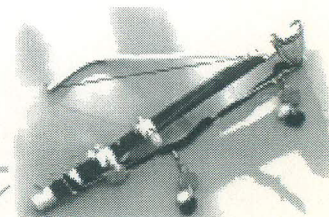
Once the toy is carved out on the lathe, different colours are applied on it using lacquer sticks. Crafts men make their own lacquer sticks of desired colours. They buy synthetic dies and combine them with the lacquer and mould them in the form of sticks. During the turning operation, as the stick is adhered on the surface of the toy, due to friction it melts and sticks to the surface. Then it is polished by rubbing it with a leaf of a local plant called '*mogali reku*' (botanical name - *pandanous*). This leaf gives an excellent glossy finish to the toy.





Need lead to new dimension to the toys

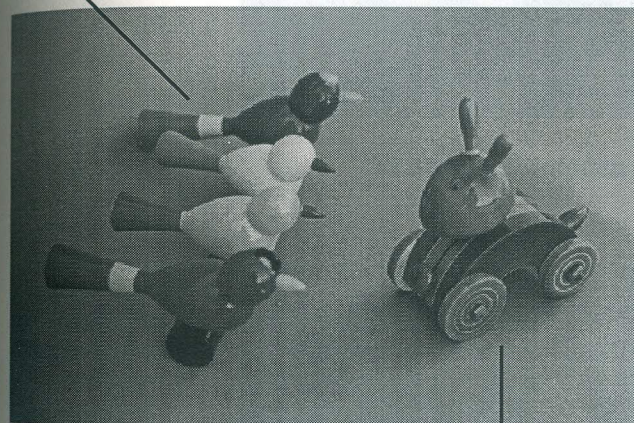
The synthetic dyes are proved to be harmful to the health. They might cause respiratory problems to children, which is why several countries banned the goods with synthetic colours. This ultimately effected the export market of the wooden toys and there by affected the bread and butter of the crafts man. At this juncture, the village head 'Mr. C. V. Raju' took the initiative and started exploration in the natural dyes. In the process he extracted several colours from local plants and also he borrowed some from the knowledge of '*Yanadi, Nakkala, Sugali*' tribes in the state. He applied these natural dyes on the toys and the result was - a new dimension to the world of wooden toys. The entire appeal of the toy changed. The colours are much brighter than the synthetic colours. They look very fresh. The most interesting feature is that these colours are transparent and make the grain structure of the wood visible. This gave the crafts man a new direction to work on. They could create patterns on the wood and apply colour on it.





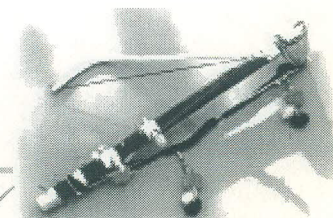
The Natural Dye Plants

Toy with synthetic dye



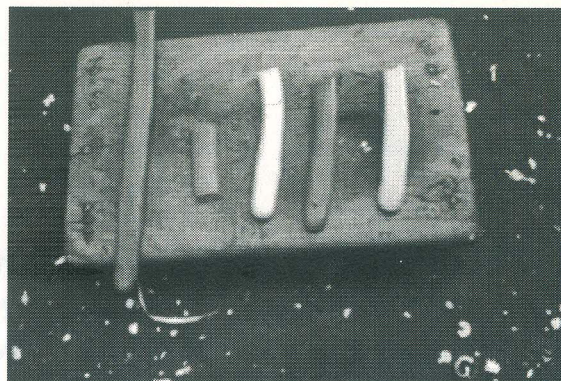
Toy with natural die

Sr. No.	Name of the plant	Local name	Plant part	Colour
1	<i>Terminalia chebula</i>	<i>karakkaya</i>	Fruits	Yellow
2	<i>Mongifera indica</i>	<i>mamidi chettu</i>	Wood	Yellow
3	<i>Punica granatum</i>	<i>danimma</i>	Wood	Yellow
4	<i>Anagallis latifolia</i>	<i>velama chettu</i>	Leaf	Green
5	<i>Indigofera tinctoria</i>	<i>nelimadu mokka</i>	Plant	Blue
6	<i>Mallatos philippensis</i>	<i>sindhuri</i>	Fruits	Brown
7	<i>Rubia cordifolia</i>	<i>momgista</i>	Root, Stem	Red
8	<i>Bauhinia racemosa</i>	<i>nerija</i>	Bark	Light green
9	<i>Tabernaemontana coronaria</i>	<i>nandivardan</i>	Fruits	Light red

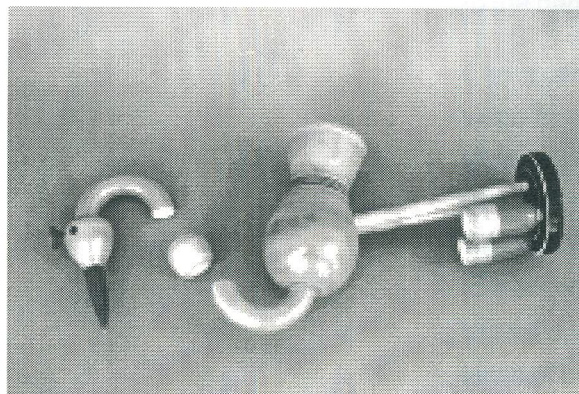




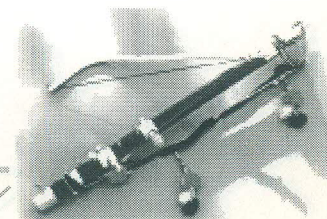
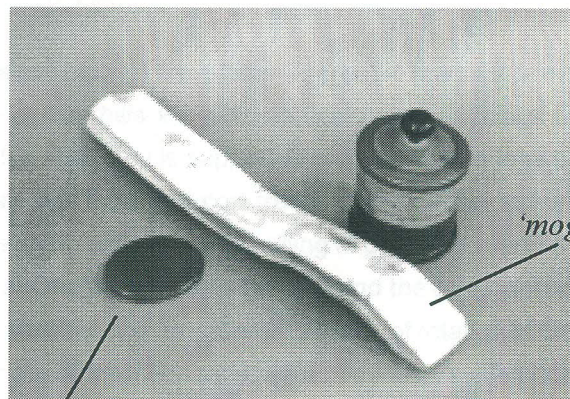
The tyurned wooden toys

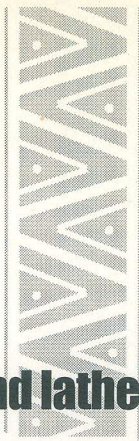


Laquer sticks



Toy can be split into small parts

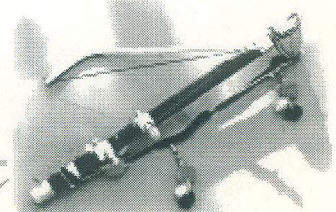


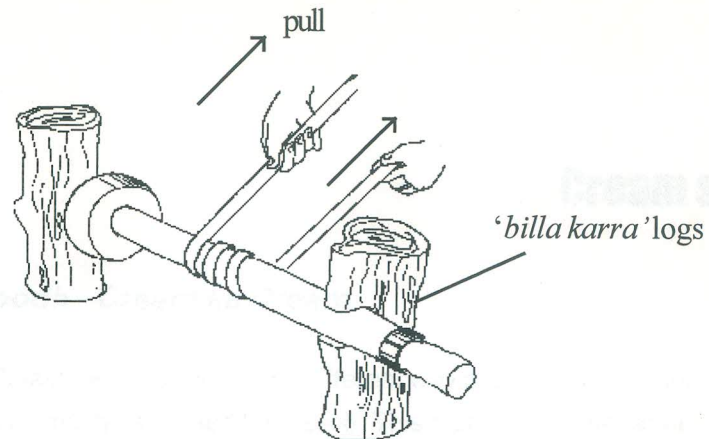
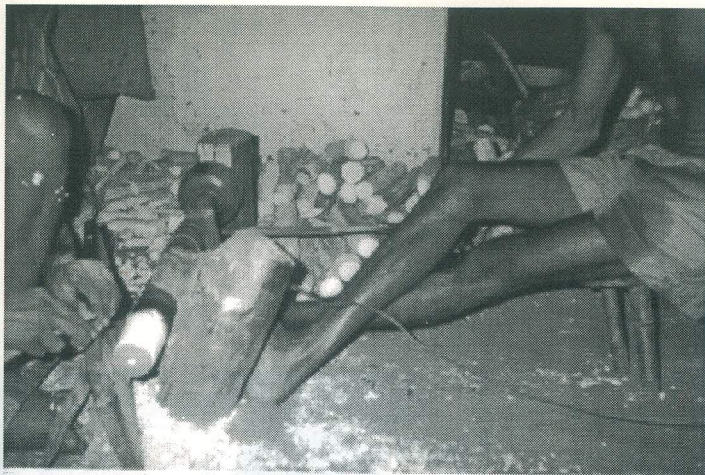


The hand lathe

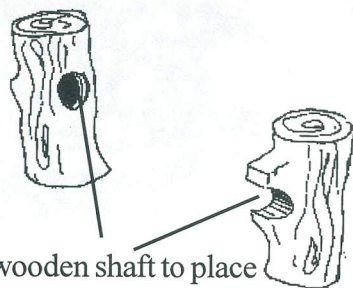
As it is said earlier that the occupation of the *Etikoppaka* villagers is wooden toys making. The whole toy is made by turning operation. Crafts men work twelve hours a day on the lathes. Till the recent past they were using hand lathes. Later few of them switched over to the electric motor driven lathes, but could not sustain with them due to lack of continuous electric power supply. Since it is a remote village, the electric power supply in the village is almost negligible. They get the power for three to four hours in a day. So ultimately majority of them came back to the hand lathes.

Each crafts man designs his own hand lathe. The entire machine is made out of locally available wood from the tree called '*billa karra*' (botanical name - *Millings tonia*). Basically the hand lathe is a long wooden shaft that is supported on two wooden logs at it's ends. The support is given in such a way that the shaft can freely rotate on the support. A long leather belt is wrapped around the shaft for the ease of pulling to generate rotation. Two people are required to work on one lathe. One person pulls the belt and the other person works on it. During the turning operation, crafts men require different speeds of rotation of the lathe to achieve different kinds of profiles. So the different speeds are achieved by skilled control of pulling.

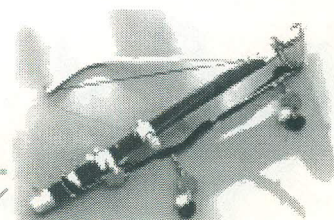




The pulling action



wooden shaft



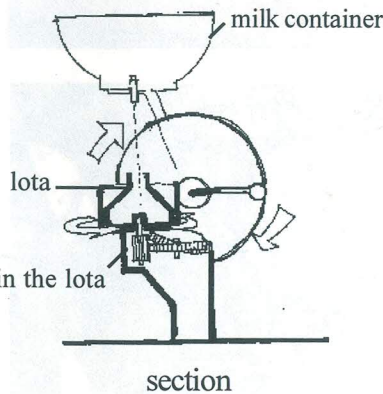


Cream separator

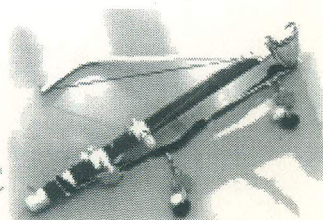
"Doodh ka Doodh - Cream ka Cream"



The villagers of Rajasthan are practising a different way of cream separation from the milk. A simple hand driven machine is used for the job. This machine can separate the cream from the milk in a few minutes. The machine is locally manufactured and marketed. It works on a simple centrifugal principle.



The milk from the container falls into the 'lota' (inverted conical housing) through the tap. The lota consists of twenty two 'katoriya' (inverted conical bowls) placed one above the other. These katoriya contain holes on the surface. As the milk enters the lota it goes down through the central shaft. During this moment the lota is spun by hand.

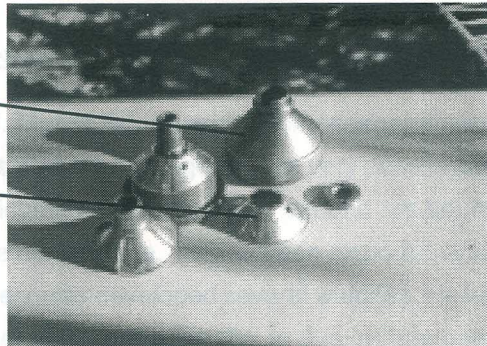




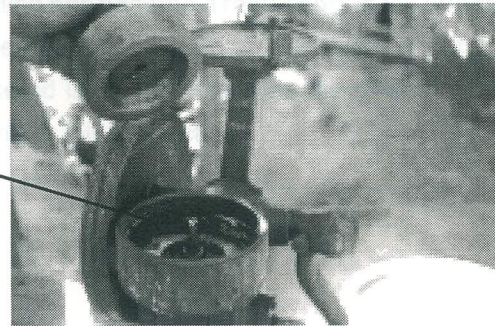
Watch cleaning

lota

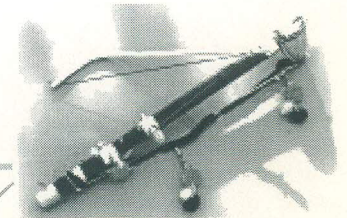
katori



Shaft to that rotates lota



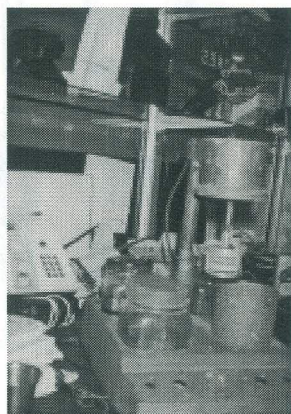
Because of the spinning action the milk rises above adhering to the surface of central shaft.. Due to the centrifugal force the heavy particle like the cream is thrown away to the peripheries. The cream adheres to the surface of the *katori* and rises above through the holes of *katoriya*.. Two different outlets are provided to collect the milk and the cream separately.



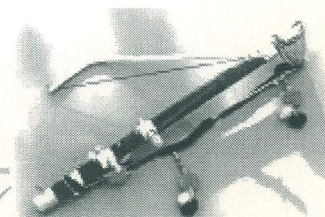


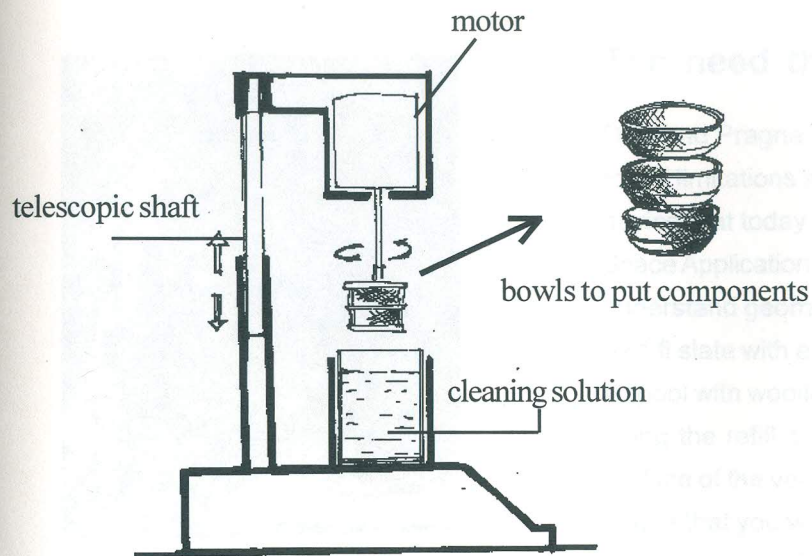
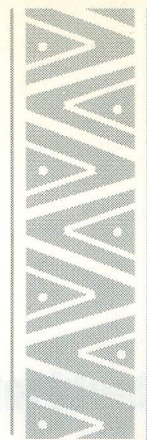
Watch cleaning machine

Passion + Need = Innovation

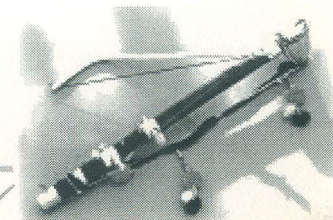


Mr. J. Murali, 60, a resident of Visakhapatnam - Andhrapradesh, is a man of achievements. Right from his teenage he was very passionate about watches. Though his education was till matriculation only, he could expand his boundaries of knowledge beyond the possibilities. Since his teenage, he has been exploring and experimenting in the field of watches and has indigenously developed several watches. He has received enough rewards and recognition for his achievements. Parallel to this he has been running a watch servicing centre. So watch cleaning has become a regular act in his professional life. To fulfil this basic need, Murali has indigenously developed an 'Electrical Watch Cleaning Machine' which is manufactured and marketed later. This stood as the milestone in his series of achievements. He has got the patent for this product.



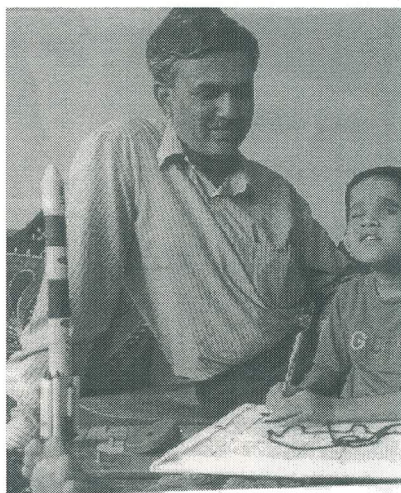


For cleaning of an electrical watch, the various tiny components of the watch are to be immersed in two different solutions one after other. Then they are to be stirred well. Murali has provided three small wire mesh compartments to take care of the components of different sizes. These compartments are fixed to the shaft of an electrical motor. The shaft of the motor is immersed in the solutions and rotated for stirring action. During this process a specific temperature is to be maintained for the two solutions. So a heater with a thermostat is provided in the machine. The machine is also facilitated with audiovisual indicators.. Murali has fabricated the entire device by making use of unwanted material and available resources.





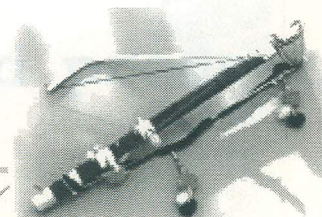
The drawing tool for blind



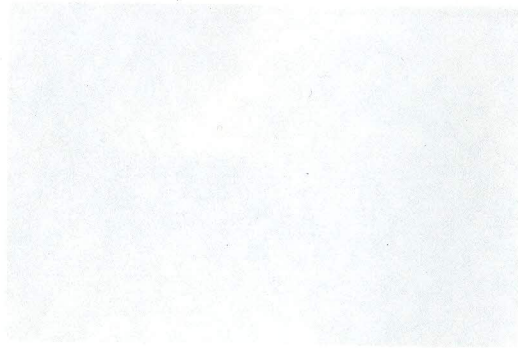
The need that broke the limitations indeed

Dilip and Pragna bhatt were determined to help their blind son lead a normal life. But they found limitations in the teaching aids for the blind. This spurred them to make a revolutionary device that today enables the blind to draw. Dilip, 43, an engineer at the Ahmedabad unit of Space Application Centre, has invented a device that allows blind children to draw shapes and understand geometrical designs. It is constructed out of a series of household objects. A 1 ft by 1 ft slate with a piece of velcro stuck on it. A common ballpoint pen that has fitted on its top a spool with woollen thread rolled on it. The thread, inserted into the pen from the top, travels along the refill and ends exactly at the tip. When a blind person runs the pen across the surface of the velcro pad, as one might over a piece of paper, the thread sticks and forms the shape that you want to draw. Pull the thread and it is erased. It is genius of a sort.

Source based



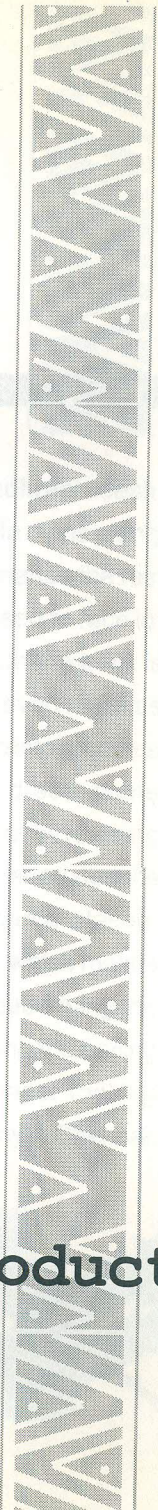
Paper out of banana



Handmade paper from banana trunks

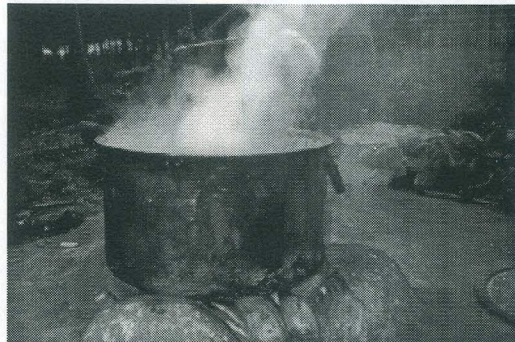


Resource based products





Paper out of banana fibre



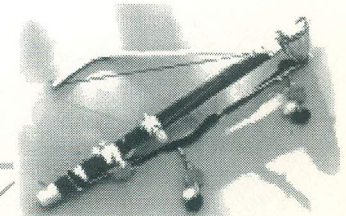
Boiling of the chopped banana trunks

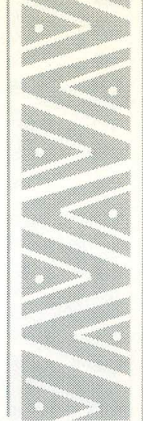


water tub

Washing of the boiled pieces

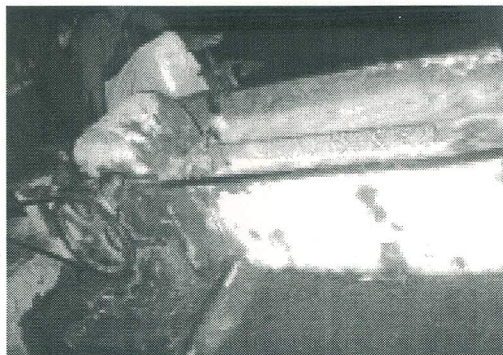
Mr. C. V. Raju, a resident of *Etikoppaka* village -Andhrapradesh, is basically a farmer who cultivates banana trees. He owns plenty of banana fields. In a banana tree other than the bananas the rest goes useless, which is why after every crop Raju used to face lot of problems in disposing the gathered waste. The banana trunk is voluminous and very weak in strength. We cannot even use it as a fire wood. So Raju has planned to convert the waste into resource by making paper out of banana fibre. To make his dream come true he has put all his efforts and struggled for one year by roaming around for relevant information. Ultimately he succeeded despite the rejection of his concept by K. V. S. C. Research station, Pune. The banana trunk consists of acid substances which makes the paper brittle. Mr. Raju solved the problem by neutralising the acidity of the trunk by adding calcium hydroxide during the boiling of the chopped pieces. Now he has set his own paper making plant and supplying paper bags to a garments company in Chennai.



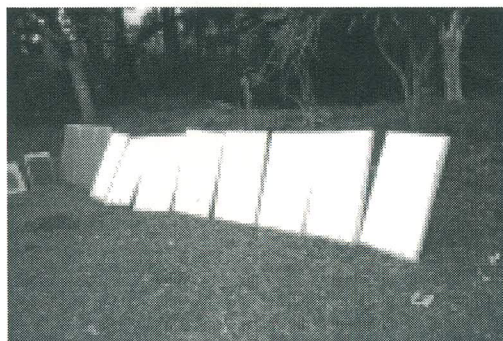


screen mounted frame

thin layer of pulp is applied on the screen mounted frames

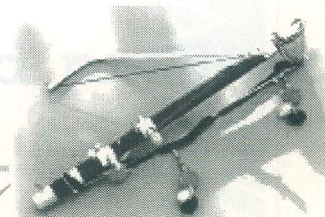


Pulp beating



Drying of pulp layers

The chopped pieces of banana trunk are boiled with calcium hydroxide and then they are washed with plane water. This will drain out the neutralised acid contents. The pieces are converted into pulp by beating operation. Thin layers of pulp is laid on a specially made screens. These layers are compressed flat and left for drying in the sun. The layers become paper after drying. The paper is finally rolled between two cylinders to create an even surface. The edges of the paper are trimmed and used for making bags. The quality of the paper is good enough for screen printing as well.



Additional Violin

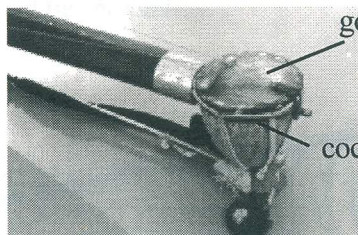
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Tradition based products

'Ravanta'

A traditional Violin

Aluminium tuning keys

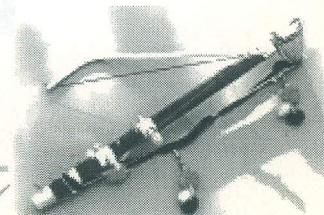
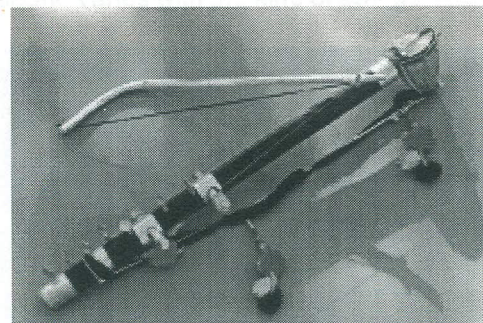


goat skin

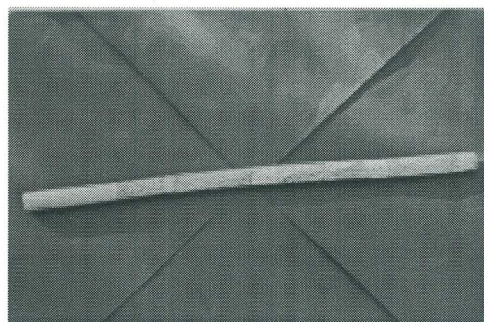
coconut shell

goat skin is mounted on coconut shell to accentuate the sound

'Ravanta' - a traditional instrument of Rajasthan that resembles the Violin. It is one of the major attractions to the tourists of Jaisalmir. The instrument is made to sell to the tourists. The locally available cheap material is carefully constructed together to make this instrument and it is embellished such that it reflects the tradition.

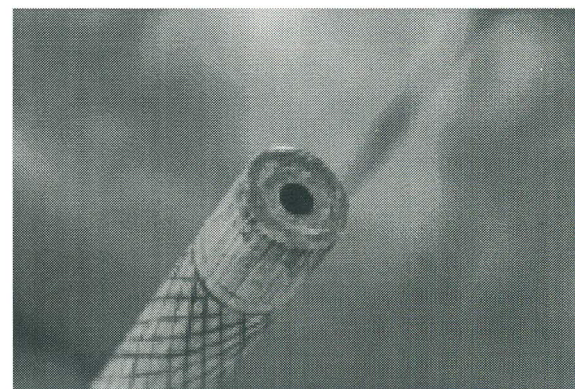
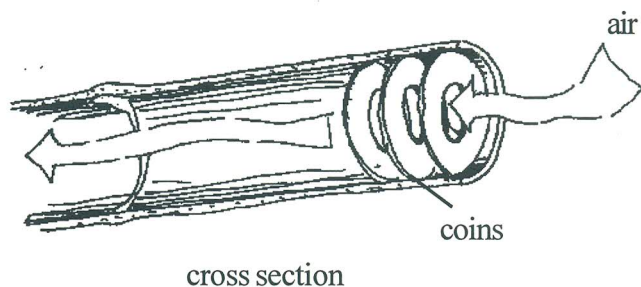


A dynamic flute



The '*basuri*'

Unlike the other flutes, this flute doesn't have to be played with mouth. This is used in the festivals of some northern tribes of India. To play the flute, we have to swing it in the air. A long bamboo stick is taken and it's nodes are pierced from inside to make it as a pipe. One end of the bamboo is left open and the other end is concealed with three old coins (coins with a hole in the middle) maintaining a slight gap between each coin. The coins are fixed by means of wax. When the bamboo is swung in the air, the air passes through the coins and produce a pleasant sound. The sound varies with the kind of swings.



sealed end of the bamboo wit old coins

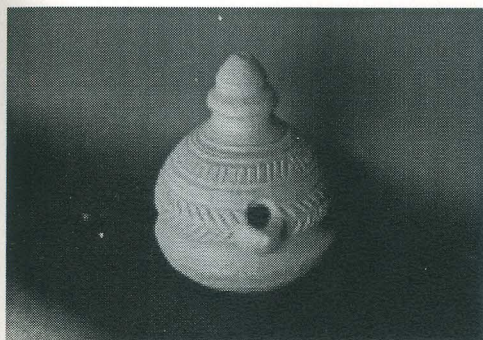


...but 'deep' ...

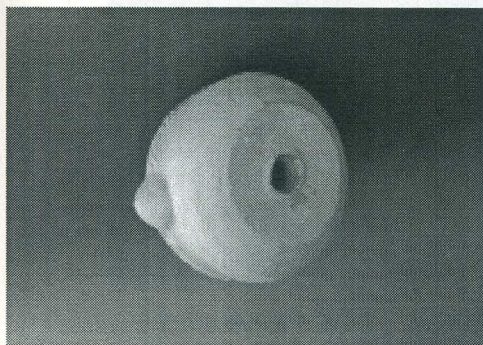
The reason behind ...
...others. Here the ...
...layers. The 'dye' ...
...provided with on ...
...for the oil to ...
...actually, on ...
...bottles in



Others

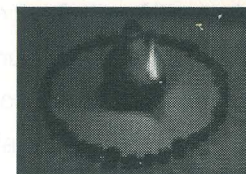


Front view



Bottom view

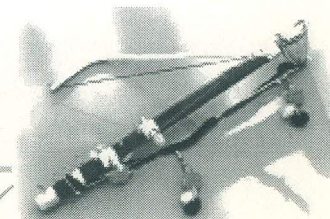
*adhb*but 'deep'

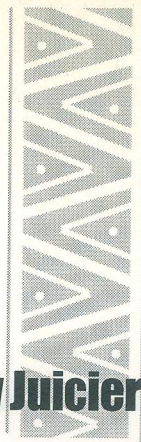


The reason behind the genesis of few indigenous products is that they are to be different from the others. Here the need is self promotion. A surprise is included in the product to attract the buyers. The '*diya*' (lamp) comes under this category. The *diya* is made of clay. The *diya* is provided with one opening on the surface to place the wick and enclosed from all the sides. A hole for the oil to pour in, is given at the bottom so as to create a fear of the oil dripping down. But actually, once we pour the oil inside it will not draining out. The same logic was used for the ink bottles of the good olden days.

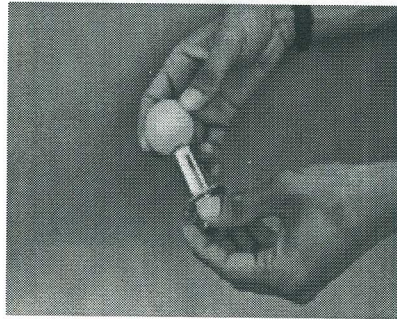
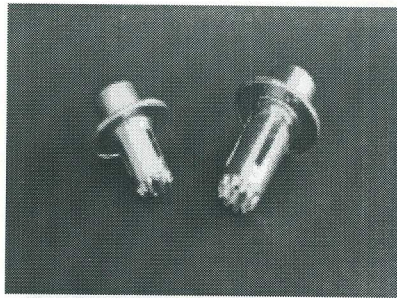


section



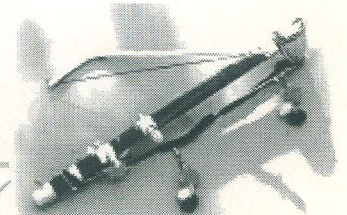
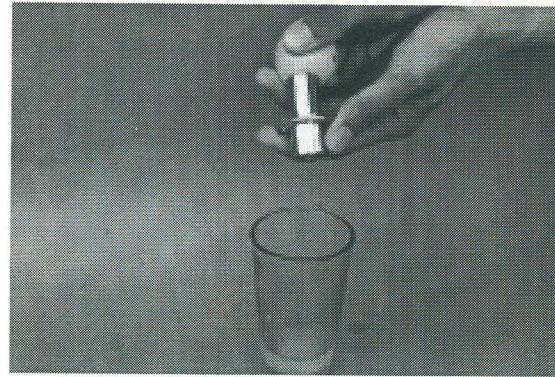


Can do with color **Tiny Juicier**



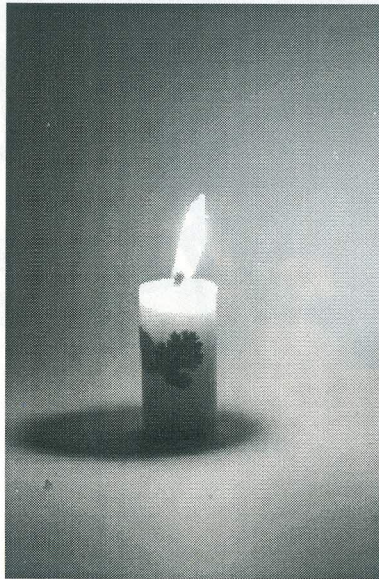
Pierce the juicier into the fruit

Tiny juicier is a small plastic moulded device that can extract juice from the fruits of it's scale. Just pierce the device into the fruit and squeeze the fruit. Juice, without any seeds will flow down through the device. It is in the form of a tube with teeth at one of it's ends. The teeth enables the device to pierce into the fruit. Slits are provided on it's surface through which the juice oozes in. The width of the slit is given in such a way that it stops the seeds from flowing inside. Blades are provided abreast to the slits to cut the inner surface of the fruit.



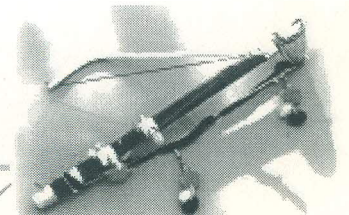


Candle with colourful patterns

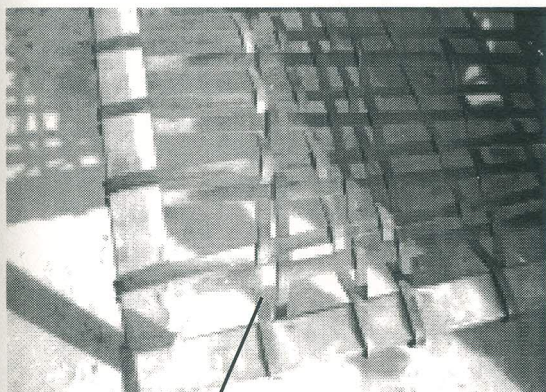


When we say candle, it immediately reminds us a long white wax stick. This is what the image of a candle is associated to. But for few people the image is - a white wax stick with colourful patterns on it. The speciality is not in creating patterns but in creating natural patterns. Colourful leaves in the nature are collected and placed on the walls of the mould and casted with wax. The candle with colourful patterns is ready. You can change the colours and patterns from candle to candle without any conscious effort. An excellent output with almost zero investment.

Natural leaves

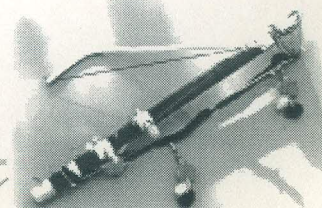
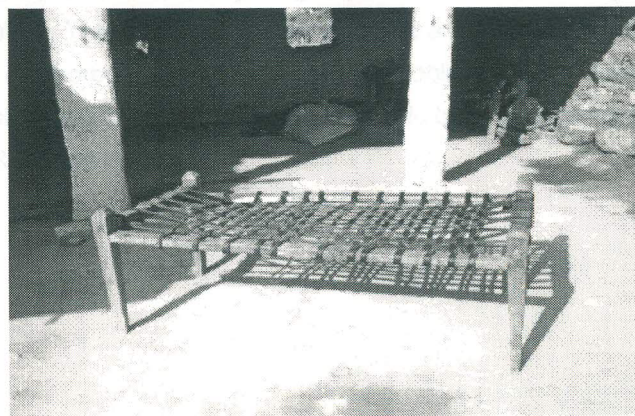


Cobbler made cot

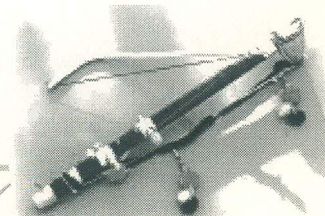


Woven strips of truck tyre

The high way side *dhabas* of *Palkhodi* village- Rajasthan use cots made by the cobbler. They replaced the conventional weave of the cot with the woven strips of truck tyre rubber. It is a good example for making use of unwanted material. They collect the truck tyres and cut them into strips with the help of the cobbler. These strips are woven just like a conventional weave. This cot gives a nice bouncing effect. For washing the weave does not have to be replaced. From one tyre five to eight cots can be made.



Indigenous solutions are the out come of a clever interpretation of the problem. They are not the intellectuals' property. They are always there along with the problem. The only thing required is - a different way of looking at the problem. The solutions are very simple and logical, but strike only when there is a thorough understanding of the problem, enough determination and extensive exploration. The driving factors to cultivate such qualities are the 'need & limited resources'.



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