

Study of Contemporary Textile Crafts of India

Volume-1

IKAT FABRICS OF ORISSA AND ANDHRA PRADESH



Indira Gandhi National

BIJOY CHANDRA MOHANTY
AND
KALYAN KRISHNA

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Calico Museum of Textiles, Ahmedabad, India

1974

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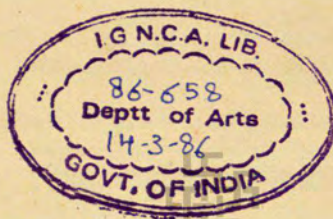
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PREFACE

Tie and dye technique, which is also called ikat technique, is widely spread all over the world. The technique is essentially a process of tying portions of the same thread and dipping them in the dye bath so that the dye penetrates only in the untied portions without affecting the tied portions and repeating the process several times by untying and tying again and again for dye bath of different colours as required and thus bringing out a number of colours on the same thread at different portions. It was perhaps a primitive technique to apply a number of colours on woven textiles. In the developed stage this technique of tying and dyeing yarn, warp or weft or both adopted to weave simple and elaborate motifs and layout is a very adept hand technique of precision and perfection producing fabrics of unparalleled beauty with different colours.

In India, the technique has developed to a remarkable extent in Gujarat, Orissa and Andhra Pradesh. A study of the historical background of the men who produce such artistic textiles by hand and the technology adopted by them in these States is of great interest. While the ikat fabrics of Patan in Gujarat have been known to the world since long, those of Orissa and Andhra Pradesh are practically unknown.

The history and technology of rich, hand made textiles of various parts of India have not been scientifically studied and recorded. In many regions the art of manufacturing these textiles is dying or already dead causing the disappearance of such artistic fabrics. The Calico Museum of Textiles has undertaken the work of studying the history and technology of the contemporary hand made and hand woven textiles of all the regions of India and publishing them in a series for the benefit of the public as well as the textile scholars and technologists. The first volume in this series is devoted to the ikat fabrics of Orissa and Andhra Pradesh. It deals with the historical background of the fabrics and of the people who produce them. It surveys available representative old fabrics with a detailed analysis of contemporary fabrics illustrated with photographic reproduction of them.

The technology, the basic principles and various processes adopted are explained and illustrated with sketches and photoprints of actual working methods. Information is given on the socio-economic conditions of the people engaged in the manufacture of the fabrics.

We are indebted to Prof. Alfred Buhler, Ex-Director, Museum fur Volkerkunde, Basle, Switzerland for his valuable suggestions on various aspects of the subject.

We gratefully acknowledge the valuable assistance and information given by Sri K. Acharya of Sambalpuri Bastralaya Handloom Co-operative Society Bargarh, Sri Sadasiva Ratha Sharma of Puri and Sri Jagadish Mittal of Hyderabad.

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Ahmedabad,

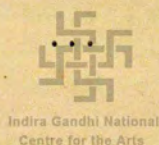
B.C. Mohanty

September, 1974

Kalyan Krishna

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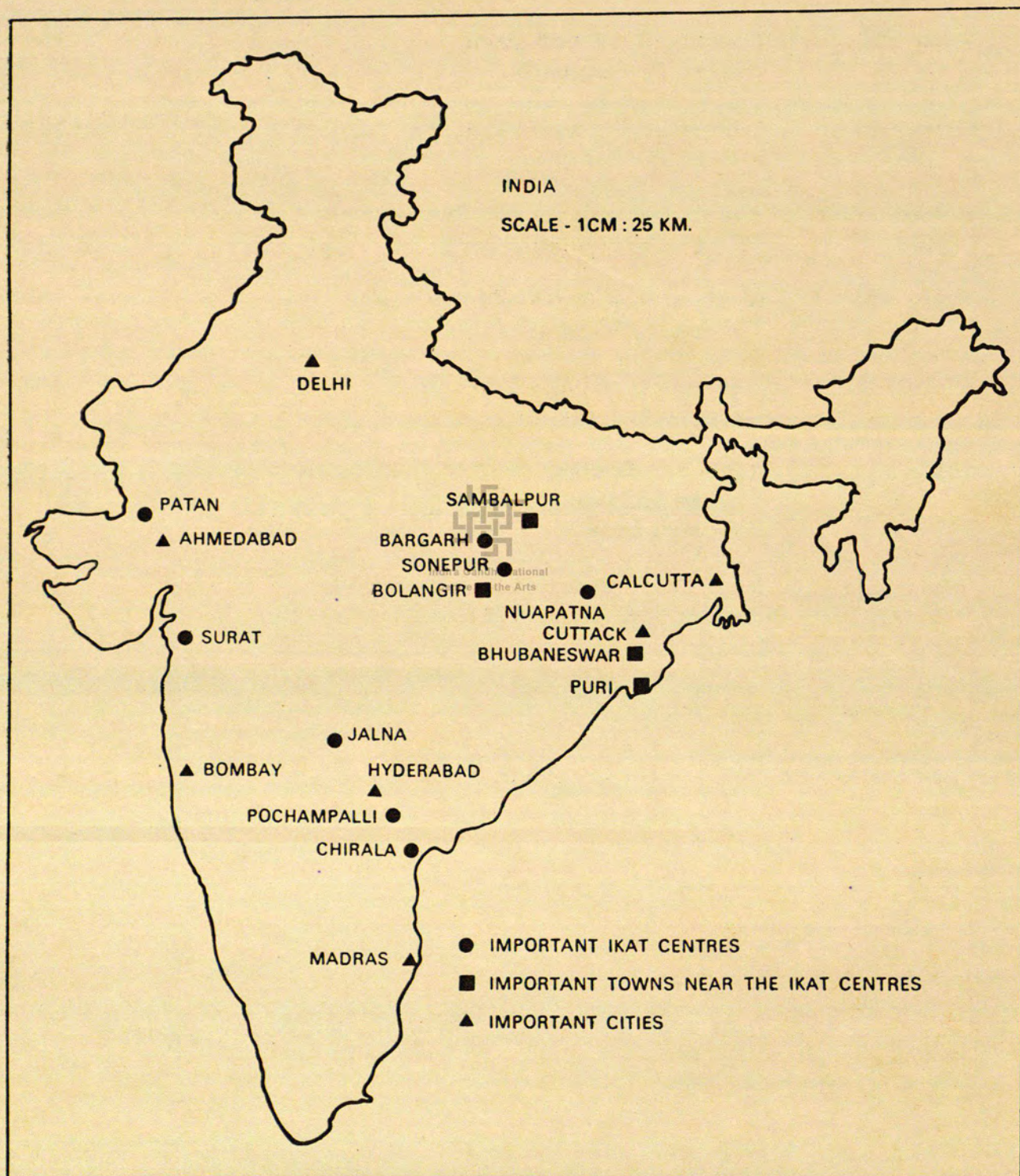
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INTRODUCTION

The term ikat which is a Malayan word and introduced into the European language by Rouffaer comes from the word Mangikat which means to bind, knot or wind round. It is used for yarn tie and dye only as against tie and dye of fabrics which, in India, is known as bandhni. In the Malayan Peninsula the native silken fabrics in ikat technique are known as tjindai, tjinde or chindi. In Indochina the technique is known as 'hol'. According to Alfred Buhler(1) only hand done resist process is called ikat.

In this monograph the words tie and dye mean ikat, that is, tying and dyeing of yarn before weaving.

In the tie and dye process the designs in various colours are formed on a fabric either by the warp threads or the weft threads (single ikat) or by both (double ikat). The threads forming the design are tied and dyed repeatedly to bring in desired colour at desired places and the simple interlacement of the threads produces the design on the fabric. In single ikat fabrics the warp or weft threads which are tied and dyed as per design should be positioned accurately in proper sequence in weaving as required by the design and its colour scheme. In the case of double ikat fabrics not only the warp and weft threads which are tied and dyed as per design should be individually positioned in proper sequence but the relative position of each warp thread and each weft thread forming the design should be accurately ensured during weaving. It is the earliest technique which has been employed for colourful fabrics of delicacy with simple as well as complicated motifs which appear exactly the same on either side of the fabric.

Buhler(2) has made a scientific survey of ikat textiles of the world especially of South East Asia, Japan, Persia, Near East, parts of Africa and Latin America, Mexico and the West Coast of the United States of America. He has also attempted to study the ikat technique of Gujarat and its influence on Indonesia and vice versa(3). He is, however, of the view that the diffusion of the technique in one direction or the other could not be established from the available evidence. If at all, such diffusion must have taken place at a very early date. This problem, however, has to be studied in greater detail.

Ikat technique in Tanjore, Kumbakonam, Ventapallam, Mysore, Hyderabad and Trichinopoly in South India(4) and in Bengal, Agra, Central provinces and Punjab(5) is dead long since. The technique is no longer followed in Mandvi(6) in South Gujarat or in Ahmedabad, Cambay and Baroda. The patolu of Patan, which was once a famous centre of ikat weaving in Gujarat, is almost dead, there being only four looms at present. The technique of Mashru weaving of Surat has also declined. We no longer hear of the Mashru of Chamba(7) and Varanasi(8). Some isolated places are attempting to revive the Mashru technique. This remarkable ikat technique, a precision handiwork, is however thriving in Orissa and Andhra Pradesh. However, no detailed study of the tie and dye fabrics in the aforesaid centres has been made though Buhler(9) has made elaborate scientific studies of Indonesian technique of tie and dye fabrics.

The tie and dye process, the process of transferring warp to the loom, the preparation of continuous weft and its transfer to the shuttle after tie and dye,

the actual method of separating the threads for grouping and sub-grouping in Orissa and Andhra Pradesh have not been studied.

The technique of separating the threads for grouping and sub-grouping while the thread is continuous, particularly the weft, is also not clear in the study of Patolu of Gujarat by Gulati(10).

Due attention has not been paid to the tie and dye fabrics in Orissa although known to the scholars of Indian textiles history. Gulati(11) does not mention the tie and dye fabrics of Nuapatna in Orissa. His very meagre information is also unfortunately misleading.

While the manufacture of tie and dye or ikat fabrics is becoming extinct in many parts of the world, due to various reasons, like the complexity of technique and the rising cost of manufacturing, their production is thriving in some parts of Orissa and Andhra Pradesh and the technique has reached a highly developed stage. The study of the contemporary tie and dye fabrics is therefore very important. This monograph endeavours to bring to light the tie and dye fabrics of Orissa and Andhra Pradesh.



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HISTORICAL BACKGROUND

The ikat technique in India is commonly known as patola in Gujarat, bandha in Orissa and pagdu bandhu, buddavasi and chitki in Andhra Pradesh(12) where the technique is still being used.

As Buhler(13) indicates, the first documentary evidence for the presence of patola (of Gujarat) in Java dates back to 1689, while the ikat technique was prevalent there several centuries before as could be concluded from the developed stage of the technique in the 17th century. He further writes that there is no proof of patola, meaning fabrics of ikat technique only, before the European trading in the 16th century although the word patola was in use before for various fabrics(14).

The list of fabrics given in Jyotirisvara's Varnaratnakara written in Eastern India in the early 14th century in Maithili gives a list of vandha fabrics, namely, Surya vandha and Gaja vandha. The names Vichitra and Vichitrangada(15) appearing in the same list have been linked with the Vichitrapuri (also known as Vichitrapar) saree available in Sambalpur and Bolangir districts of Orissa, while Gaja (elephant) is a popular motif used in ikat technique (bandha) of Nuapatna (Tigria) and its surrounding areas in Cuttack district of Orissa.

The weavers working in ikat technique are Salvi, Bhulia Meher, Gaudia-Patra, Asani-Patra, Padmasali and Devanga by caste.

The Salvi weavers are also found in Gujarat, Maharashtra(16), Madhya Pradesh and Madras.

The silk weavers of South India claim to have originally migrated from Saurashtra, first to Deogiri in 1187 A.D. and then to further South in 1316. H.N. Randle observes that the influence of Gujarati language is found in the dialect they speak(17).

The report on Madras factory of East India Company in 1645 indicates that the factory tried to get Gujarati fabrics woven at Madras and succeeded in all except in patolas and tapichindes which the South Indian weavers could not weave. However the reports add that they were hopeful of the ultimate success of weaving of the same and tried to take some weavers from Surat(18).

The three families weaving patola in Patan in Gujarat when interviewed claim that the Salvis of Patan came from Jalna, brought there by Kumarpala. According to the legend Kumarpala defeated the king of Sapadlaksha (Sambhar Lake) and brought 700 Salvi weavers from Bimbora to Patan in 12th century(19). Jalna is situated near Aurangabad in Maharashtra State under old Deogiri which was a very important centre of weaving(20). According to Ziauddin Barani, Sulatan Ala-ud-din received from Deogiri abrasam (silk) and patolah which are patola silk, besides gold, silver, jewels and pearls after defeating Ramdeva, the ruler of Deogiri. That the Deogiri stuff was highly valued is confirmed by Isami, who, writing in 1350 observes that after the defeat of Ramdeva the Turkish soldiers looted the costly stuff of Deogiri(21). In Chhitaivarta patola trousers are mentioned in the list of garments for the marriage of Chhitai, daughter of Ramdeva. Patola weaving existed in 1950 in Jalna as reported by

Pupul Jayakar(22). It is therefore evident that the Salvis from Saurashtra must have migrated to Jalna before the 12th century. They were in a very flourishing state in the mid-14th century as is evident from Persian sources. It is also evident that while migrating from Deogiri to South India some of them remained in Jalna. Others might have come from Saurashtra. It may, however, be pointed out that even the Patan weavers claim to have come from Jalna. It seems the migration was in both ways and therefore some confusion had arisen about their migration.

The Bhulia Meher, Gaudia Patra and Asani Patra weavers of Orissa are known for single and double ikat technique both in cotton and silk. The Bhulia Meher weavers and Patras belong to two different groups living in different areas with different modes of living, spoken dialect, habits, technique of ikat weaving and the use of ikat fabrics, etc. We propose to deal with these two groups separately.

The Bhulia Meher weavers are settled in the districts of Sambalpur, Bolangir, Boudh, Kalahandi and Sundergarh of Orissa.

The Meher community is divided into three sub-groups namely Kuli who are labour class Mehers, Costa Mehers who are tassar weavers but do not follow the traditional ikat technique, and Bhulia Mehers who are tie and dye weavers in cotton. In the last ten years the scheduled caste Gondas have also learnt tie and dye technique. They are however, still weaving coarse tie and dye fabrics. Some Bhulia Mehers have since taken to agriculture.

The Meher weavers worship Visvakarma, the loom, gods and goddesses as well as folk goddesses such as Samaleswari (goddess of Sambalpur) and Pataneshwari (goddess of Bolangir Patna).

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The Bhulia Mehers claim that they had originally come from Rajasthan. Shri Gangadhar Meher who attained a high status as a poet was also a Bhulia Meher. He was born in the year 1862 and died in the year 1924. During his life time he was also engaged in weaving. The top of the sley used by him is still preserved and can be seen in his residence at Barpali (a large village near Bargarh), where his son Sri Bhagaban Das now lives. It is also mentioned in his autobiography that his profession was weaving. Although no specific mention of tie and dye weaving is made it could perhaps reasonably be assumed that the tie and dye weaving must have been of very simple design as were being woven in Jhilminda village probably during his life time. According to Sri Bhagaban Meher, his son, as well as Sri Benode Chandra Meher, his grand son, the Bhulia Mehers had organised a Maha Sabha (meeting) in 1924 and this meeting considered about the origin of Bhulia community. It was addressed by Sri Gangadhar Meher. An English version of the relevant extracts from his speech is given below.

"The history of the origin of our community will be printed in detail in a book form and will be distributed. It should be mentioned here only that we were originally inhabitants of Delhi. During the reign of Emperor Prithviraj when the Moghuls attacked Delhi, our ancestors fled from Delhi and settled in the villages of Dhamantari and Dhamsa villages of the district of Raipur. When the first Chouhan King Ramai Deb ascended the throne of Patna (Bolangir Patna) he brought our ancestors from the villages of Dhamantari and Dhamsa and settled us at Patnagarh. From there we have spread over various places in Sambalpur District."

In his work "Meher Kabi" published in 1925 Pandit Raghab Misra writes that the ancestral home of the Mehers was the historical kingdom of "Gardsambar". Gardsambar was situated probably near Delhi or in Rajasthan.

The Imperial Gazetteer of India 1908(23) holds that the present rulers are descendants from Chauhan Rajputs and claim high antiquity for their family. Their ancestor was a Rajput prince who lived near Mainpuri and was expelled from his domain by the invading muslim forces.

In the Bihar and Orissa district gazetteer(24) it is mentioned that Sambalpur was at an early period under rule of Maharajas of Patana, who were the head of a cluster of States known as the Athara Garhjat (i.e. the 18 fort areas) and ruled over a large tract to the east of the Ratanpur kingdom.

Their ancestor came to Patna with his family and lost his life in a battle, but his pregnant wife gave birth to a son. At that time Patna was divided among eight feudatory chiefs, who had explicit understanding among themselves to rule the territories for one day each. When the boy Ramaideb grew up, he killed the chiefs and made himself ruler of Patna. In succeeding years the family extended their influence over the surrounding territories now covered by Sambalpur district and adjoining states.

It could be gathered from the district gazetteers of Bolangir(25) about the profession of the Bhulias that the Bhulias and Costas do excellent work in weaving cotton and tassar fabrics. The Bhulia weavers of Sonepur are famous for cotton weaving though they are also farmers. They are all known as Meher. But the Bhulias claim to occupy the highest rank among them.

The following information was obtained from Jagabandhu Meher and Duryodhan Meher, inhabitants of Jhilminda village near Bargarh about their profession as weavers. They informed that Markanda Meher, great grand father of Jagabandhu Meher, came to the village from Lakshanpur. He however did not weave in tie and dye technique. Jagabandhu Meher's father, Balaram Meher, started work in this technique. In Gangadher Meher's time simple deuli and ghagra designs were being woven in tie and dye technique. They also repeated the legend that the Mehers came from Delhi.

Lingaraj Meher of Sonepur town informed that his ancestors came to Sonepur about seven generations back and they belong to the same Meher community of Bargarh, Barpali and Sambalpur. He further supported the statement of Jagabandhu Meher that only simple tie and dye fabrics with border and pallav were woven in early days and the motifs used were lion, tiger, lotus, fish, elephant, conch and creeper. These motifs are still popular and their form and layout are different from those of Gujarat, Andhra Pradesh and Indonesia.

Some other weavers of Berhampur who settled down at Sonepur a few years ago have learnt to weave tie and dye fabrics on loom but they are unable to tie and dye warp or weft. This is done by Bhulia Mehers.

K. Acharya of Bargarh has been a master weaver for a long time. Previously he managed a weaving factory and a handloom organisation which he has converted now to Sambalpuri Bastralaya Handloom Weavers' Co-operative Society and has become its president. This is the biggest handloom weavers' co-operative society in Orissa. On being questioned about his profession he observed as follows. " I

have been engaged in the manufacture of tie and dye fabrics since about fifty years. The Bhulia weavers have been weaving tie and dye fabrics from the beginning of my organisation. They were, however, weaving coarse fabrics with very simple tie and dye designs. Weaving of complicated designs has developed gradually. Saktapar and Bichitrapar sarees are the traditional fabrics woven in this part of Orissa. The border is invariably in warp tie and dye and pallav in weft tie and dye. In Saktapar both warp and weft are tied and dyed for the body."

Although the Bhulia weavers migrated to Orissa long ago, they have still preserved their own dialect which is very much influenced by Chattisgarhi dialect of Madhya Pradesh. According to George Grierson, Kalanga and Bhulia use a Chattisgarhi dialect but they use Oriya script(26).

R.N. Mehta(27) suggests that the Bhulia weavers of Orissa are known as Devangas. Motichandra(28) suggests the possibility of Devang, mentioned in Jyotirisvara, being brocaded silk, either imported from Persia or woven in Orissa. However this tradition is not supported by the Bhulia weavers in Orissa.

The Bhulia Meher weavers, settled in the old feudatory states and now in the districts of Sambalpur, Bolangir, Boudh, Kalahandi and Sundergarh are not original inhabitants of the place. They probably came from some area near Delhi viz. Madhya Pradesh. They are concentrated in the Bargarh sub-division of Sambalpur and Sonepur sub-division of Bolangir districts.

Bargarh is the main town of Bargarh sub-division. It has a railway station named Bargarh Road on the Jharsuguda-Titlagarh railway route. It is a commercial town and is 60 kilometers from Sambalpur town (District headquarters) by road.

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Sonepur is the main town in Sonepur sub-division. It is not on a rail route. It is 52 kilometers from Bolangir town (District headquarters) and is on the bank of river Mahanadi.

Most of the villages in Bargarh sub-division and Sambalpur district have tie and dye workers. Similarly most of the villages in the Sonepur and Bolangir sub-divisions have tie and dye weavers.

The tie and dye technique in this area does not seem to have been introduced from outside though it is not known how it originated in this area. Most probably simple spot and line designs (Deuli and Ghagra) were formed on yarn by tying and dyeing a bunch of coarse weft threads for one piece of fabric in the same manner as simple designs in different colours are formed on plain fabrics by tying and dyeing (Bandhani), the idea being a simple one and prevalent in many parts of the world.

The technique has greatly improved and attained a very high level due to the patronage extended to it by the local people. The reason for such patronage is not far to seek as the feudatory states were not easily accessible to mill-made textiles owing to poor communication. The people of these areas patronised colourful fabrics manufactured within their easy reach and in course of time developed a taste for tie and dye fabrics; this preference for such fabrics is

still seen among the women folk of these areas. Previously only coarse fabrics were woven but within the last 30 years finer count yarn is being used for the manufacture of such fabrics. Some of the weavers can even produce fabrics of 150^s count. Efforts have also been made to weave tassar silk and mulberry silk fabrics in ikat technique. Tassar scarfs, tassar and silk sarees with ikat motifs have been produced. Cotton tie and dye, however, is the main occupation of Bhulia weavers.

The Gaudia Patra and Asani Patra weavers weaving in ikat technique are settled in Nuapatna (Tigria) area of Athgarh sub-division of the coastal district of Cuttak.

These weavers have been there for several generations. One of the weavers, Jagannath Kotual could remember the names of his forefathers upto eight generations. It is a convention in each family of keeping a small piece of fabric woven by each member of the forefathers upto last seven generations. When the death occurs of the head of the living family his successor adds his fabric, removing the fabric woven by the earliest forefather and immerses it in holy rivers. These small pieces of fabrics were seen with Jagannath Kotual. These fabrics, apparently imbued with some magical belief, are kept in sacred places and are not ordinarily brought out for inspection. A meeting of the weavers of Nuapatna village, however, permitted the display of the fabrics for our benefit. The pieces were generally of silk and one or two were of tassar. There was no cotton piece. Each one of these pieces had tie and dye weaving although the older pieces were tender, thready and the designs almost disintegrating. Some weavers have preserved samples which are handed over from generation to generation. We managed to collect some such pieces. An old weaver Panchu Kotual could not inform whether the weavers were indigenous or came from other places though he was emphatic that they existed there for many generations. He himself was a Gaudia Patra. This community had a guru hailing from Nabadwipadham of West Bengal, who was visiting them once in a year but had not visited them for the last 20 years.

The surnames of the weavers from Nuapatna are as follows:

- 1) Kotual 2) Ash, 3) Behera, 4) Guin, 5) Paramanick, 6) Naha,
- 7) Tosh, 8) Patra, 9) Kundu, 10) Pal, 11) Singha, 12) Das, 13) Chand,
- 14) Nag, 15) Sila, 16) Sena, 17) Parida, 18) Pandit, 19) Nana and
- 20) Debata.

Out of the above, the first six are Gaudia Patras and the next thirteen are Asani Patras. A very small number of the weavers claim themselves to be Buddhists. Patra is another word for weaver in Orissa. Patras are traditionally weavers. Risley(29) describes them as cocoon weavers. These surnames are like those of Bengalis e.g. Kundu, Ash, Guin, Paramanick, Naha, Nag, Sena (Sen) etc.

Our visit to Nabadwipadham and enquiry with the old weavers did not throw any fresh light on the weaving in tie and dye technique there. As a matter of fact, this technique was totally absent there and had no history whatsoever. They also did not know about the migration of weavers from that place to Orissa. The weavers of Nabadwipdham only weave fine dhotis, including Kanchi dhotis.

As mentioned earlier the tie and dye technique is known as 'bandha' in Orissa. Motichandra and R.N. Mehta(30) have indicated that vandh fabrics, viz. Gajavandh and Suryavandh appear in Jyotirisvara's Varna Ratnakara of 14th

century which was written in Eastern India (Bihar) and Mehta suggests that Gajavandh and Suryavandh were woven in Orissa.

The earliest historical document(31) referring to the ikat weaving in Nuapatna area belongs to Ramchandradev the second, who ruled over Puri which dates back to 1641 Sakbda, i.e. 1719 A.D. This document forms a part of Madala Panji or the daily diary of activities in the temple of Lord Jagannath written from time to time by Deula Karanas or temple clerks. Sadashiv Rathasharma of Puri, a devotee of Lord Jagannath and a scholar in his own right has supplied to us the following legend:

"Jayadeb the great poet (12th century A.D.) desired to offer his Gitagobinda to Lord Jagannath. He could not think of any other medium except a fabric which could be in contact with the Lord similar to other fabrics offered Him by the devotees. He decided to get the fabrics with lyrics of the Gitagobinda woven in them. He got them woven in Kenduli village which was his birth place and offered them to the deities, Jagannath, Balabhadra and Subhadra. Later the king of Puri issued an order, placing the supply of these Gitagobinda fabrics, to Nuapatna instead of Kenduli. Since it was not possible to get the entire Gitagobinda woven in such fabrics, only one sloka is woven in each piece. This sloka is the first sloka under third sarga which reads as :

"Kansarirapi Sansara-basanabandh-srunkhalam
Radhamadhaya hrudaye tatyaja braja sundarh".

However, this statement of Sadashiva Rahtasharma could not be corroborated. Therefore the only historical document is the order of Ramchandradev, the second, mentioned above. The order directs that Bandha Gitagobinda set of clothes previously being woven by Kenduli weavers could not be done there and therefore the order was to be placed with the eight brothers weavers of Nuapatna (Tigria) and they were to be remunerated for their labour by Shreekhetra by way of Bhoga-prasad and other gifts. The fabrics are called 'Phetas' in the temple of Lord Jagannath.

There is no weaver in Kenduli village at present. However there are many weavers in the village Kakarudrapur 3 kilometers from Kenduli, on the bank of the River Kushavadra. But they do not follow tie and dye technique. However the weavers belong to Gaudia Patra class; same as the weavers at Nuapatna (Tigria) area, who weave tie and dye fabrics.

Thomas Motte(32), who visited Nuapatna area in 1766 A.D., gives an account of the weavers settled there. "Opposite this part of Bankey (meaning Banki) on the other side of the river, is the Chucla of Tigorea (meaning Tigria), the Rajah of which is named Chumpat Singh (meaning Chumpati Singh). This Rajah has taken great pains to improve his country by keeping it in a state of tranquility. When Sheo Butt laid waste the Zammendaries of Dinkanol and Burruma (meaning Dhenkanal and Baramba) because they did not pay their rents, Chumpat Singh invited the weavers who fled from thence, to settle in his capital. Nio Patna (meaning Nuapatna in Tigria) granted them extraordinary privileges and has since given all possible encouragement to merchants".

Among silk tie and dye fabrics depicting various motifs woven in Nuapatna

area the Gitagobinda fabric(33) is still woven for the Jagannath temple. The fabric is woven in three main colours. According to Sadashiva Rathasharma of Puri, the yellow coloured fabric is for Lord Jagannath symbolising salvation, the green coloured fabric for Balabhadra symbolising life and the red coloured fabric for Subhadra signifying power or shakti. Previously these fabrics were woven with the sloka of Jayadev in Devnagri script in tie and dye but later on Oriya script has been substituted. But for the sloka, the fabric is plain.

One of the most popular motifs used in the fabrics of Nuapatna area is the elephant (Gaja), particularly in the khandua (odani/udni) used by brides at marriage time. Jyotirisvara's Gajavandh(34) is likely to be Gajabandha of Nuapatna area. The tie and dye technique in silk (mulberry and tassar) in the area is old while tie and dye in cotton has been adopted from Sambalpur area and introduced here by a master weaver Arjun Subuddhi in the middle of the present century. Large and small stars, elephant, deer, parrot, nabagunjara, lotus and other flowers, creeper, kumbha (small triangles), danti (tooth-like) patterns have been used since long in silk fabrics and are still common. The same motifs are also used in cotton fabrics. The motifs, their forms and layout are completely different from those in Gujarat, Andhra Pradesh and Indonesia. Vegetable dyes were applied and the colours of red, yellow, chocolate, black and green were the main colours used. With the advent of synthetic dyes, vegetable dyes are no longer used and more colours like blue, orange and other mixed colours have come into use. The earthen dye pot(35) used for vegetable dyes is very carefully preserved and worshipped. The Gaudia Patras and Asani Patras worship all Hindu deities.

The tie and dye weaving existed in Nuapatna area in 1719 AD and much before in Kenduli. It is possible that the tie and dye weaving was in existence in Nuapatna area as early as in 12th or 13th century AD. However it is difficult to trace the development of the technique in this area, though it is possible that it started from simple design. It seems that the growing demand for such kind of fabrics in the temples and Hindu marriages gave the industry an impetus. The Bengali surnames of some of the weavers may be due to the fact that some parts of Orissa were under Bengal under the British rule and they must have adopted Bengali surnames. There is however no doubt that the weavers are of local origin. Although the tie and dye on silk is very ancient, the tie and dye on cotton has been introduced during the middle of the present century.

The ikat technique of Andhra Pradesh, is in a highly developed stage. The weavers are Padmasalis and Devangs who have attained a high degree of skill in weaving double ikat fabrics. They are of Dravidian origin and their language is Telugu. They wear sacred threads and worship Shiva, Vishnu, Naga (serpent) and trees.

No written document is available on the origin of the technique or its evolution in this area. The technique of ikat weaving is followed in Chirala and Pochampalli and near-about areas.

Chirala is a town on the rail route from Vijayawada to Madras. One Gunti Bhaskar Rao, a master weaver is still doing tie and dye and manufacturing cotton rumals which are known as Telia rumals, Chowkas and Asia rumals. His father, the late Chinna Subbaraidu was weaving rumals and was exporting

them to Aden in 1936. Some of the fabrics woven by his late father are still with him and are more than 40 years old. He has no knowledge whether his grandfather wove tie and dye fabrics. According to him one weaver Pennmukhi Kesavalu, whose birth place was unknown, was weaving double ikat fabrics and was exporting them to Arab countries and to areas now in Pakistan and in Bangladesh. The Arab merchants had direct contact with the coastal parts of South East India specially for purchasing textiles in exchange for spices in Malayasia. Kesavalu who was considered to be a master craftsman developed the technique. He went to Hyderabad and died there. At present about 100 weavers are reported to be knowing tie and dye weaving, while only 10 weavers are now engaged in it at times in Chirala for weaving of rumals. According to one female weaver Ravuri Akkala Sithamma (aged 78) who is weaving rumals even now for Gunti Bhaskar Rao, her father-in-law Ravuri Akkala Narasimham was weaving such fabrics in his time and she had no knowledge about her grandfather practising this technique. She weaves sixteen chowkas in 20 days on a wage of Rs. 1.50 per piece while the youngsters can complete sixteen chowkas in 8 days.

Among the villages within 20 kilometres from Chirala only one village Jandrapeta had tie and dye weaving of rumals some 30 years ago. According to one weaver Panyaru Chandramouli (aged 45), his father was weaving tie and dye fabrics and sent to the areas now in Western Pakistan. As the wages were poor, the process complicated and wages for other simple types of fabrics for Madras and Hyderabad were more remunerative, he left weaving tie and dye fabrics.

A co-operative society at Perala, a part of Chirala which was manufacturing the Asia rumals is now dormant. In the telia rumals of Chirala alizarine dyes are used and the rumals smell oily. The dyes, red and pink run on to adjacent portions in the fabric. Geometric motifs were used previously. Motifs such as animal, bird, aeroplane, flower, clock, etc. have been recently introduced. The weave of the rumal is compact. The rumals were mostly exported. Locally they are used by fishermen as their lower garment. Some use them as turbans.

Pochampalli is a large village about 55 kilometres from Hyderabad by road on way to Madras. This village is now the chief centre for weaving ikat fabrics. According to one weaver, Sithasetti Narasaiyya (aged 75) the technique was taken from Chirala and introduced in the village during his father's time. His grandfather did not know weaving in ikat technique. From Pochampalli the technique has spread over to the villages near about. According to the weavers of Pochampalli there has been no social relation between the weavers of Chirala and those of Pochampalli. Although rumals were being woven in Pochampalli previously (36), the weavers have ceased producing them as the rumals are not at present in demand. Only fishermen use them. They were produced mostly for outside markets only. They have adopted the technique first in cotton Jananis (long saree 7.32 metres), dupatties (worn by muslim women over their skirt and blouse), cotton Mardans (turbans) and in sarees. The technique has also recently been adopted in silk materials viz. sarees which have a great demand. Unlike the weavers of Chirala, the weavers of Pochampalli and near-about use modern synthetic dyes in rumals and other fabrics. The rumals do not smell oily nor do the colours, red and pink, which run on to adjacent portions.

Pupul Jayakar(37) indicates that in the year 1915 two brothers, Mallish and Venkish of the Karmakad family of the Padmasalis came from Chirala and introduced this technique to Pochampalli weavers. The source of the information has not, however, been disclosed.

The patola fabrics of Cambay which were exported to Malacca via Pegu in Burma as stated by Durate Barbosa (1619 AD) were, according to Mittal(38), sent to Pegu through Masulipatam, the seaport of Andhra Pradesh and he suggests the possibility of influence of patola of Gujarat on the technique of tie and dye in Andhra Pradesh.

Mittal has also carefully indicated the difference between Chirala and Pochampalli rumals which suggests that they are indigenous to the respective places.

The tie and dye weaving in Andhra Pradesh is not very old. The technique was not known before two generations of the weavers. The technique has originated and developed during the present century. There is a possibility of influence of patolas of Gujarat on the development of the ikat fabrics of Andhra Pradesh. The origin of the technique in Pochampalli is much later than that in Chirala and has been influenced by the ikat rumals of Chirala.

In order to have a clear knowledge about the fabrics of Orissa and Andhra Pradesh an analytical study of the old and contemporary fabrics, a discussion on the principles of technology and their application and a comparative analysis have been made on the basis of information available at various places visited. An attempt has also been made to provide brief outline on the socio-economic conditions of the weavers of these places.

Analysis of old fabrics of Bargarh and Sonepur area :

Plate 1

Calico Museum of Textiles No.2267

Cotton Dasphulia Saktapar domuha saree, Bargarh-Sonepur area, Early 20th century.

Ends per cm.	... : 20 double	Length : 3.84 mtrs.
Picks per cm.	... : 19	Width : 93 cms.
Count of warp & weft	: 20 ^s	

The layout or field of the saree comprises warp way (longitudinal) stripes in the main body and border and weft way (transverse) stripes in broad pallavs at each end.

The warp way (longitudinal) stripes of the main body are composed of two main wide tie and dye stripes flanked evenly by comparatively narrow tie and dye stripes and very fine plain stripes with a tie and dye stripe running at the centre of the fabric. The tie and dye stripes are without design in the pallav portion. The border at each end is composed of two longitudinal stripes of woven design with one longitudinal stripe of tie and dye in between and 1.3 centimetres wide plain selvedge.

The cross border (pallav) portion has a tie and dye central transverse stripe flanked evenly on either side by comparatively

narrower tie and dye and fine plain stripes. The tie and dye transverse stripes are without design in the border portion and the plain stripes run through the border. The pallav begins after 30.5 centimetres of plain fabric from the end. The longitudinal stripes can be numbered as given below :

- | | |
|---|--|
| 1. Selvedge | 28. Extra warp narrow stripe |
| 2. Extra Warp narrow stripe | 29. Tie and dye narrow stripe |
| 3. Half fish stripe - Extra warp | 30. Tie and dye narrow stripe |
| 4. Extra warp narrow stripe | 31. Extra warp narrow stripe |
| 5. Full fish stripe - Extra warp | 32. Extra warp narrow stripe |
| 6. Extra warp narrow stripe | 33. Tie and dye narrow stripe |
| 7. Full fish stripe - Extra warp | 34. Tie and dye dice board pattern wide stripe |
| 8. Extra warp narrow stripe | 35. Tie and dye narrow stripe |
| 9. Full fish stripe - Extra warp | 36. Extra warp narrow stripe |
| 10. Extra warp narrow stripe | 37. Extra warp narrow stripe |
| 11. Half fish stripe - Extra warp | 38. Tie and dye narrow stripe |
| 12. Extra warp narrow stripe | 39. Tie and dye narrow stripe |
| 13. Tie & dye stripe of fish, duck and deer | 40. Extra warp narrow stripe |
| 14. Extra warp narrow stripe | 41. Extra warp narrow stripe |
| 15. Half fish stripe | 42. Tie and dye <u>dali</u> stripe |
| 16. Extra warp narrow stripe | 43. Extra warp narrow stripe |
| 17. Full fish stripe - Extra warp | 44. Extra warp narrow stripe |
| 18. Extra warp narrow stripe | 45. Tie and dye narrow stripe |
| 19. Full fish stripe - Extra warp | 46. Tie and dye narrow stripe |
| 20. Extra warp narrow stripe | 47. Extra warp narrow stripe |
| 21. Full fish stripe - Extra warp | 48. Extra warp narrow stripe |
| 22. Extra warp narrow stripe | 49. Tie and dye <u>kangula</u> stripe |
| 23. Half fish stripe - Extra warp | 50. Central tie and dye stripe of fish, duck and deer. |
| 24. Extra warp narrow stripe | 51. 98 the stripes repeat in the reverse manner |
| 25. Plain red narrow stripe | 99. Selvedge |
| 26. Tie and dye stripe | |
| 27. Extra warp narrow stripe | |

It will be observed that there are in all 97 longitudinal stripes, out of which 27 are tie and dye stripes and 70 are extra warp stripes.

Similarly the pallav consists of transverse stripes of 29 weft tie and dye stripes flanked by extra weft narrow stripes on either side of each tie and dye stripe.

The extra warp longitudinal stripes cross the pallav portion but the tie and dye longitudinal stripes have no tie and dye figure when they cross the pallav portion in order that they do not spoil the figures in the pallav. The extra warp fish border changes to a border of simple spike figures in the pallav portion.

The overall outlook is stripes brilliantly combining the woven figuring with tie and dye designs with dice pattern of white and red square on red ground with faint blue check and white and red squares on blue ground alternating in the same stripe to break the monotony of stripe to some extent. The other tie and

dye stripes have simple small figures of flower, creeper, duck, fish, deer, spots and kangula (triangular spots) in the longitudinal as well as transverse stripes on dull red or blue ground. The outline of all tie and dye figures is white. The resultant fabric is rich.

The sarees have wide pallavs on either end. These sarees are woven normally in little less than four metres in length and little less than one metre in width. This typical fabric is called Dasphulia Saktapar domuha saree. Dasphulia indicates 10 rows of figured woven design in the border and Saktapar indicates dice board pattern tie and dye design. Domuha indicates two pallavs.

Plate 2 Calico Museum of Textiles No.2226
Cotton Dasphulia Bichitrapar domuha saree, Bargarh-Sonepur area, Early 20th century.

Plate 2 shows another cotton fabric of similar layout except that the longitudinal wide dice stripes are substituted by check and butis on blue or black ground giving extremely rich ornamental fabric. The fabric is very appropriately called Dasphulia Bichitrapar domuha saree meaning full of beautiful designs.

The above two examples indicate the basic layout, motif and colours used in old tie and dye fabrics of Bargarh and Sonepur area.

Plate 3 Calico Museum of Textiles No.2229
Cotton butta kumbha domuha saree, Bargarh-Sonepur area, Early 20th century.
Ends per cm. : 20 double Length : 4.32 metres
Picks per cm. : 25 double Width : 98 cms.
Count of warp & weft : 60^S (estimated)

Plate 4 Calico Museum of Textiles No.2266
Cotton Chhaphulia check butta domuha saree, Bargarh-Sonepur area, Early 20th century.
Ends per cm. : 20 double Length : 3.83 cms.
Picks per cm. : 20 Width : 1.01 metres
Count of warp : 60^S Count of weft : 36^S

Plates 3 and 4 are also old designs on cotton and are of similar layout as that of plate 1 except that butis have taken the place of stripes in the body. Nevertheless, the stripe effect of the main body is still maintained.

Plate 3 has minor modification in that woven temple designs (Kumbha) project from the inside of either border towards the main body. These woven temple designs are also very popular and sometimes this design is also brought out by warp or weft tie and dye. There are woven butis. The body of the saree is in violet colour. Colours used for the figures in tie and dye are green, red, deep chocolate and light chocolate. Woven figures are in red, yellow, green and white.

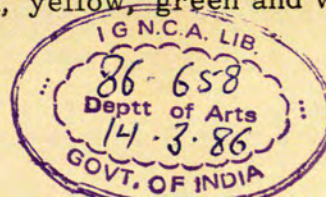


Plate 4 gives a check and stripe effect in the main body and end of the pallav. It is a combination of woven checks and butis. The body of the saree is in deep maroon colour, tie and dye figures are in deep chocolate and white, the stripes with butis in pallav are in green and blue and the border is in black colour. Woven figures in the border are in natural colour.

Ekmuha (one pallav) sarees were also made in the above designs.

- Plate 5 Calico Museum of Textiles No.2232
Cotton Sadha bandha domuha saree, Bargarh-Sonepur area,
Early 20th century.
Ends per cm. : 20 Length : 83 cms.
Picks per cm. : 24 Width : 76 cms.
Count of warp & weft : 26^s
- Plate 6 Calico Museum of Textiles No.2228
Cotton Dasphulia kumbha domuha saree, Bargarh-Sonepur
area, Early 20th century.
Ends per cm. : 19 double Length : 3.95 metres
Picks per cm. : 23 double Width : 95 cms.
Count of warp & weft : 40^s
- Plate 7 Calico Museum of Textiles No.2233
Cotton Duiphulia domuha saree, Bargarh-Sonepur area.
Ca. 1900 A.D.
Ends per cm. : 18 double Length : 1.31 mts. (cut piece)
Picks per cm.: 21 double Width : 82 cms.
Count of warp & weft : 40^s
- Plate 8 Calico Museum of Textiles No.2234
Cotton Baraphulia domuha saree, Bargarh-Sonepur area,
Late 19th century.
Ends per cm. : 19 Length : 1.07 mts. (cut piece)
Picks per cm.: 18 double Width : 72 cms.
Count of warp & weft : 30^s
- Plate 9 Calico Museum of Textiles No.2230
Cotton Dasphulia danti domuha saree, Bargarh-Sonepur area,
Early 20th century.
Ends per cm. : 20 double Length : 3.70 metres
Picks per cm.: 21 Width : 92 cms.
Count of warp : 60^s estimated Count of weft : 30^s estimated

Plates 5, 6, 7, 8 and 9 (old cotton designs) are typical in having body plain, while the rest of the layout of border and pallav is not much different from the previous plates.

Plate 5 has plain stripe border. The figures in Pallav are fish and flower in green and red colour. The body of the saree is blue.

In plate 6, kumbha is woven and is in black colour (not tied and dyed). Main body is white with no design. The figures in the pallav are in deep chocolate, maroon and white colours.

In plate 7, the main body is plain in blue colour. Colours used for the border and pallav are blue, mauve, green, deep chocolate and red.

In plate 8, the main body is plain in orange colour with woven Kumbha projecting from the border on either side. Weft tie and dye stripes are in blue and red colour and white outline.

In plate 9, danti in the form of spikes is projected from inside the border towards the body. The body is plain and in blue colour. The figures are in red, deep chocolate and white colours. The woven figures in the border are in natural colour (white).

Analysis of old fabrics of Nuapatna area :

Plate 10

Calico Museum of Textiles No.2271

Silk Nakshatrabhusana saree, Nuapatna area, Ca. 1900 A.D.

Ends per cm. : 29

Length : 6.10 metres

Picks per cm. : 26

Width : 1.13 metres

Count of warp & weft : 16/18 Den. 6 fold (estimated)

Although the all-over effect has been brought out by alternate spacing of the tie and dye bold star-shaped figures, the stripe effect still remains particularly with the tie and dye parrot figures on either side of the main body. The border is in stripes of extra warp figures combined with tie and dye spots, temple and buds projecting towards the main body. The pallav is in transverse stripes of extra weft figures.

The colour of the body is pinkish red. The star (nakshatra) - shaped figures are brought out in deep chocolate coloured ring with a natural silk colour central spot and spikes. The parrots and temples and spots are in natural silk colour. The centres of the buds are in deep chocolate colour. The colour scheme is very rich.

The tie and dye figures are in weft tie and dye.

Plate 11

Calico Museum of Textiles No.2272

Silk Nakshatramala saree, Nuapatna area, Ca. 1900 A.D.

Ends per cm. : 29

Length : 6.10 metres

Picks per cm. : 26

Width : 1.13 metres

Count of warp & weft : 16/18 Den, 6 fold (estimated).

It is of almost similar type as that in plate 10 except that the star-shaped figures are small and almost four times in number in unit area for which the fabric is known as nakshatramala. Border is of extra warp figures and pallav is of extra weft figures.

The colour of the saree is red, and the tie and dye figures are in natural silk colour and buds are with red centre.

Plate 12

Calico Museum of Textiles No. 2269

Silk Tarabali saree, Nuapatna area, Ca. 1900 A.D.

Ends per cm. : 24

Length : 6.36 mts.

Picks per cm. : 23

Width : 99 cms.

Count of warp & weft : 16/18 Den. 6 fold (estimated)

The layout of the body is formed of tie and dye rectangular spots arranged in rows forming diamond figures with tie and dye floral figure at the centre of each diamond figure. Even then the stripe base is not altogether lost. The border is composed of extra warp woven design combined with stripe of weft tie and dye spots and temple figures projecting towards the body. In between the diamonds at the border are placed figures of parrots. The pallav is in transverse stripes of extra weft figures.

The colour of the body is red. The rectangular spots in rows are in natural silk colour and green colour. The flowers are of natural colour outline and petals alternately filled with colour. The kumbha is in natural colour.

The tie and dye is in weft.

Plate 13

Calico Museum of Textiles No. 2281

Silk Muktajhari khandua pattern sample, Nuapatna area, Late 19th century.

Ends per cm. : 25

Length : 93 cms.

Picks per cm. : 21

(sample)

Count of warp & weft : 16/18 Den. Width : 99 cms.
6 fold (estimated)

Plate 14

Calico Museum of Textiles No. 2277

Silk Muktajhari khandua pattern sample, Nuapatna area, Ca. 1900 A.D.

Ends per cm. : 23

Length : 1.25 mts.

Picks per cm. : 26

(sample)

Count of warp & weft : 16/18 Den. Width : 1.15 mts.
6 fold (estimated)

Plates 13 and 14 are sample designs of khandua (odni) used by brides in wedding. The fabric is of silk composed of stripes of tie and dye creeper, flower and bird in the centre flanked by stripes of bold animal and bold floral tie and dye figures in squares. The central creeper and flower pattern is called Muktajhari. The colour scheme is bright. In plate 14 the colour scheme is sober, with

natural silk colour figures on greenish yellow ground, while in plate 13 the figures are in natural silk colour outline having bright maroon colour in the body. The head of the elephant is in deep chocolate colour, legs are in blue and natural colour, ear of the horse is in blue colour, spots on the deer are in blue colour and flowers have blue and red.

It is important to note the animal forms. The magarmuha shape of the head of the elephant is artistic. The shape of the mayamriga is remarkable. The peculiar shape of the third figure nabagunjara is composed of as the weavers report, limbs of nine living things namely legs of elephant, paws of tiger, hand of man, head of the cock, neck of peacock, body of snake as tail, parrot like face, Lion's mane and body of Ox. The figure is very clear in plate 17. The brilliantly sharp and bold flowers are also note worthy. The design is harmonious and rhythmic. The tie and dye is in weft.

Plate 15

Calico Museum of Textiles No.2279

Silk Khandua pattern sample, Nuapatna area, Ca. 1900 A.D.

Ends per cm. : 25

Length : 49 cms. (sample)

Picks per cm. : 27

Width : 1.26 metres

Count of warp & weft : 16/18 Den. 6 fold (estimated)

This is a sample design of khandua where the central stripe is formed of tie and dye diamond made out of rectangular spots as in plate 12. The tie and dye figures are in natural colour. The border is in extra warp floral figures. The tie and dye is in the weft.

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Plate 16

Calico Museum of Textiles No.2278

Tassar Khandua pattern sample, Nuapatna area, Ca. 1850 A.D.

Ends per cm. : 18

Length : 1.19 mts. (sample)

Picks per cm. : 17

Width : 1.56 metre

Count of warp : 16/18 Den. 4 fold
(estimated)

Count of weft : 20/22 Den.
(estimated)

This is a sample design of Tassar khandua with slight modification in border in which one stripe of tie and dye is included. The tie and dye is in weft. Colours used are deep chocolate for the body and blue, green and natural colour for the figures. The plain middle stripe is yellow.

Plate 17

Calico Museum of Textiles No.2275

Silk sample of motifs, Nuapatna area, Ca. 1900 A.D.

Ends per centimetre : 32

Length : 78 cms. (sample)

Picks per cm. ... : 21

Width : 1.29 metre

Count of warp & weft : 16/18 Den. 6 fold (estimated)

This is a sample design piece of some of the motifs used with different colour in tie and dye in weft. Colours used are deep chocolate for the body and blue, green and natural colour for the figures. The woven designs in the border are in natural colour.

This is a tassar saree of plain body with extra warp flower border combined with weft tie and dye rectangular spots and kumbha. The pallav is of transverse stripes of extra weft figures. The tie and dye is in weft. Colours used are maroon for the body and natural colour for the kumbhas.

As already mentioned a remarkable silk fabric was found in the area with sloka of Gitagobinda written in tie and dye in Oriya in the main part of the fabric. Plate 19 shows sample piece of such fabric. Such fabrics were offered to three deities in the temple of Lord Jagannath at Puri which is continuing even at present. These fabrics are now woven without the figures in the border (plate 19a). The tie and dye is in weft. Colours used are maroon for the body and yellow, green, blue and maroon for the figures.

Colours used are red for the body, green for the central stripe and natural colour for the script.

Plate 20 shows a sample of a silk fabric specially woven during the coronation of King George VI. The script is in English. The tie and dye is in weft. Colours used are maroon for the body, natural colour for the script and green for the border.

There is another old design, an old sample of which could not be obtained. It is called a kothari saree. However this design is still in vogue and is included under contemporary fabrics.

Analysis of contemporary fabrics of Bargarh-Sonepur area :

- Plate 21 Calico Museum of Textiles No.2455
Cotton skirt border Baghambari saree, Bargarh, 1973.
Body : Brown
Ends per cm. : 29 Length : 5.49 mtrs.
Picks per cm.: 32 Width : 1.21 mtrs.
Count of warp : 2/120^s Count of weft : 2/120^s
- Border Extra warp fish and flower 10 rows (stripes) with one wide stripe of warp tie and dye on black ground with deer, fish and duck figures at the centre, and one black and red wide warp tie and dye dali stripe and two narrow extra warp and two narrow warp tie and dye narrow stripes form the wider border on one side and only extra warp fish and flower 5 rows and a few plain narrow stripes form the narrower border on the other side. This is known as skirt border. The figures of fish and flower change to only flower in the pallav portion.
- Body Layout is in stripe form of four rows of warp tie and dye bold flowers of white, green, red and yellow petals, heart-shaped white and green weft tie and dye figures with red spot at the centre and white triangular weft tie and dye figures, each row flanked on either side by warp and weft tie and dye white line squares.
- Pallav The pallav is in transverse weft tie and dye stripes of dali, duck, horse, kangula, kaudi and spots almost like the pallavs of Saktapar or Bichitrapar sarees. The stripes are in red figures on black ground.
- Plate 22 Calico Museum of Textiles No.2451
Cotton skirt border Baghambari saree, Bargarh, 1973.
The particulars are same as of 21 except that body is white and the squares are in green lines.
- Plate 23 Calico Museum of Textiles No.2452
Cotton skirt border saree, Bargarh, 1973.
Body : Golden yellow
Ends per cm. : 29 Length : 5.49 metres
Picks per cm.: 25 Width : 1.21 metres
Count of warp : 2/120^s Count of weft : 2/120^s
- Border Black border with three rows of extra warp rudraksha motifs on one side and six rows of extra warp rudraksha motifs with three wide tie and dye stripes at the centre on black ground on the other. The tie and dye stripes are warp tie and dye of fish, flower and other decorative motifs in green, red, yellow and white.
- Body Typical transverse weft tie and dye wide and narrow stripes all over of white, green and red fish, white and red flowers, white, green and red kangula and kaudi and white and black spots.

- Pallav** Transverse stripes of weft tie and dye of similar matching pattern and colour as the wider border on black ground and a few extra weft tie and dye decorative stripes of dali, kaudi etc.
- Plate 24** Calico Museum of Textiles No. 2440
Cotton stripe than saree, Bargarh, 1973.
Body : Copper colour
Ends per cm. : 31 Length : 5.49 mtrs.
Picks per cm.: 33 Width : 1.21 mtrs.
Count of warp : 2/120^s Count of weft : 2/120^s
- Border** There is no border.
- Body** Layout is in transverse weft tie and dye wide and narrow stripes of decorative and fish flower motifs with red, black, yellow, green and white colour on black ground on a body of copper colour.
- Pallav** There is no pallav as such.
- Plate 25** Calico Museum of Textiles No. 2446
Cotton skirt border Bichitra saree, Bargarh, 1973
Body : White
Ends per cm. : 30 Length : 5.49 mtrs.
Picks per cm.: 30 Width : 1.21 mtrs.
Count of warp : 2/120^s Count of weft : 2/120^s
- Border** Six rows of extra warp fish and flower figures with about 3.8 cms. warp tie and dye stripe of decorative blue, red and white figure on black ground on one side and of similar layout on the other except that it is wider as in skirt border and the central tie and dye stripes on black ground are three in number, one central decorative warp tie and dye design of red, blue, yellow and white colour flanked by one row of warp tie and dye dali and kangula on either side. Extra warp fish and flower design in the border changes to only flower design in the pallav position.
- Body** Layout is in longitudinal stripes of large white squares with black outline and red and black flower at the centre alternating with green 3.8 cms. (approximate) squares with black outline and white squares where the transverse black outline crosses the longitudinal black outline brought about by tie and dye in both warp and weft. It will be noticed that the outline of the white spot is not at all sharp.
- Pallav** Weft tie and dye transverse stripes of similar motifs to match the wider border on black ground.

Cotton Padmatola saree, Bargarh, 1973

Body : Black

Ends per cm. : 29

Length : 5.49 mtrs.

Picks per cm. : 30

Width : 1.21 mtrs.

Count of warp : 2/120^sCount of weft : 2/120^s

Border

Four small white extra warp rudraksha rows with a warp tie and dye stripe on black ground with decorative motifs in green red and white at the centre.

Body

Layout is in warp and weft stripes making beautiful large squares with central weft tie and dye decorative motif on black ground bounded by decorative lines bringing out bright yellow spots at the corners of the squares alternating with black squares with plain narrow white outlines and with central decorative warp tie and dye motif on either side right and left and similar black squares with weft tie and dye decorative motif on the top and bottom. Attempt has been made to break the stripe effect.

Pallav

Transverse weft tie and dye stripes of beautiful motifs of red, yellow, blue and white colours on black ground. The floral motif looks like a painted motif in expert hand.

Plate 27

Calico Museum of Textiles No.2444

Cotton skirt border Tapaswini saree, Bargarh, 1973

Body : Yellowish green

Ends per cm. : 28

Length : 5.49 mtrs.

Picks per cm. : 30

Width : 1.21 mtrs.

Count of warp : 2/120^sCount of weft : 2/120^sIndira Gandhi National
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Border

Border of extra warp stripes of small rudraksha and temple motifs with a warp tie and dye decorative stripe in green, red and white on black ground at the centre on one side and similar but wider border on the other side with a wider warp tie and dye stripe having another decorative and large motif.

Body

Layout is made up of broken warp and weft tie and dye stripes crossing each other making three different sizes of squares linked with each other all over the body presenting a continuous pattern of squares with deep blue corners where the warp and weft tie and dye stripes cross. The large squares have weft tie and dye motifs of green and white leaf or red and white flower at the centre. Attempt has been made to break the stripe effect by criss-crossing the warp and weft tie and dye stripes.

Pallav

Bold floral transverse weft tie and dye stripes matching in colour and motif with the border on black ground.

Plate 28

Calico Museum of Textiles No.2447

Cotton skirt border Kalpataru saree, Bargarh, 1973.

Body : Bluish green

Ends per cm. : 28

Picks per cm. : 31

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Count of warp : 2/120^sCount of weft : 2/120^s

Border

Two extra warp stripes of small rudraksha and temple motifs with a warp tie and dye stripe of white diamond motif on blue ground at the centre on one side and similar but wider border on the other side having two extra warp stripes, two warp tie and dye diamond stripes with a wide warp tie and dye stripe at the centre with flower and leaf decorative motifs in green, red, yellow and white colour on black ground.

Body

The layout is similar to that of fabric at plate 26. Warp tie and dye and weft tie and dye floral stripes cross each other. Broken diamond stripes of warp and weft tie and dye cross each other forming beautiful squares and rectangles with diamond criss-cross motifs and flower motifs. It is to be noted that decorative motifs are formed either by warp tie and dye or weft tie and dye and not by both. Here again an attempt has been made to break the stripe effect to make a check pattern. Since however the squares and rectangles are large the stripe effect is still noticed.

Pallav

Transverse weft tie and dye stripes of diamond and bold flowers similar to those in the border.

Plate 29

Calico Museum of Textiles No.2442

Cotton Mathamani saree, Bargarh, 1973.

Body : Bottle green

Ends per cm. : 28

Count of warp : 2/120^s

Length : 5.49 mtrs.

Picks per cm. : 31

Count of weft : 2/120^s

Width : 1.21 mtrs.

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Border

Two rows of extra warp stripes of small rudraksha and temple motifs with a warp tie and dye central stripe of flowers and squares of red, green, blue and white colours on black ground.

Body

Large squares made of warp tie and dye longitudinal stripe and weft tie and dye transverse stripe of diamond and kangula design of blue, red and white colour with brilliant yellow corners made up of both warp and weft tie and dye. Small and medium size weft tie and dye flowers have been put at the centres of squares alternating in blue, orange, red and white colours.

Pallav

The pallav is also in warp and weft tie and dye stripes forming squares with central floral motif almost similar to the body design having few transverse weft tie and dye stripes on either end of the check pallav.

Plate 30

Calico Museum of Textiles No.2449

Cotton Chandraudiya than saree, Bargarh, 1973.

Body : Blue

Ends per cm. : 27

Count of warp : 2/120^s

Length : 5.49 metres

Picks per cm. : 29

Count of weft : 2/120^s

Width : 1.21 metres

Border	There is no border.
Body	The layout is in the form of a colour carpet of squares and rectangles of various sizes in different shades of blue studded with weft tie and dye figures, warp and weft tie and dye figures and warp tie and dye geometric figures of red, white and yellow colour all over the body. It will be noted that the stripe effect particularly with tie and dye figures is still present.
Pallav	There is no pallav.
Plate 31	Calico Museum of Textiles No.2448 Cotton Asmantara than saree, Bargarh, 1973. Body : Blue Ends per cm. : 32 Picks per cm. : 32 Count of warp : 2/120 ^s Count of weft : 2/120 ^s Length : 5.49 mts. Width : 1.21 mts.
Border	There is no border.
Body	The layout is simple large squares formed with longitudinal warp tie and dye and weft tie and dye stripes of green and white diamond motif on blue ground and a bold white star figure with brilliant warp and weft tied red square centre. The square being large and the stars being bold the stars present stripe pattern.
Plate 32	Calico Museum of Textiles No.2445 Cotton skirt border Rekha saree, Bargarh, 1973. Body : Brown and white stripe Ends per cm. : 28 Picks per cm. : 28 double picks Count of warp : 2/120 ^s Count of weft : 2/120 ^s Length : 5.49 mts. Width : 1.21 mts.
Border	Two rows of extra warp small <u>rudraksha</u> stripe with warp tie and dye white fins on black body stripe on one side and six extra warp small <u>rudraksha</u> stripe with wide warp tie and dye stripe at the centre with white fins and decorative motifs at intervals on black body on the other side.
Body	The entire body is made up of four broad sections of white and brown longitudinal stripes alternating with three broad sections of white and brown transverse stripes. The longitudinal stripes are warp tie and dye stripes with longitudinal decorative long motifs on deep brown ground placed at intervals. Similarly the transverse stripes are weft tie and dye stripes with transverse decorative long and small motifs on deep brown body placed at intervals. The longitudinal sections and stripes are at right angles to the transverse sections and stripes.
Pallav	It is made of similar motif as in the border in transverse stripes in weft tie and dye flanked by narrow black and white stripes on either side on black body.

The general outlook is a body of lines, longitudinal and transverse.

Plate 33

Calico Museum of Textiles No.2443

Cotton skirt border Labanyabati saree, Bargarh, 1973.

Body : Green

Ends per cm. : 28

Picks per cm. : 30

Count of warp : 2/120^S

Count of weft : 2/120^S

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Border

Two rows of extra warp small rudraksha stripes with a warp tie and dye stripe of egg-shaped green motif with red centre spot and white outline on black ground in between on one side and similar border on the other side, except that it is wider and the warp tie and dye central stripe has two rows of egg-shaped green motif with red centre spot and white outline and another stripe of decorative motif of green, red, yellow and blue with white outline in between on black ground.

Body

The layout is of large squares made up of longitudinal warp tie and dye stripes of blue and white diamonds and red, yellow and white flower motif and similar transverse weft tie and dye stripes bringing out flowers in the corners of the squares. Inside the squares are placed red and white dice board motif of both warp and weft tie and dye alternating with a blue floral motif made of warp tie and dye, weft tie and dye and centre red spot with both warp and weft tie and dye.

Pallav

Wide transverse stripe of motifs similar to those in the border but in weft tie and dye on black ground flanked by few other transverse stripes of weft tie and dye like black and white dali, spots and black and white kaudi etc.

Plate 34

Calico Museum of Textiles No.2454

Cotton skirt border Saktapar saree, Bargarh, 1973.

Body : Black

Ends per cm. : 28

Picks per cm. : 27

Count of warp : 2/120^S

Count of weft : 2/120^S

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Border

Five rows of extra warp fish and flower stripes and three plain woven stripes, one black, one red and one white on one side and ten rows of extra warp fish and flower stripes with a warp tie and dye stripe of red and white, fish, duck, elephant and deer motif on black ground in between and an extra warp tie and dye red and white dali and spot stripe, on black ground, two spot warp tie and dye stripes and three plain woven stripes, one black, one red and one white on the other side. There are a few very narrow plain warp lines in the centre. This is almost of the same arrangement as in old Saktapar saree.

Body

It has broad transverse stripes of red and black colour alternating. Each stripe is divided into squares by white ribbon lines. Each red square has a large dice motif with red

and white squares and black line squares and each black square has a chess motif of red and white squares. The entire body and motifs are of both warp and weft tie and dye. The dice and chess motifs are similar to those of an old Saktapar saree.

Pallav

It is similar to that of old Saktapar or Bichitrapar saree having transverse weft tie and dye stripes of motifs of duck, flower, lion, creeper, kangula or kaudi in deep chocolate and white colour on red ground and in red and white colour on deep chocolate ground.

This saree is adapted from old Saktapar saree in fine count but has one pallav.

Plate 35

Calico Museum of Textiles No. 2453

Cotton skirt border Saktapar dega saree, Bargarh, 1973.

Body : Multi-coloured squares

Ends per cm. : 28

Picks per cm. : 27

Count of warp : 2/120^s

Count of weft : 2/120^s

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Border

Five rows of extra warp fish and flower stripes and three plain woven stripes, one black, one red and one white and black on one side and ten rows of extra warp fish and flower stripes with a warp tie and dye stripe of black and white fish, duck, elephant and deer and red and white flower on black ground in between and an extra warp tie and dye red and white dali and spot on black ground, two spot warp tie and dye stripes one in red and white and one in black and white and two plain woven stripes one black and one white on the other. This is almost of the same arrangement as in old Saktapar Saree.

Body

It is divided into large squares of different colours namely blue, yellow, green and red bounded by white ribbon lines. Each large blue square has a chess motif of white and red square and black line squares. Each yellow large square has a dice motif of white and green square and black line squares. Each large green square has a dice motif of white and red squares and black line squares. Each large red square has a chess motif of red and deep chocolate squares and black line squares. The chess and dice motifs are similar to those of an old Saktapar saree.

Pallav

It is similar to that of old Saktapar and Bichitrapar sarees having transverse weft tie and dye stripes of motifs of duck, flower, lion, creeper, kangula or kaudi in red, white and deep chocolate colour on deep chocolate ground.

This saree is adapted from old Saktapar saree in fine counts using a number of bright colours. Unlike old Saktapar saree, the saree has one pallav.

Plate 36

Calico Museum of Textiles No. 2474

Cotton Chhamuha saree, Sonepur, 1973.

Body : Golden yellow

Ends per cm. : 36

Picks per cm. : 37

Count of warp : 2/120^s

Count of weft : 2/120^s

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Border

Plain in chocolate colour with woven temple motif in chocolate colour projecting towards the body.

Body

Plain golden yellow body with five transverse pallav-like figured portions at equal distances composed of weft tie and dye stripes of bold creeper and flower motif of golden yellow colour on mixed golden yellow and chocolate ground. These are over and above the usual pallav of the saree at one end.

Pallav

This is similar to the above pallav-like figured portions in the body except that the ground is chocolate matching with the border.

Plate 37

Calico Museum of Textiles No. 2439

Cotton skirt border Gajalaxmi saree, Bargarh, 1973.

Body : Green

Ends per cm. : 28

Picks per cm. : 29

Count of warp : 2/120^s

Count of weft : 2/120^s

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Border

Three rows of extra warp fish and flower stripes, twelve narrow yellow, red and black line woven stripes, one warp tie and dye white spots on black ground and five narrow yellow and red line woven stripes on one side and similar on the other side except that there are six extra warp fish and flower stripes, two warp tie and dye green and white stripes and one wide warp tie and dye stripe with floral motif of green, blue, red and white colour on black ground besides seven plain woven line stripes and two narrow extra warp stripes. There are weft tie and dye white kumbha and buds with red centre projecting towards the body.

Body

The layout is in stripes of two rows one on each side of bold centre weft flowers of blue, yellow, red, green and white colour separated by ribbon lines of white and red diamond flanked by buds with red centre. The same ribbon line separates another row of weft tie and dye elephants in green and white colour on one side and a row of nabagunjara figures on the other side. The central row is of diamond design made of weft tie and dye white rectangles with central star shaped figures having red central spots. Altogether there are five broad stripes in the body. The elephants are in black and green mixed colour with white outline, and the nabagunjaras are in red and black mixed colour with white outline.

Pallav

Transverse stripes of weft tie and dye flowers of blue, green red and yellow and white colour on black ground flanked by stripes of green and white weft tie and dye dali, green and white weft tie and dye narrow spotted lines and red and white weft tie and dye kangula or kaudi.

The entire design except the pallav has been adopted from silk khandua saree of Nuapatna (Tigria) area.

Plate 38

Calico Museum of Textiles No. 2457

Cotton Saree, Bargarh, 1973.

Body : Mauve

Ends per cm. : 28

Count of warp : 60^s

Length : 5.03 mtrs.

Picks per cm. : 28

Count of weft : 60^s

Width : 1.21 mtrs.

Border

It has no border.

Body

It is of plain body of mauve colour with weft tie and dye long rectangular decorative motifs placed in alternate order all over the body but wide apart. The decorative motif is in blue red, green, orange and white colour.

Pallav

It is composed of three weft tie and dye transverse stripes of floral motifs and two weft tie and dye wavy stripes each flanked by wide and narrow woven lines on black ground.

This is a cheap variety of saree used by college girls. and middle class girls. Cost is Rs. 30/-.

Plate 39

Calico Museum of Textiles No. 2456

Cotton coarse domuha saree, Bargarh, 1973.

Body : Green

Ends per cm. : 20 double
untwisted

Count of warp : 40/2^s

Length : 4.57 mtrs.

Picks per cm. : 23

Count of weft : 30^s

Width : 1.11 mtrs

Border

Plain woven border of blue diamonds and narrow lines with red danti towards the body.

Body

Plain of green colour with no design.

Pallav

There are two pallavs, one on each end, decorated with transverse stripes of weft tie and dye having flowers and leaves in red, green, yellow and white colour on black ground. The pallavs are wider than usual pallavs in sarees of finer counts.

The saree is a cheap variety used by labour class and agriculturist class women. Cost is Rs. 27.50.

Plate 40

Calico Museum of Textiles No. 2472

Cotton skirt border saree, Barpali, 1973.

Body : Violet

Ends per cm. : 35

Count of warp : 2/120^s

Length : 5.49 mtrs.

Picks per cm. : 28

Count of weft : 2/120^s

Width : 1.20 mtrs.

Plate 44

Calico Museum of Textiles No.2424

Cotton Bed cover, Barpali, 1973 (woven in 1972, place of acquisition - Bhubaneswar).

Body : Blue

Ends per cm. : 15 double
twisted

Picks per cm. : 14 double
twisted

Count of warp : 20/2^s

Count of weft : 20/2^s

Length : 2.28 mts.

Width : 1.52 mtrs.

Border

Yellow with yellow long woven kumbhas projecting towards the body.

Body

Plain blue.

Cross border

Cross border on either end composed of transverse stripes. There are three weft tie and dye stripes, one of elephant and tree motifs, elephant in white outline, red spotted howda and eye on blue ground and tree in white outline on blue ground. The other two weft tie and dye stripes are of floral motifs. There are three woven buti stripes alternating with the tie and dye stripes. The butis are in yellow and black colour on a light blue ground. The tie and dye stripes as well as buti stripes are flanked on either side by wide and narrow woven yellow stripes. The end of the cross border of about 45.75 cms. is in wide blue and yellow woven stripes.

Plate 45

Calico Museum of Textiles No.2421

Silk Saree, Sonepur, 1973 (woven in 1966, place of acquisition - Bhubaneswar).

Body : Black

Ends per cm. : 37

Picks per cm. : 41

Count of warp : 20/22 den.
2 fold.

Count of weft : 20/22 den.
2 fold.

Length : 5.44 mtrs.

Width : 1.24 mtrs.

Border

Ten rows of extra warp fish and flower stripes with one warp tie and dye stripe at the centre having fish, flower, duck, and deer motifs in red with white outline on black ground. One warp tie and dye creeper (red with white outline on black ground) stripe. Two rows of warp tie and dye (one with white spots on black ground and the other with white spots on red ground).

There are narrow woven extra warp and ground lines in between the rows of stripes. This is adapted from old Bichitrapar saree.

Body

The entire body is in black squares with orange extra warp and extra weft outlines and a broad warp tie and dye stripe running at the centre of the body. The wide central warp tie and dye stripe is composed as given below:

1. White spots and red bars.
2. White spots and black bars.
3. Creeper (red with white outline) on black ground.
4. White spots and black bars.
5. White spots and red bars.

- There are extra warp narrow woven lines in between the tie and dye stripes. This is adopted from old Bichitrapar saree

It is in wide transverse plain red stripe with white extra weft butis flanked on either side by extra weft stripes. There is pallav on one side.

It was reported during collection that the Bichitrapar pattern was woven on silk on an experimental order. Normally silk tie and dye fabrics are not woven in the area.

Nuapatna
(Tigria) area:

Availability of synthetic dyes of wide range of colours and demand from sophisticated buyers for wear on special occasions besides wedding and the symbol of aristocracy in wearing handloom sarees have brought in remarkable change in the designs, colours and development in the technique. A few selected pieces are analysed below:

Calico Museum of Textiles No.2435
Silk (Mulberry) Mukтажhari khandua saree, Nuapatna, 1973.
Body : Deep red
Ends per cm. : 33
Count of warp: 20/22 den,
2 fold
Length : 5.49 mtrs.
Picks per cm. : 24
Count of weft : 16/18 den,
4 fold
Width : 1.21 mtrs.

This is reproduction of old khandua saree the details of which are given earlier. It is still popular and hence the production is continuing. The tie and dye border of creeper and flower and pallav of tie and dye stripes are in cotton.

Calico Museum of Textiles No.2438
Silk Nakshatrabhusana saree, Nuapatna, 1973.
Body : Vermillion red.

Ends per cm. : 34	Picks per cm. : 24
Count of warp : 20/22 den, 2 fold	Count of weft : 16/18 den, 4 fold
Length : 5.49 mtrs.	Width : 1.21 mtrs.

This is a reproduction of old Nakshatra bhusana saree the details of which are given earlier. It is still popular and being produced. The border and pallav, unlike that of the Mukтажhari khandua saree in plate 46 are in silk.

Plate 48

Calico Museum of Textiles No.2432
Silk Tarabali saree, Nuapatna, 1973.

Body : Orange

Ends per cm. : 31

Picks per cm. : 26

Count of warp : 20/22 den, 2 fold Length : 5.49 mtrs.

Count of weft : 16/18 den, 4 fold Width : 1.21 mtrs.

This is a reproduction of an almost similar old Tarabali saree the details of which are given earlier. The saree is still popular and continues to be produced. The border and pallav are in silk. The border has black kumbha motif.

Plate 49

Calico Museum of Textiles No.2427
Silk Ath-kothari saree, Nuapatna, 1973.

Body : Blue

Count of warp : 20/22 den, 4 fold Ends per cm. : 31

Count of weft : 16/18 den, 4 fold Picks per cm.: 25

Length : 5.49 mtrs. Width : 1.21 mtrs.

Border

Two extra warp rudraksha stripes with wide warp tie and dye stripe of bold flowers and leaves on chocolate ground, in between. The flowers are red with white outline and orange centre while the leaves are green with white outline.

One stripe of weft tie and dye spots of red and light blue colour and six white woven narrow line stripes.

Body

It is divided into large blue squares bounded by woven red ribbon and extra warp and extra weft narrow lines. Each square has a large weft tie and dye motif like leaf, spear, deer, peacock, temple, flower, elephant and mangala-ghat in red and orange with white outline on blue ground. As there are eight squares from border to border it is called Ath-kothari saree.

Pallav

Composed of seven weft tie and dye transverse stripes with plain woven red and green ribbon stripes and extra weft narrow stripes in between. The central tie and dye stripe has pairs of fish in green with white outline and golden yellow fins and large red flowers with white outline on blue ground. There are two weft tie and dye stripes of creeper (green with white outline) and flower (red with white outline), two weft tie and dye ribbon of flowers (red with white outline) and green kaudis on blue ground and two weft tie and dye stripes of white and golden yellow kaudis on blue ground. There are nine blue woven ribbon stripes at the end of the pallav.

This saree is adapted from the old Na-kothari saree. The border being very wide the number of squares from border to border is reduced to eight. The border and pallav are in silk.

Calico Museum of Textiles No. 2428
Silk Na-kothari saree, Nuapatna, 1973.

Body : Deep red

Count of warp : 20/22 den, 2 fold Ends per cm. : 33

Count of weft : 16/18 den, 4 fold Picks per cm. : 28

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Border

Two stripes of extra warp rudraksha and one warp tie and dye stripe in between consisting of a pair of fish motifs in green with white outline on red ground and orange flowers with white outline and red centre spot on red ground, one stripe of weft tie and dye black and white sports and narrow white woven lines.

Body

The body is divided into large red squares bounded by black woven ribbon and thin extra warp and extra weft lines. Each red square has a motif like conch, spear, deer, elephant, peacock, temple and stag. The motifs are green and chocolate with white outline on red ground.

Pallav

It is composed of two wide transverse weft tie and dye stripes and two ribbon weft tie and dye kaudi stripes with red and green ribbon and narrow extra weft stripes and plain woven lines in between.

One of the two wide tie and dye stripes has ducks (blue with white outlines) and flowers in red, green and yellow with white outline all on deep chocolate ground and the other stripe has lotus flower in red with white outline, lotus leaf in orange with white outline and red stem, pair of white ducks, landscape containing hills in chocolate, river in white, land in green and spotted deer in red all with white outlines on deep chocolate ground.

This saree is adapted from old kothari saree. There being nine squares from border to border it is called Na-kothari saree. Border and pallav are of new imagination. The warp tie and dye stripes in border and weft tie and dye in pallav are in cotton.

Plate 51

Calico Museum of Textiles No. 2434

Silk Hati saree, Nuapatna, 1973.

Body : Deep mustard

Count of warp : 20/22 den, 2 fold Ends per cm. : 36

Count of weft : 16/18 den, 4 fold Picks per cm. : 27

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Border

Two extra warp rudraksha stripes and a warp tie and dye stripe in between. One stripe of weft tie and dye black and white spots. One stripe of weft tie and dye brown kumbha with white outline and bud with red centre and white outline projecting from the border towards the body.

The warp tie and dye stripe is composed of red flowers with white outline and green leaves with white outline and yellow buds with white outlines and red central spots.

- Body** Body is in deep mustard colour. Motifs of elephants are placed all over in alternate order. The elephant is in multicolour. The head and the trunk are in deep chocolate and white outline, two legs are in green with white outline, central body is in red with white outline and the rest are in mustard with white outline.
- Pallav** It consists of transverse stripes of one wide weft tie and dye stripe and two ribbon weft tie and dye stripes with plain woven red and deep chocolate ribbon stripes, extra weft narrow lines and thin plain woven lines in between. The wide weft tie and dye stripe is an artistic composition of houses, temples, tall stambha (pillar), road and walls of various colours like blue, red, green, yellow and white on deep chocolate ground, an imaginative view of Puri temple famous for Lord Jagannath.
- The ribbon weft tie and dye stripes have red flowers and deep chocolate leaves with white outlines on deep chocolate ground.
- The pallav and border tie and dye stripes are in silk.
- Plate 52** Calico Museum of Textiles No.2436
Silk saree, Nuapatna, 1973.
Body : Grey
Count of warp : 20/22 den, 2 fold Ends per cm. : 33
Count of weft : 16/18 den, 4 fold Picks per cm. : 22
Length : 5.49 metres Width : 1.21 mtrs.
- Border** There are two extra warp small rudraksha stripes with one wide warp tie and dye stripe in between. One weft tie and dye red and white spot stripe and one stripe of weft tie and dye kumbha and buds projecting from the border towards the body. The warp tie and dye stripe has motifs of lion in orange colour with white outline on chocolate ground. The kumbhas are in yellow and buds are in red colour with white outline.
- Body** The body is grey. Motifs of nabagunjara have been placed in alternate order all over the body. The motif is in white outline with ear and eye, red and yellow mane.
- Pallav** The pallav is in transverse stripes. There are three wide weft tie and dye stripes with plain woven red and black ribbon, extra weft lines in between.
- The weft tie and dye stripes have the same motif of lion as in the warp tie and dye border and both are in silk.
- Plate 53** Calico Museum of Textiles No.2429
Chungudiadali saree, Nuapatna, 1973.
Body : orange
Count of warp : 20/22 den, 2 fold Ends per cm. : 31
Count of weft : 16/18 den, 4 fold Picks per cm. : 25
Length : 5.49 mtrs. Width : 1.21 mtrs.
- Border** Two stripes of extra warp small diamond spots with one warp tie and dye stripe in between and one stripe of weft tie and dye buds projecting from the border towards the body.

The warp tie and dye stripe consists of pairs of fish in green and white outline and red head and red flowers with white outline on deep chocolate ground.

The weft tie and dye buds are alternately in green and deep chocolate colours with white outline.

Body Orange coloured body with all over weft tie and dye white wavy creeper forming diamond figures and ending in curls near the border. Green and deep chocolate spotted flowers in the centre of each diamond space surrounded by white curly figures like prawns complete the composition. All figures are in weft tie and dye.

Pallav It consists of transverse stripes. One wide weft tie and dye stripe at the centre, four ribbon weft tie and dye stripes and plain woven ribbon stripes, extra weft narrow lines and plain woven thin lines in between the tie and dye stripes from the pallav. The wide tie and dye stripe has pairs of parrots in green and red with white outline and flowers in red and in yellow with white outline and deep chocolate centre spots on deep chocolate ground.

Two of the ribbon tie and dye stripes have heart-shaped figures in green with white outline and red centre spot within orange coloured creepers forming diamonds and red buds with white outline coming out of the creeper lines, all on deep chocolate ground. The other two tie and dye ribbon stripes have parallelogram-shaped spots of green, red, deep chocolate and white colour. The plain woven ribbon stripes are in red, orange green and chocolate colour. The warp tie and dye border stripe and weft tie and dye pallav stripe are on cotton.

Plate 54 Calico Museum of Textiles No.2430
Silk Ganthiadali saree, Nuapatna, 1973.

Body : Slate colour

Count of warp : 20/22 den, 2 fold

Ends per cm. : 33

Count of weft : 16/18 den, 4 fold

Picks per cm.: 26

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Border Wide border composed of a central warp tie and dye stripe flanked by extra warp diamond, plain woven ribbon, extra warp danti stripes on either side. There is one ribbon warp tie and dye stripe towards the selvedge. The order of stripes is as given below:

1. Red selvedge.
2. Two narrow yellow woven lines.
3. Extra warp yellow narrow stripe.
4. Narrow yellow woven line.
5. Black woven ribbon stripe.
6. Narrow yellow woven line.
7. Extra warp yellow danti stripe.
8. Two narrow woven lines, one yellow and one black.

9. One warp tie and dye ribbon of white line and spots on red ground.
10. Three narrow woven lines black, yellow, black.
11. Extra warp yellow danti.
12. Yellow woven line.
13. Black woven ribbon stripe.
14. Yellow woven line.
15. Extra Warp small yellow diamond spot stripe.
16. Five narrow woven lines, black, yellow, black, yellow and black.
17. Central warp tie and dye stripe of pairs of fish in red with white outline and flowers in yellow and with white outline on greenish-black ground.

The entire border is on red ground in general.

18. As in 16 to 1 except that in place of 9, only plain to woven red ribbon with two thin yellow lines at the
- 33 centre is to be taken. One stripe of weft tie and dye buds in red and white outline project towards the body.

Body

Slate colour. White dalis (creepers) with red and white flowers all-over the body form hexagonal figures.

Pallav

Pallav is in transverse stripes. Four weft tie and dye stripes, each of which is flanked by plain woven ribbon stripes and extra weft lines and narrow woven lines on either side.

The tie and dye stripes have pairs of fish in green with white outline and red flowers with white outline. The ribbons are in black, green and red.

The warp tie and dye border stripes and weft tie and dye pallav stripes are in cotton.

Plate 55

Calico Museum of Textiles No.2431

Silk Kunjiphulabedi saree, Nuapatna, 1973.

Body : Golden yellow colour

Count of warp : 20/22 den, 2 fold

Ends per cm. : 32

Count of weft : 16/18 den, 4 fold

Picks per cm.: 26

Length : 5.49 mtrs.

Width : 1.21 mtrs.

Border

The overall ground is red. A warp tie and dye stripe in the centre is flanked by narrow woven lines, extra warp small diamond spot stripe plain woven ribbon stripes and warp tie and dye ribbon stripe on either side.

The central tie and dye stripe has pairs of green fish with white outline and yellow flowers with white outline and red centre spot, all on red ground.

The ribbon tie and dye stripes have a straight white creeper with white branches on either side.

One stripe of weft tie and dye buds in green with white outline alternating with buds in red with white outline projecting towards the body.

Body

Golden yellow colour

Flowers all-over with red petals with white outline and green centre spot encased in a square platform-shaped white-lined figure with four steps on four sides. The flowers are known as Kunjiphula and the square platform is known as bedi.

Pallav

Transverse stripes composed of weft tie and dye stripes of similar motifs as in the border, each stripe flanked by plain woven red and green ribbon stripes and extra weft lines and narrow woven lines.

The border warp tie and dye stripes and pallav weft tie and dye stripes are in cotton.

Plate 56

Calico Museum of Textiles No. 2437

Silk Sankha saree, Nuapatna, 1973.

Body : Blue

Count of warp : 20/22 den, 2 fold Ends per cm. : 36

Count of weft : 16/18 den, 4 fold Picks per cm. : 25

Length : 5.49 mtrs. Width : 1.21 mtrs.

Border

Wide warp tie and dye stripe of large size conches in white Outline on red ground flanked by narrow extra warp rudraksha stripes on either side.

A stripe of weft tie and dye buds in red and white outline project from the border towards the body.

Body

Blue colour

Conches in weft tie and dye white outline are placed in alternate order all-over the body.

Pallav

Transverse stripes.

A weft tie and dye stripe of large size conches as in the border on mauve ground in the centre and two weft tie and dye stripes of white creeper on mauve ground, each tie and dye stripe flanked by plain woven ribbon stripes of blue, green and mauve colour and extra weft lines on either side.

The border warp tie and dye stripe and pallav weft tie and dye stripes are in silk.

Plate 57

Calico Museum of Textiles No. 2425

Silk Dipavali saree, Nuapatna, 1973.

Body : Deep chocolate

Count of warp : 20/22 den, 2 fold Ends per cm. : 32

Count of weft : 16/18 den, 4 fold Picks per cm. : 32

Length : 5.49 mts. Width : 1.21 mts.

Border Two extra warp small yellow diamond stripes with one warp tie and dye stripe in between having red flowers with white outlines and chocolate centre spot, white dali, green leaves with white outline and star-shaped figures in white with red centre spot, one weft tie and dye stripe of red and grey spots. Five thin plain woven lines in the order of white, grey, white, grey and white and one stripe of yellow weft tie and dye kumbha alternating with bud of green colour and white outline projecting towards the body.

Body Deep chocolate colour.

Tie and dye pradeeps (flaming lamps) in white outline and red flame placed diagonally on steps of diagonal white lines all over the body.

The lines of red flames show brilliantly on the deep chocolate ground.

Pallav Transverse stripes.

Wide ribbon weft tie and dye stripes of red, yellow and green flowers with chocolate, green and red centre spots and green leaves and stripes of white and chocolate kaudies, each such stripe flanked by plain woven red ribbons, extra weft narrow lines and narrow plain woven lines form the pallav.

The warp tie and dye stripe in the border and weft tie and dye stripes in the pallav are in cotton.

Plate 58

Calico Museum of Textiles No. 2433.

Silk Chowka saree, Nuapatna, 1973.

Body : Blue

Count of warp : 20/22 den, 2 fold Ends per cm. : 33

Count of weft : 16/18 den, 4 fold Picks per cm. : 26

Length : 5.49 mtrs. Width : 1.21 mtrs.

Border Two extra warp white diamond stripes having one warp tie and dye stripe in between of red flowers with white outline and blue centre spot, yellow flowers with white outline and red centre spots and green leaves with white outline all on blue ground form the border.

Body A brilliant blue body divided into large squares by longitudinal warp tie and dye and transverse weft tie and dye white diamond stripes. The corners of the squares are golden yellow squares formed by warp and weft tie and dye. In the centre of each square is placed a four petal red floral motif with white outline having a square yellow centre brought out by warp and weft tie and dye, the longitudinal petals being in warp tie and dye and transverse petals in weft tie and dye.

Pallav The pallav is in transverse stripes composed of a very wide

weft tie and dye stripe in the centre, two weft tie and dye stripes of medium width and two ribbon weft tie and dye stripes. Each of the tie and dye stripes is flanked on either side by blue plain woven ribbon stripes, extra weft narrow stripes and plain woven narrow lines.

The very wide weft tie and dye stripe in the centre has motifs of large size duck in blue with white outline and flowers of red, green and yellow colour with white outline all on deep chocolate ground.

The two weft tie and dye stripes of medium width have motifs of red flowers with white outline and green leaves with white outline. The transverse petals are in brilliant red while the longitudinal petals are dull red or violet. The two ribbon weft tie and dye stripes have white oblique lines on green ground.

Plate 59

Calico Museum of Textiles No. 2426
Tassar bandha saree, Nuapatna, 1973.

Body : Blue

Count of warp : 40/2 den (2 threads) Ends per cm. : 28

Count of weft : 40/2 den (2 threads) Picks per cm. : 26

Length : 5.49 mtrs. Width : 1.13 mtrs.

Border

A border in red colour in general is composed of two extra warp small white rudraksha stripes having one warp tie and dye stripe of red flowers with white outline and green leaves with white outline on chocolate ground, one weft tie and dye stripe of white and red spots and one weft tie and dye stripe of yellow kumbhas alternating with red buds in white outline projecting from the border towards the body.

Body

A brilliant blue body having floral decorative motifs with stem, bud and leaf. The flower is in yellow and red colour with white outline and blue centre spot. The leaf is in green, the bud is in blue with white outline and the stem is in white colour. The entire motifs is in weft tie and dye. The motifs are designed in such a manner that when placed in alternate order, one slightly overlapping the other, they form diagonal lines all over the body giving all over effect.

Pallav

The pallav is in transverse stripes composed of one wide central weft tie and dye stripe of bold red flowers and green leaves with white outline on deep blue ground; two weft tie and dye stripes of medium width having green fish with red head and yellow fins and white outline and red flowers with white outline all on blue ground; two ribbon weft tie and dye stripes of small red flowers with white outline and green and yellow leaves with white lines on blue ground; and two narrow weft tie and dye stripes of red, blue, yellow and green parallelograms with white border. Each of the tie and dye stripes are flanked by plain woven ribbon stripes of violet and blue colour, extra weft narrow lines and narrow plain woven lines.

The warp tie and dye stripe in the border and weft tie and dye stripes in pallav are in cotton.

Plate 60

Calico Museum of Textiles No. 2473

Cotton Khandua saree, Muktanagar, 1973.

Body : Deep maroon colour

Ends per cm. : 38

Picks per cm. : 30

Count of warp : 80^s

Count of weft : 80^s

Length : 5.0 mtrs.

Width : 1.14 mtrs.

Border

It is composed of two extra warp small rudraksha stripes with danti having a warp tie and dye stripe in between of a white creeper with red and green flowers and yellow buds with white outlines on deep chocolate ground; one plain woven narrow stripe and one extra warp danti stripe.

Body

A maroon coloured body having tarabali diamond shaped central stripe with star-shaped motifs at the centres; one stripe of elephants in yellow, deep chocolate and maroon colour with white outline and a stripe of large flowers in yellow and maroon colour and white outlines on one side and a stripe of nabagunjara motif in deep chocolate, yellow and maroon colour and white outlines and a stripe of large flowers in yellow and maroon colour and white outlines on the other. All figures are in weft tie and dye.

Pallav

The pallav is in transverse stripes composed of one wide central weft tie and dye stripe having large red flower with white outlines and yellow and blue central spot and small flowers, buds and leaves and stems in red, yellow, green, and white colour respectively, all the motifs being on deep maroon ground; two weft tie and dye stripes of medium width having red, blue and green flowers, yellow buds on a white creeper on deep maroon ground; two weft tie and dye ribbon stripes having red flowers on white creeper on maroon ground and two weft tie and dye stripes of kaudis of red, yellow, white and maroon colour.

Each tie and dye stripe is flanked by plain woven maroon stripes, extra weft narrow stripes and plain woven narrow lines.

Analysis of old fabrics of Andhra Pradesh.

Plate 61

Calico Museum of Textiles No. 2461

Cotton Telia rumal (chowka) Chirala, 1973 (woven in Ca. 1930 A.D.)

Count of warp : 40^s

Count of weft : 2/80^s

Ends per cm. : 30

Picks per cm. : 31

Length : 1.19 mtrs.

Width : 1.21 mtrs.

Border

The plain border is of 22.25 cms. in width on four sides. It consists of 1.27 cms. grey (black and red mixed) selvedge along the warp and cross stripe along the weft as outline. The

space between the selvedge and the main central tie and dye portion of square size and also the space between the cross stripe along the weft and the main central tie and dye portion of square size are divided into four squares by narrow single jari lines longitudinal and transverse, besides having three stripes including a central stripe each stripe consisting of six fine lines of jari.

Each corner is consequently divided into four squares each of which is again sub-divided into four small squares.

Body The design part of the body which is 74.5 cms. in length and 76.5 cms. in width is woven in tied and dyed yarn. This square is again divided into 256 squares. The stripes forming the squares warp way with tied and dyed warp and weft have the motifs arranged in the following order.

1st stripe 1st square - All-over check of red and white five lines with a central white diamond like spot.

2nd square - A flower of eight petals, alternately red and white on black ground.

3rd square - A white leaf with a stem placed diagonally on a red ground.

4th square - A white flower shaped figure entirely with fine red and white check on black ground.

5th square - Repeated as 1st

6th square - Repeated as 2nd

7th square - Repeated as 3rd

8th square - Repeated as 4th and there are four such repeats having altogether sixteen squares.

2nd stripe 1st square - A flower with red body and white outline, a white stem and three white buds with criss-cross red lines all on black ground.

2nd square - Two leaves of white body and red and white check, a white flower half in red and white check and a white bud on black ground.

3rd square - A red diamond with white outline and white flower-shaped centre on a check ground of black and white lines.

4th square - A sun-shaped white round figure on red ground.

5th square - Repeated as 1st.

6th square - Repeated as 2nd.

7th square - Repeated as 3rd.

8th square - Repeated as 4th and there are 4 such repeats having altogether sixteen squares.

Again the above mentioned two stripes consisting of 16 squares each have been repeated 8 times altogether forming a large square of 256 squares.

Plate 62

Calico Museum of Textiles No.2462

Cotton Dopatta saree (coarse), Hyderabad, 1973.

(woven in Ca. 1900 A.D.)

Ends per cm. : 28

Picks per cm. : 25

Count of warp : 30^s

Count of weft : 40^s

Length : 4.68 mtrs.

Width : 1.10 mtrs.

Border

Plain woven selvedge of deep chocolate and white mixed, four narrow similar stripes with deep chocolate narrow lines in between 7 cms. wide deep chocolate woven stripe with Jari embroidered stripe and jari butis at the centre, four plain woven chocolate and white mixed narrow stripes with deep chocolate narrow lines in between, plain woven 7 cms. wide deep chocolate stripe as above and four plain woven chocolate and white mixed narrow stripes with chocolate narrow lines in between compose the border.

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Body

The layout is in alternate squares of 1.27 cms. side in deep chocolate and reddish-white colour studded with black stepped diamonds arranged in alternate plain order. Alternate diamond figure has embroidered jari figures of moon and leaf with flower respectively.

The body is again divided into two halves of the above composition and hence it is called Dopatta. The division is made by four wide deep chocolate transverse jari embroidered stripes similar to the border.

Pallav

There are two pallavs, one at each end consisting of two deep chocolate jari embroidered transverse stripe similar to the border.

Plate 63

Calico Museum of Textiles No.563

Cotton Pakachekram Laider rumal, Pochampalli, Ca. 1950 A.D.

Ends per cm. : 17

Picks per cm. : 14

Count of warp : 14^s

Count of weft : 14^s

Length : 101.5 cms.

Width : 103.0 cms.

The rumal is almost a square piece of fabric with 21 cms. wide borders and similar 22.5 cms. wide cross borders. The borders as well as cross borders are in deep red colour.

consisting of two stripes, each having four narrow white lines on either side. Besides, the square fabric has 2 cm. wide stripes at the edge on all four sides. The stripes are woven stripes in red warp and white weft in cross borders and white warp and red weft in borders, both the red warp and red weft being tied and dyed red. The squares in four corners made by the narrow white stripes have small fine line checks in white on red ground formed by tie and dye white warp and white extra weft.

Within the borders and the cross border is a large square (approximately) of 56.5 cms. side warp way and 61 cms. side weft way. Weft, tied and dyed in black, red and white interlace with warp, tied and dyed in red in the cross border and black in the central square making all-over diamond patterns on black ground. The all-over pattern has several repeats of diamonds, each repeat in turn forming several diamonds namely a grey spot, dull red diamond, grey line diamond, solid black diamond, grey line diamond, dull red line diamond and grey line diamond, one within the other respectively. All the diamonds are steppy in outline.

Plate 64

Calico Museum of Textiles No. 571

Cotton Nilu paka batani rumal, Pochampalli, Ca. 1950 A.D.

Ends per cm. : 18

Picks per cm. : 16

Count of warp : 20^S

Count of weft : 20^S

Length : 101 cms.

Width : 98.5 cms.

The rumal is almost a square piece of fabric with 20 cms. wide borders and similar 21 cms. wide cross borders. The borders and cross borders are similar to those of fabric number 568 in layout but black in colour.

Within the borders and the cross borders is a large square (approximately) of 59 cms. side warp way and 58.5 cms. side weft way. Both warp and weft are tie and dye in black, red and white. Warp way stripes formed by black warp and red weft and weft way stripes formed by red warp and black weft, both the stripes having white line on either side, form squares all-over. The crossings of the stripes are in white weft and black warp. Each square has a decorative diamond at the centre and four crosses in four corners on red ground. The diamond and four corners are formed by red warp and white weft and ground by red warp and red weft. The outline of the diamond is irregular and not steppy unlike other rumals. The adjustments done in tie and dye weaving after every pick and initial adjustments of consecutive ends in the warp are conspicuously lacking. The overall colour of the central square is red while the borders and cross borders are black.

Calico Museum of Textiles No. 575

Cotton Peddapadgu rumal, Pochampalli, Ca. 1950 A.D.Count of warp : 36^sCount of weft : 36^s

Ends per cm. : 23

Picks per cm. : 20

Length : 117 cms.

Width : 107.2 cms.

The rumal is almost a square piece of fabric with 20.1 cms. wide borders and similar 23.5 cms. wide cross borders. The borders and cross borders are in maroon colour and are similar to those of the fabric number 568 in layout.

Within the borders and the cross borders is a large square (approximately) of 70 cms. side warp way and 67 cms. side weft way. Both warp and weft are tie and dye in maroon, black and white. The interlacement of warp and weft form several repeats of diamonds within diamonds of solid colours, each repeat having a black square spot within a small white diamond, a maroon diamond, a white diamond, a black diamond and a large white diamond with squares of maroon colour, one diamond within the other respectively. The large white diamonds with squares join each other with a small black square in between. The general back-ground is white. All the diamonds are steppy in outline.

Calico Museum of Textiles No. 576

Cotton Pagdu bandu rumal, Pochampalli, Ca. 1950 A.D.

Ends per cm. : 18

Picks per cm. : 16

Count of warp : 30^sCount of weft : 30^s

Length : 110.2 cms.

Width : 101.7 cms.

The rumal is almost a square piece of fabric with 18.5 cms. wide borders and similar 21.6 cms. wide cross borders. The border as well as the cross borders are similar to those of fabric number 568 in layout and colour.

Within the borders and the cross borders is a large square (approximately) of 67 cms. side warp way and 64.7 cms. side weft way. Both warp and weft are tie and dye in red, white and black. There are two stripes of diamond, weft way, alternating with each other. Both the stripes are on red ground. One stripe has a black cross within a white steppy diamond alternating with a black square spot and the other stripe has a red square spot within a steppy white diamond alternating with a black square within a white steppy diamond. The red ground also forms a steppy decorative figure due to the steppy diamonds of the stripes.

Calico Museum of Textiles No. 577

Cotton Tanbel burra rumal, Pochampalli, Ca. 1950 A.D.

Ends per cm. : 18

Picks per cm. : 15

Count of warp : 20^sCount of weft : 20^s

Length : 100.5 cms.

Width : 101.5 cms.

The rumal is almost a square piece of fabric with 20 cms. wide borders and similar 21 cms. wide cross borders. The borders as well as cross borders are similar to those of fabric No. 568 in layout and colour.

Within the borders and the cross borders is a large square (approximately) of 58.5 cms. side warp way and 61.5 cms. side weft way. Both warp and weft are tied and dyed in red, black and white. The interlacement of the warp and weft forms an all-over check pattern of rectangles of various sizes. The large rectangles are set within smaller rectangles on four sides and four still smaller rectangles in four corners. The large rectangles have alternately a decorative flower in white, black and red weft and black warp on red and black ground and a star-shaped motif with black central spot in white and black weft, on red and black ground. The rectangles on the sides of the large rectangle have white line checks on black ground. The small rectangles in the corners are red.

Plate 68

Calico Museum of Textiles No. 615

Cotton Telia rumal, Chirala, Ca. 1950 A.D.

Ends per cm. : 26

Picks per cm. : 26

Count of warp : 30^S

Count of weft : 30^S

Length : 111 cms.

Width : 116 cms.

The rumal is almost a square piece of fabric with 24 cms. wide borders and 23 cms. wide cross borders. The borders and cross borders are in deep maroon colour and have similar layout as those of fabrics No. 568. The maroon colour runs on to the white line stripes. The squares formed at the corners by the white line stripes have fine weft white lines unlike white checks in fabric No. 568.

Within the borders and the cross borders is a large square (approximately) of 65 cms. side warp way and 68 cms. side weft way. Warp way and weft way red stripes divide the large square into 16 squares in 4 rows, each row, warp way or weft way having 4 squares. The crossings of the stripes are in white. The squares have alternately a motif of sun and a motif of lion. The sun is in red with a small white circle at the centre and white saw tooth outline. It is set in a square black ground, the square having a border of inverted saw tooth motif on red ground. The lion is on a red and white small check platform. The body of the lion is in red with white outline, the tail is in white with red tip and the main is in red and white small check. The motif of lion is set in a black square with border as for the square with the sun. The lions face opposite directions in alternate rows. The squares are separated by 1.5 cm. wide red stripes warp way as well as weft way. The entire design is in warp and weft tie and dye in black, white and red. The white is not perfectly white. The red runs on to white. Similarly the black is not perfectly black. Red also runs on to black. The entire rumal gives an appearance of having got a light red colour wash. There is a smell of oil from the fabric.

Calico Museum of Textiles No. 614

Cotton Telia rumal, Chirala, Ca. 1950 A.D.

Ends per cm. : 28

Picks per cm. : 27

Count of warp : 30^sCount of weft : 30^s

Length : 114.0 cms.

Width: 115.3 cms.

The rumal is almost a square piece of fabric with 24 cms. wide borders and 24.5 cms. wide cross borders, the layout and colour being similar to those of fabric No. 615.

Within the borders and the cross borders is a large square (approximately) of 65 cms. side warp way and 67.3 cms. side weft way. The large square is divided into 16 squares in 4 rows by warp way and weft way red stripes having white spots evenly spaced. The squares have alternately a motif of four birds and a motif of four flowers. The motif of four birds in red and white and red check is set in four squares, two of the birds facing the other two on black ground. The motif of four flowers in white all projecting outward at right angles to each other is set on deep red diamond ground, leaving the four corners of the square in black and white small check. The entire design is in tie and dye warp and weft in red, black and white. The red runs on to white as well as on to black giving an appearance of red colour wash. There is a smell of oil from the fabric.

Calico Museum of Textiles No. 611

Cotton Telia rumal, Chirala, Ca. 1950 A.D.

Ends per cm. : 27

Picks per cm. : 24

Count of warp : 30^sCount of weft : 30^s

Length : 120.5 cms.

Width : 115.5 cms.

The rumal is almost a square piece of fabric with 24 cms. wide borders and 26 cms. wide cross borders, the layout and colour being similar to those of fabric No. 615.

Within the borders and the cross borders is a large square (approximately) of 68.5 cms. side warp way and 67.5 cms. side weft way. Warp way and weft way deep red stripes with white decorative motifs evenly spaced divide the large square into 16 squares in four rows. The squares have alternately a motif of aeroplane and a motif of wall clock. The aeroplane as well as the clock motifs are in solid red and white and red checks set on black ground. The aeroplane is set diagonally, the nose inclining towards left and towards right in alternate rows. The clock is set upright having two pictures on either side. The entire design is in tie and dye warp and weft in red, black and white. The red runs on to white as well as on to black giving an appearance of red colour wash. There is a smell of oil from the fabric.

Calico Museum of Textiles No. 613

Cotton Telia rumal, Chirala, Ca. 1950

Ends per cm. : 28

Picks per cm. : 26

Count of warp : 3^SCount of weft : 30^S

Length : 115.7 cms.

Width : 114.0 cms.

The rumal is almost a square piece of fabric with 23.5 cms. wide borders and 25.5 cms. wide cross borders, the layout and colour being similar to those of fabric No. 615.

Within the borders and the cross borders is a large square (approximately) of 64.7 cms. side warp way and 67 cms. side weft way. The large square is divided into 16 squares in 4 rows by warp and weft stripes in red while the squares formed at their crossings are in white. The squares have alternately a motif of an elephant and a motif of a bird. The elephant and the bird face opposite directions. The elephant is in red and white and red check standing on a white and red check platform or spread. It is set on black ground. The bird in red and white and red check with a decorative tail is set in a black octagon which in turn is set within a white and red check square with a white border having red diamonds evenly spaced. The entire design is in tied and dyed warp and weft in black, red and white. The red runs on to white as well as on to black giving an appearance of red colour wash. There is a small of oil from the fabric.



Analysis of contemporary Fabrics of Andhra Pradesh :

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Calico Museum of Textiles No. 2458

Cotton Telia rumal (chowka), Chirala, 1973.

Ends per cm. : 22

Picks per cm. : 23

Count of warp : 30^SCount of weft : 30^S

Length : 1.09 mtrs.

Width : 1.08 mtrs.

It is almost a square piece. The central design which is 64.5 cms. in length and 63 cms. in width is flanked by the longitudinal borders of 22.5 cms. each on two sides and two transverse cross borders of 22.5 cms. each on the other two sides. The longitudinal as well as cross borders are alike and have red ground with three stripes of white lines, one wide stripe at the edge, one stripe at the centre and one stripe adjacent to the central square. The three stripes form four squares at each of the corners.

The central design has a stripe of dice-patterned diamond figures in pink and red alternating with a stripe of flowers, one star-shaped and another round figure in pink, red and black on black ground. The two stripes together make an overall effect of flowers and dice diamonds in pink, red and black.

The entire weaving is with tie and dye warp and weft.

It is almost a square piece. The central design part which is 66.5 cms. in length and 62 cms. in width is flanked by two longitudinal borders of 24 cms. each on two sides and two transverse cross borders of 24.75 cms. each on the other two sides. These borders are exactly as in rumal in plate 72.

The central design has been divided into 16 large squares by plain warp and weft pairs of pink lines. The crossing places of the parallel lines are filled with pink tie and dye spots.

The figures in the squares form two stripes. The first longitudinal stripe consists of a square of three red flowers with pink outline and centre, one pink flower, six leaves in red and pink check all on black ground, alternating with a square consisting of a mermaid with human head and cow's tail in pink, and red wings of birds in pink and red check and horse's body in pink and red all on black ground. The second longitudinal stripe consists of a square with a parrot in pink and red with pink and red check wing sitting on a stand and holding fruits in the mouth, all in pink and red on black ground alternating with a square having a red tiger in red with pink outline and two semicircular sun-like red figures with pink outline. These two stripes repeat in the central square.

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The entire weaving is in tied and dyed warp and weft.

It is almost a square piece. The central design part which is 67 cms. in length and 68 cms. in width is flanked by two longitudinal borders of 24 cms. each on two sides and two transverse striped cross borders of 24 cms. each on the other two sides. The longitudinal as well as cross borders are alike and have red ground with three stripes of white lines, one wide stripe at the edge, one stripe at the centre and one stripe adjacent to the central design. The three stripes form four squares/rectangles at each of the corners. The corner squares/rectangles nearest to the central square have transverse white lines in extra weft.

The central design is again divided into 64 squares by pairs of pink longitudinal and transverse woven lines with pink tie and dye spots in the crossings. All the 64 squares have floral and leaf motifs in red, pink and red checks and pink

outlines on black ground. There are 16 such different motifs in 16 squares forming a quarter which repeats four times in the central design.

All the figures are in tie and dye warp and weft.

Plate 75

Calico Museum of Textiles No. 2469

Cotton Gunj saree, Pochampalli, 1973.

Ends per cm. : 30

Picks per cm. : 26

Count of warp : 100^s

Count of weft : 60^s

Length : 5.48 mtrs.

Width : 1.14 mtrs.

Border

Plain Chocolate border of 7.62 cms. width.

Body

Mixed colour of black and chocolate. The layout of design is in stripe form. There are two stripes of heart - shaped figures in red and white outline placed inside green creeper forming heart-shaped outlines. Besides, small oblong irregular diamond-shaped figures in white, green and yellow; white and red; green and yellow and rectangular spots of yellow are set within the creeper outline and around the heart-shaped figures. The effect is all-over but stripe effect has not been eliminated altogether. All the figures and ground are in weft tie and dye and chocolate warp except a portion in the pallav where chocolate weft interlace with chocolate warp.

Pallav

Plain, in red colour of 45.72 cms. width flanked by two plain woven yellow lines on either side with a central stripe of 7.62 cms. width with half of each of the body stripes flanked by two plain woven narrow lines.

Plate 76a

Calico Museum of Textiles No. 2470

Cotton Koya Teega saree, Pochampalli, 1973.

(Not illustrated: similar to plate 76b which is illustrated)

Ends per cm. : 30

Picks per cm. : 25

Count of warp : 80^s

Count of weft : 80^s

Length : 5.50 mtrs.

Width : 1.20 mtrs.

Border

Plain, blue border of 11.43 cms. width.

Body

It is blue and the layout is in stripes. There are three stripes. Two stripes are similar in character but one is slightly longer than the other. The short stripe is formed by alternate diamond figures in yellow and green and white outline connected by white crosses while the longer stripe has alternately widely-spaced diamond figures in red and green and white outline connected by large crosses. The result is that the green diamond figures of both the stripes are adjacent to each other while the red and yellow diamond figures are alternately placed. The third stripe which is placed in between the above mentioned two stripes has four repeats of two small red diamonds in white outline connected by a white line, the diamond flanking the yellow diamond of the short stripe mentioned above. The overall effect is diamonds and white crosses all-over. The stripe effect is, however, dominant.

stripe effect is, however, dominant.

All the figures are in weft tie and dye and blue warp except a portion in the pallav where the blue weft interlaces with blue warp.

Pallav

The pallav is plain blue with a central stripe of transverse weft tie and dye stripe of 11.43 cms. wide having one repeat of similar diamond as in the body flanked by fine plain woven yellow lines.

Plate 77b

Calico Museum of Textiles No. 2471

Cotton Koya Teega saree, Pochampalli, 1973.

Ends per cm. : 30

Picks per cm. : 25

Count of warp : 80s

Count of weft : 80s

Length : 5.56 mtrs.

Width : 1.19 mtrs.

Same as the cotton saree described in No. 76a but the colour scheme being green border, brown body and green pallav. All figures are in weft tie and dye. The warp is tie and dye green in pallav and brown in the body.

Plate 77

Calico Museum of Textiles No. 2468

Cotton Tabelu burra saree, Pochampalli, 1973.

Ends per cm. : 29

Picks per cm. : 23

Count of warp : 60s

Count of weft : 60s

Length : 5.56 mtrs.

Width : 1.19 mtrs.

Border

Plain orange-red colour of 7.62 cms. width with two central diamond woven stripes of jari.

Body

The body is of orange colour. The layout is in squares all over the body formed by two similar stripes but similar figures placed alternately. The stripe consists of warp and weft tie and dye squares having one square of diamond in grey with white outline and orange-red and white centre on orange-red ground and white check on blue ground sides of the square and another square with white star-shaped figure on blue ground and white check on blue ground sides of the square. The two squares are placed alternately in longitudinal as well as in transverse positions.

All figures are in warp and weft tie and dye.

Pallav

Plain orange-red pallav 50.80 cms. wide with one central stripe as in the body but only in weft tie and dye on orange-red warp flanked by two plain woven fine lines of jari on either side.

Plate 78

Calico Museum of Textiles No. 2463

Silk saree, Pochampalli, 1973.

Count of warp : 20/22 den, 4 fold

Ends per cm. : 31

Count of weft : 20/22 den, 2 fold

Picks per cm. : 27

Length : 5.32 mtrs.

Width : 1.23 mtrs.

Border

It consists of plain red 5.08 cms. wide woven stripe, jari woven stripe of small diamonds, 2.54 cms. wide, a warp and weft tie and dye stripe of 5.7 cms. in width and a ribbon stripe of jari woven small diamonds, 0.63 cms. wide. The tie and dye stripe is composed of yellow diamond, red diamond, white diamond and green diamond placed one within the other respectively with a black spotted border for the largest yellow diamond which is flanked by two small red and white diamonds and one small green diamond on either side. The entire composition is on black and white ground. The figures are steppy in outline.

Body

Overall colour is red. The layout is in the form of one row of large red diamonds alternating with large black diamonds all in warp as well as weft tie and dye. The diamonds have white spotted border. The red diamonds have decorative floral motif in white, green, yellow and black-brown and the black diamonds have decorative diamond of yellow spots and a white decorative star of diamond shape with red and yellow centre. Green figures are at intervals in the space between the white spots outline of the large diamond and the yellow spots forming diamond within the large diamond. All are in warp and weft tie and dye. The figures are steppy in outline and do not have smooth outline.

Pallav

A red pallav 60.95 cms. wide with plain woven gold ribbon and line transverse stripes and three warp and weft tie and dye transverse stripes similar in composition and width as in the border.

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Plate 79

Calico Museum of Textiles No. 2466

Silk Karabby saree, Pochampalli, 1973.

Count of warp : 16/18 den, 2 fold call Ends per cm. : 39

Count of weft : 20/22 den, 4 fold Picks per cm. : 33

Length : 5.36 mtrs. Width : 1.19 mtrs.

Border

Plain woven reddish-pink stripe, 3.80 cms. wide, jari woven small diamonds stripe, 1.27 cms. wide, plain woven white stripe, 0.16 cms. wide, plain woven reddish-pink line, 0.08 cms. wide, plain woven with stripe, 0.16 cms. wide, plain woven reddish-pink stripe 0.08 cms. wide, warp tie and dye stripe, 9.84 cms. wide, plain woven reddish-pink stripe 0.08 cms. wide, plain woven white stripe 0.16 cms. wide, plain woven reddish-pink stripe, 0.08 cms. wide, plain woven white stripe, 0.16 cms. wide and jari woven small diamond stripe, 0.63 cms. wide compose the border. The warp tie and dye stripe is divided into oblong octagonal figures with red ribbon outline. White elephant motif, green parrot motif and a decorative floral motif in green, red and white are placed in the centres of the octagonal figures in consecutive order.

Body

The layout is in the form of large blue diamonds having deep

chocolate, white and small blue diamonds one within the other, alternating with a large deep chocolate diamond having white and small deep chocolate diamonds one within the other. The large diamonds, both blue and chocolate are again placed inside the diamond spaces formed by reddish pink ribbon diagonal bands with blue diamonds at the crossings and two small white diamonds on each side. All diamonds and ribbons have white spotted outline. The overall outlook is a carpet of diamonds in various colours and all are in weft tie and dye.

- Pallav** Reddish-pink pallav of 60.95 cms. width having jari woven ribbon and line transverse stripes and two weft tie and dye transverse stripes of nearly 12.70 cms. in width, similar in composition as in the border.
- Plate 30** Calico Museum of Textiles No.2467
Silk Jaggu batani saree, Pochampalli, 1973.
Count of warp : 16/18 den. 2 fold Ends per cm. : 39
Count of weft : 20/22 den. 4 fold Picks per cm.: 33
Length : 5.52 mtrs. Width : 1.19 mtrs.
- Border** Plain woven red stripe, 2.54 cms. wide, jari woven small diamond stripe, about 1.90 cms. wide, red and white plain woven stripe, 0.32 cms. wide, red plain woven stripe, 0.16 cms. wide, red and white plain woven stripe, 0.32 cms. wide, warp tie and dye stripe, 8.89 cms. wide, red and white plain woven stripe, 0.32 cms. wide, violet plain woven stripe, 0.16 cms. wide, red and white plain woven stripe, 0.32 cms. wide, violet plain woven narrow line, jari woven danti (tooth-shaped) stripe and a weft tie and dye mauve ribbon stripe compose the border. The wide warp tie and dye stripe is divided into oblong octagonal figures of red ribbon outline on deep chocolate ground. White elephant motif, green parrot motif, decorative flower motif in red, white and blue and fish motif are placed in the diamond spaces consecutively. Small green diamonds join consecutive red ribbon diamonds.
- Body** Violet, blue and deep blue and yellow body is divided into squares by violet and white weft tie and dye ribbon stripes in longitudinal and transverse order. The crossings of the above mentioned longitudinal and transverse stripes are in white squares. One square has figures of deep blue diamonds with light blue corners of the square and four small yellow diamond figures on the deep blue diamond ground. Another square has a figure of deep blue diamond with yellow corners of the square and a violet cross-shaped figure with white and yellow centre on the deep blue diamond ground. The above-mentioned two squares alternate with each other longitudinally as well as transversely. All figures have white outline and the diamonds have white spotted outline.
- Pallav** A red pallav of about 60.95 cms. in width having transverse jari woven ribbon and line stripes and two weft tie and dye stripes

of 12.06 cms. in width almost similar in composition as in the border except the fish motif.

Plate 81

Calico Museum of Textiles No. 2464

Silk Fish chowkdy saree, Pochampally, 1973

Count of warp : 16/18 den, 2 fold Ends per cm. : 31

Count of weft : 20/22 den, 4 fold Picks per cm. : 29

Length : 5.44 mtrs. Width : 1.19 mtrs.

Border

Red plain woven stripe, 4.44 cms. wide and warp tie and dye stripe, 3.17 cms. wide compose the border. The warp tie and dye stripe has stepped figures of deep chocolate, white, green and yellow colours with similar figures in red and blue in between placed in the opposite manner.

Body

The body is divided into large and small squares and rectangles. 3.80 cms. wide longitudinal stripes and 3.80 cms. wide transverse stripes of warp and weft fish motifs in green, warp tied and weft tied respectively, flanked by plain woven yellow and red narrow lines form the rectangles on four sides of large squares. The squares at the crossings of the longitudinal and transverse stripes have red and white small checks of warp and weft tie and dye.

One large square has over-all blue ground effect with five bluish-white diamond figures with blue centres and yellow spots. The corners of the square are blue triangles on two base lines, one of white spots and another of deep blue spots. Another large square has over-all yellowish-brown ground effect with four yellow heart-shaped figures on reddish brown and brown ground. The corners of the square are yellow triangles on white spotted base lines. There are two other squares one in over-all blue effect and the other in yellowish-brown effect but with slightly different figures within. The above-mentioned four squares, two blue and two yellowish brown are so placed that the blue squares are diagonally opposite to each other and the yellowish brown squares are diagonally opposite to each other. The colour scheme is full of harmony as well as contrast giving a novel effect.

Pallav

Plain woven red transverse stripe, 22.22 cms. wide and a weft tie and dye stripe of 3.17 cms. in width similar in composition as in the border.

Plate 82

Calico Museum of Textiles No. 2465

Silk (Mulbery) Pan Patola saree, Pochampalli, 1973

Count of warp : 16/18 den, 2 fold Ends per cm. : 39

Count of weft : 20/22 den, 4 fold Picks per cm. : 34

Length : 5.36 mtrs. Width : 1.14 mtrs.

Border

1.27 cms. wide green selvedge, 1.27 cms. wide Jari woven small diamonds stripe, 1.90 cms. wide warp tie and dye stripe flanked by white and green narrow woven stripes on

either side, 6.98 cms. wide warp tie and dye stripe flanked by white narrow woven stripe on either side, 1.90 cms. wide warp tie and dye stripe flanked by white and green narrow woven stripes on either side and a narrow jari woven danti (tooth shape) stripe compose the border. The 1.90 cms. wide warp tie and dye stripes are simple having alternately white and green geometrical figures. The 6.98 cms. wide warp tie and dye stripe has two wavy white lines crossing each other forming diamond spaces on deep green ground. The diamond spaces have white steppy small diamond-like figures representing leaves and flowers with green or red or yellow central spots.

Body

The body is white. The layout is in large green diamond figures formed of broken serrated lines. The large green diamond figures join each other horizontally with a central white and green flower and vertically by green solid diamond figures with white centre spots. Each large green diamond has four pan-shaped solid green motifs in four corners each joining a central green diamond-shaped solid motif with white centre spot by green lines. Besides, there are four green and white floral motifs in the large diamond space.

The entire design is in weft tie and dye. It has a pleasing effect of harmony in green on white.

Pallav

A green pallav of 50.80 cms. in width having transverse tie and dye stripe (as in the border) in the centre flanked by jari plain woven ribbon and line stripes. The transverse tie and dye stripe is in weft tie and dye and the steppy small diamonds representing leaves and flowers are in white with blue centre spots.

OBSERVATIONS ON THE ANALYSIS OF OLD AND CONTEMPORARY FABRICS

Observations on the analysis of fabrics of Bargarh - Sonepur and Nuapatna areas:

In the old fabrics of Bargarh - Sonepur area tie and dye figures whether in warp or weft are simple like danti (spikes), kaudi (small rectangular curved figure on a line base), kangula (small triangular figure), small duck, fish, lion and simple creeper, bird and flower. The diced designs of squares are also simple designs in warp and weft tie and dye. They are of one ground colour only. Design outlines are all in white. Elaborate ornamental designs in tie and dye are conspicuously absent. The richness of design is brought about by combining finely woven and simple tie and dye designs. The richness was also due to the rich colour scheme comprising red, black, white, orange, green and blue.

It is also important to note that ordinarily no motif is formed by both warp and weft tie and dye. It is formed either by warp tie and dye or by weft tie and dye except in the case of dice design where both warp and weft are of tie and dye. Tassar and silk tie and dye were non-existent.

The tie and dye weaving in Nuapatna (Tigria) area, as seen in the old samples, is in silk and tassar. The general layout is in stripe form made mostly of bold and small motifs placed in straight or alternate manner. The figures do not cover the entire field. Colours used mainly are red, chocolate, yellow and green. Motifs are elephant, deer, parrot, nabagunjara, creeper, small flower, star small and large and large lotus flower etc. The fabrics are in sarees and khandua form. However, the patterns in khandua differ from the patterns in sarees. Both were used in wedding and still continue to be used at such occasions. It will be noted that cotton tie and dye fabric was not produced at Nuapatna till the middle of this century.

It will be observed from the analysis of the contemporary cotton fabrics of Bargarh-Sonepur area, that the general layout of the saree has undergone changes in the field while the borders and pallav layout continue in the older tradition. An attempt is being made in breaking the stripe layout of the field by dispersing the motifs as evenly as possible and introducing figures in large squares by employing warp and weft tie and dye longitudinal and transverse stripes. There is also an attempt to use both warp tie and dye and weft tie and dye more and more in the field. The weave in tie and dye figures is plain. Except the kumbhas the border tie and dye still remains exclusively warp tie and dye and the pallav tie and dye exclusively weft tie and dye. The craftsmen are also artists in their own right. They are trying to introduce from their imagination elements of landscape and sceneries in borders and pallavs. Precision and perfection in tying and dyeing and also in weaving have developed to such an extent that expert craftsmen are trying to give their patterns colour shades which could be approximated with naturalistic patterns in painting. There is however almost no change in traditional motifs. Due to availability of synthetic colours and in order to give naturalistic bias to their patterns the weavers are using synthetic colours.

Similar changes may also be observed from the analysis of contemporary silk fabrics of Nuapatna (Tigria area). While the old layout and designs are still popular, attempt is being made to diversify the layout and to break the stripe effect. The layout in large squares in the body by warp and weft tie and dye

longitudinal and transverse stripes is now being introduced apparently in the same manner as in Bargarh-Sonepur area on cotton fabrics. While the old motifs of elephant, nabagunjara, flowers, stars, leaves and fish still continue, attempt is being made to introduce some new motifs such as flaming lamp, pairs of elephants, floral pattern covering the entire field, diagonal lines etc. The weave of tie and dye figures is plain. The use of variety of synthetic colours has brought in bright shades, although the technique of dyeing with bright colours has not yet been widely adapted, with the result that dull shades continue to prevail. It is further observed that in Bargarh-Sonepur area attempt is being made to weave cotton fabrics like silk khandua patterns of Nuapatna area, and in Nuapatna area attempt is being made to weave silk fabrics like cotton chowka pattern of Bargarh-Sonepur area.

As already mentioned earlier great change has taken place in weaving cotton tie and dye fabrics in Nuapatna area although it has not reached the same height of craftsmanship as in Bargarh-Sonepur area.

Practically no serious attempt is made in Bargarh-Sonepur area to weave tie and dye on silk or tassar in bulk while tassar tie and dye continues to be woven in Nuapatna area.

Observations on the analysis of fabrics of Andhra Pradesh :

It is observed that in Chirala only cotton rumals are woven, locally known as Telia rumals. They are almost square pieces of about 55 to 75 cms. side. The weave is plain with tied and dyed warp and weft yarn. The general pattern of all rumals is invariably the same, that is, wide borders and cross borders and a large square within, the field of which is divided again into smaller squares. The motifs consist of all-over diamonds within diamonds or flowers, elephant and bird within the squares. The colours used are red, chocolate, black and white. In present rumals pink is preferred to red and chocolate. Very often if the borders and cross borders are in chocolate or red colour the background colour of the field of the central squares is in black and vice versa. The outline of the diamond figures is stepped while the outline of other motifs is natural. The rumals normally have a strong smell of oil, probably due to alizarine-red dyeing. The process for alizarine dyeing is perhaps not being followed strictly with the result that the red colour spreads and runs on to other colours in the fabric. The smell of oil is less strong in rumals produced presently. These rumals are used as lungies or head dress in Muslim countries and by fishermen and cowherds of Andhra Pradesh, Madras and Bombay.

Pochampalli has also been producing cotton rumals whose layout and motifs are similar to those of Chirala. Besides traditional motifs new motifs like the aeroplane, clock etc. have also been used. The colours used, although the same, namely red, black, pink and white, the running of red or pink colour on to other colours is conspicuously absent, probably due to use of synthetic colours. During the present study of tie and dye fabrics in Pochampalli we did not find any rumal in which red or pink colour runs. The weave of Chirala rumals is more compact in comparison to those of Pochampalli.

In present production of sarees in Pochampalli the popular motif is stepped diamond motif although attempt has been made to divide the field into squares.

Weavers are attempting to use animal and fish motifs on a large scale. Steppy nature of the outline of the figures still widely persists although effort is being made to introduce smooth curved outline in the motifs. The weave of tie and dye figures is plain. Great change is noticeable in the use of colours. No longer the scheme of red, chocolate, black and white only is seen. There appears to be an urge to use colours to impart bright shine to the fabrics even though the colours may not be fast to withstand washing. The layout is not the same as that of Orissa tie and dye fabrics (Bandha) or that of Gujarat patolas. The outline of figures is in more conspicuous steps than those of Gujarat patolas. The tie and dye fabrics of Gujarat, Orissa and Andhra Pradesh are at present easily distinguishable from each other in the layout, outline of figures and colour scheme. It is possible that the tie and dye technique of Pochampalli has been influenced by the patolu technique of Gujarat and hence the steppy nature of the outline of the figures. There is however a noticeable attempt at Pochampalli to produce tie and dye similar to those of Orissa. It is possible that not long before the weavers of Pochampalli will be able to produce fabrics exactly similar to those of Orissa.

TECHNOLOGY

Technology of tie and dye (ikat) weaving :

Although the tie and dye technique is age old and has developed into a very high precision and skilled technique no detailed study of the same appears to have been made by technologists. The technique in details has more or less remained with the craftsmen, others having only a broad knowledge about it. Attempt has, therefore, been made to study the details as practised by the weavers and, as much as necessary, to understand the basic principles of practical technology. The assumption is that the reader has the basic knowledge of handloom, ordinary weaving, dyeing and connected technical terms.

The basic feature of the tie and dye technique is to produce design on fabric by ordinarily plain interlacement of warp and weft which are already dyed in different colours according to the need of the design. The yarn in the warp and/or weft is dyed in different colours at different places. This is done by tying the place tightly by thread, thick leaf or rubber strip where no dyeing is required and dipping the yarn in dye bath, as in the usual process in hand dyeing, bringing in colour to the portion that is not tied. The process may be repeated by tying the dyed portion and opening full or part as necessary of the previously tied portion and then dyeing the yarn bringing in another colour on the yarn at places where required as per design. The process of tie and dye may be repeated to bring in more colours on to the yarn at different places.

For instance taking the simplest example (Fig. 0) the length of yarn AN is to be dyed so as to produce a line of colour in the order as given below:

AB, MN	- Deep Blue
CD, KL	- Green
EF, GH, IJ	- Red
BC, DE, FG, HI, JK and LM	- White (no colour)

Since no colour is to be produced at BC, DE, FG, HI, JK and LM these portions are to be tied. As the yarn can conveniently be dipped into dye-bath of one colour at a time and it is desirable to dye from comparatively lighter to darker colours in successive steps, the yarn may be dyed green as the first step, red as second step and deep blue as the third step. For dyeing green all portions AB, MN, EF, GH, IJ are tied keeping only CD & KL open. By dyeing the yarn green only CD and KL become green leaving the other portions without any appreciable effect as these portions are tied. To bring in the next colour, red, on the yarn EF, GH, IJ are to be untied and kept open and the green portions CD and KL are tied and the yarn is dyed red thus bringing in red colour on EF, GH and IJ, all the other portions tied remain practically unaffected. Now to bring in deep blue colour on the yarn in the next step EF, GH and IJ are tied again keeping only AB and MN open and then the yarn dyed deep blue thus bringing in deep blue colour on AB and MN. Then the entire yarn is untied and the yarn appears dyed as required above. While on the principle of tying and dyeing, it may be easy to understand that tying of some portions may be omitted in one step if the portions are allowed to be dyed in lighter colour along with other portions and then in the next step the portions are dyed in the deeper colour on the top of the lighter colour already on it. Of course the light colour and dark colour are such that the darker one can be put on the top of the lighter one completely concealing the latter - for example red and yellow. This is done to minimise the tying process as much as possible.

If pre-tied and dyed weft coloured threads are arranged pick after pick interlaced with warp threads, the required weft tied and dyed design is produced on the fabric. If pre-tied and dyed warp coloured threads are arranged in the warp side by side and interlaced with weft threads, the required warp tie and dye design is produced on the fabric. Lastly if pre-tied and dyed warp threads interweave with pre-tied and dyed weft threads, a design of warp and weft tie and dye is produced on the fabric. Tie and dye warp and tie and dye weft interlacement are employed generally to bring out the same colour of warp and weft together at the same place in order to brighten the colour effect which is slightly dulled by interlacement at a particular place of differently dyed warp and weft.

Fig. 1 gives an exaggerated view of weft tie and dye threads interlaced with monocoloured warp threads (warp threads not shown).

Fig. 1a gives the weft tie and dye figure as it may look (not to size) on the fabric.

Fig. 2 gives an exaggerated view of warp tie and dye threads interlaced with monocoloured weft threads (weft threads not shown).

Fig. 2a gives the warp tie and dye figure as it may look (not to size) on the fabric.

Fig. 3 gives an exaggerated view of tie and dye warp threads interlaced with tie and dye weft threads.

Fig. 3a gives the warp and weft tie and dye figure as it may look (not to size) on the fabric.

One can visualise that because of the interlacement of already tied and dyed

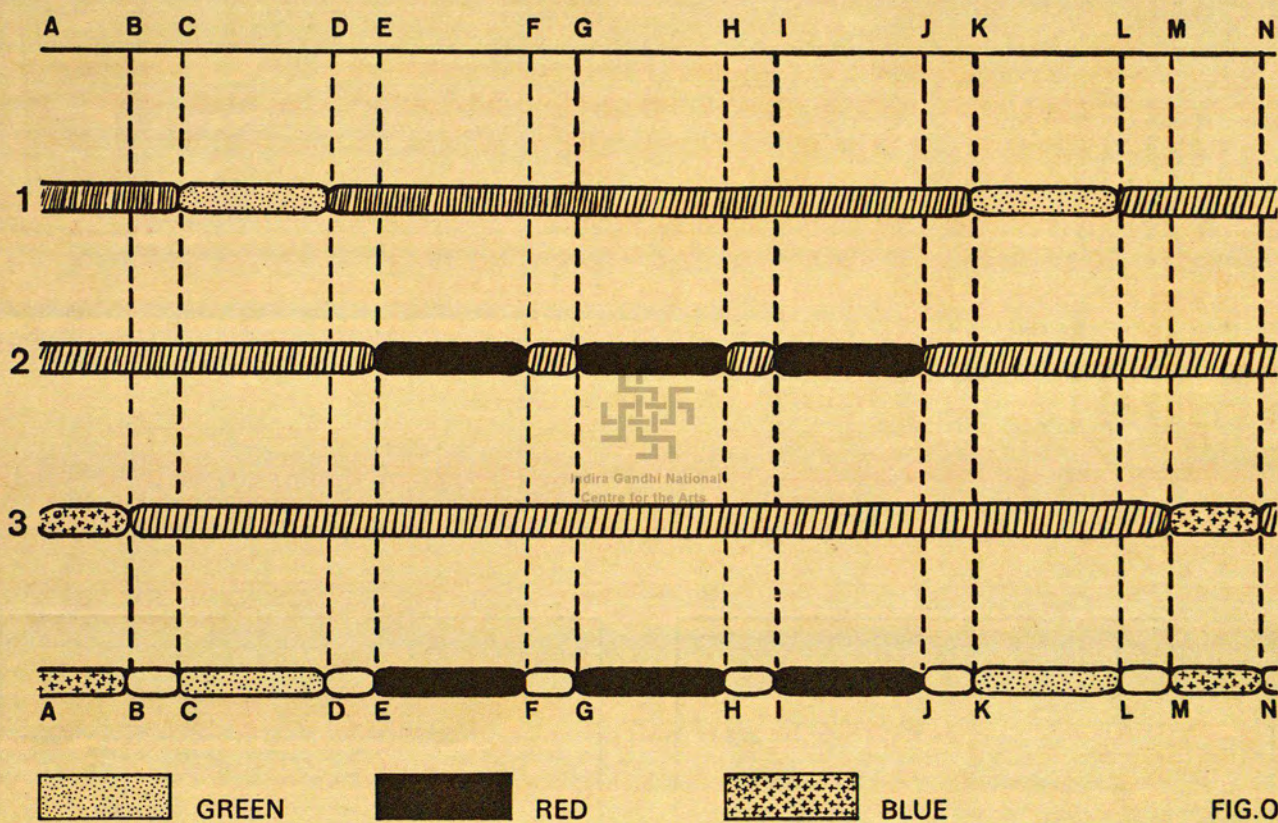


FIG.O



FIG.1



FIG.1a



FIG. 2



FIG. 2 a



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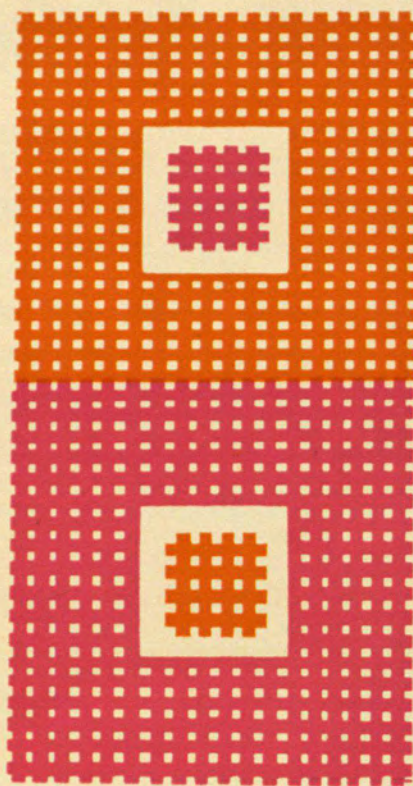


FIG.3



FIG.3a

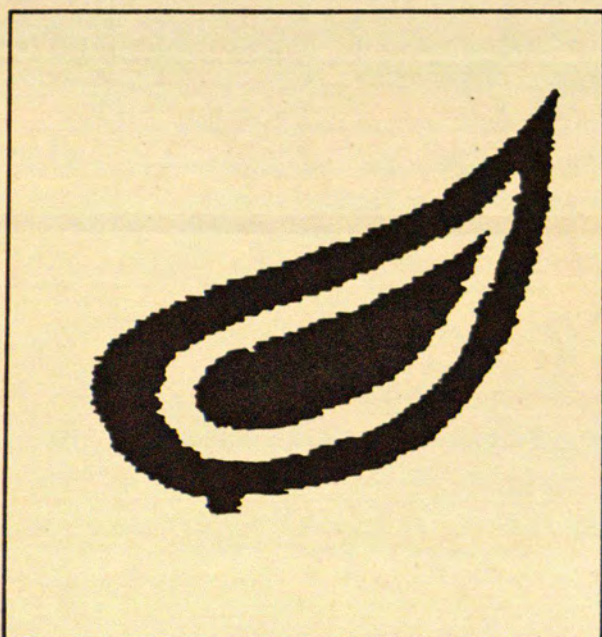


FIG.4

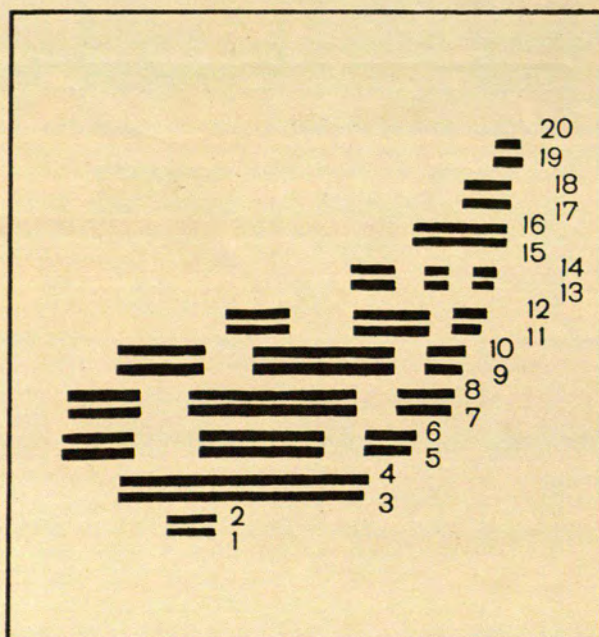


FIG.4a

threads the figures will appear similar on either side of the fabric.

There appears to be an unlimited scope of designing on textiles in tie and dye process. The limits are only due to craftsmanship and material and particularly due to uneconomic production. It will be easy to consider this aspect when the work involved is listed out as follows:

1. Assuming that fig. 1 appears on a cloth on the same weft threads, say five times, one has to tie or untie the weft threads at five different places in each dyeing.
2. If there are again ten such rows of five figures as in 1 above in the fabric, one has to tie and dye ten groups of weft threads and bring in 50 figures on the fabric.
3. Increased number of colours used in bringing out figures will increase the number of tyings and dyeings.
4. If the designs are all over and connected with each other in some way by tie and dye links all the picks in the fabric may have to be tied and dyed.
5. Similar problems as explained above will occur if warp tied and dyed figures are to be brought on the fabric.
6. If, however the figures have to be brought on by both warp and weft tie and dye the problem is doubled.
7. In weaving with weft tied and dyed threads it is necessary to place each successive pick in exact position in relation to the previous one. A little lateral shift will distort the figure. The weaving is, therefore, time-taking as each pick has to be properly adjusted, with respect to the design and consequently to the previous pick.
8. Warp tie and dye figures are easier to be woven but due to longer stretch of warp required on the loom and the warp threads having varying tension it is difficult to keep the tie and dye warp threads in proper relative position to each other. A slight shift in the relative position of threads will distort the figure. Adjustment of tension of individual warp threads is necessary from time to time for good weaving and sharp figures.
9. In figures developed by employing both warp and weft tied and dyed threads the weaving is slightly more difficult and time-taking if nearly-perfect outline of the figure is required to be obtained. For geometrical figures it is not so difficult as for figures with curved outlines. Adjustment of each pick after picking and adjustment of each warp thread from time to time are necessary during weaving.

The requirements mentioned above are enormous, some of which can be reduced to a minor extent. The greatest problem, however, is that all the above-mentioned work is for only one fabric and thus it becomes most uneconomic however artistic it may be. The most important technique in the tie and dye process is, therefore, how to tie and dye at the same time not only for several groups of threads for

one fabric but also for a greater number of fabrics of the same design. To explain this a small example of weft tie and dye, fig. 4 (exaggerated view on 10 weft-threads) may be referred to. If five such figures appear on the same weft threads along the width of the fabric there is no other way except to tie or untie the threads at five different places in each dyeing. If, however, the row of the weft figures also repeats, say 10 times, in one fabric there is a possibility of minimising the labour by tying and dyeing for all the ten rows at a time, that is, by tying and dyeing 10 groups of weft threads at a time. Similarly for five fabrics 50 groups of weft threads are to be tied and dyed at a time. The tying and dyeing for one fabric may be considered first. There are 50 figures on the fabric tied and dyed on 10 groups of weft threads each group of weft threads having 5 figures. The first pick of each of the 10 groups are alike and hence can be sub-grouped. Similarly second pick, third pick and so on can be sub-grouped. As the design is forming on 10 picks there will thus be 10 sub-groups of 10 threads each, the first sub-group having all the first picks of the 10 groups of weft threads, the second sub-group will have all the second picks of the 10 groups of weft threads, the third sub-group will have all the third picks of the 10 groups of weft threads and so on. If the picks are numbered we have 1, 11, 21, 31, 41, 51, 61, 71, 81, 91 in the first sub-group, 2, 12, 22, 32, 42, 52, 62, 72, 82, 92 in the second sub-group, 3, 13, 23, 33, 43, 53, 63, 73, 83, 93 in the third sub-group and so on. The picks are continuous but have to be sub-grouped for tying and dyeing and when finally untied after dyeing is complete, 2nd pick comes after 1st, 3rd after 2nd and so on. This is the most intricate process in tying and dyeing. In order to understand how actually the grouping and sub-grouping are done the same example of fig. 4 may be taken and for convenience only two rows of weft figures may be considered. It may also be assumed that the repeats are continuous. Thus two rows will mean 20 weft threads. Before grouping them, another aspect needs consideration. It will be observed that in fig. 4 the coloured curves are made by shifting the coloured position pick to pick. It is the practical experience of the weavers that shifting pick by pick is extremely difficult. The shifting needs to be done at a minimum of two picks by two picks. The effect of shifting by increased number of picks will be explained later under tying process. Considering the shifting two picks by two picks the design which is shown on 10 picks in fig. 4 will actually be on 20 picks, every two picks in succession are similarly tied and dyed. The figure 4 will then in actual number of picks appear as fig. 4a covering 20 picks. Now grouping the picks for two rows of figures for tie and dye will involve 40 picks, that is, two groups of 20 threads each. They are to be sub-grouped as 1, 2, 21, 22; 3, 4, 23 & 24; 5, 6, 25 & 26; 27 & 28 and so on till 19, 20, 39 and 40 which are to be tied and dyed similarly.

The standard way for grouping and sub-grouping them is by separating the picks to be tied and dyed similarly and then by leasing the groups and sub-groups till tying and dyeing is completed and untying is effected. The leasing of the 40 threads is explained below. Leasing is done for four purposes. (1) To separate each thread from the other; (2) separating the group of threads of one repeat from the group of threads of the other repeat. (3) to separate threads of the two groups in sub-groups for the purpose of tying and dyeing and (4) separating the sub-groups from one another till tying and dyeing are completed.

A schematic representation of separating and leasing is shown in fig. 5

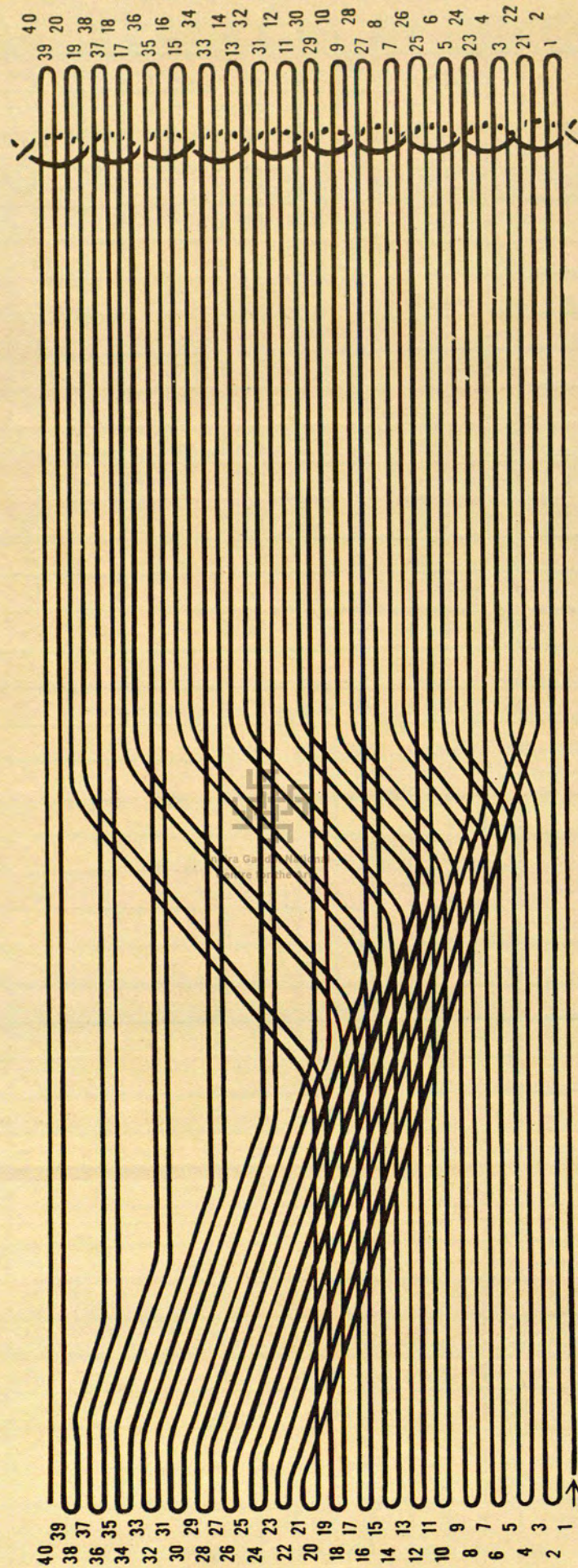


FIG. 6

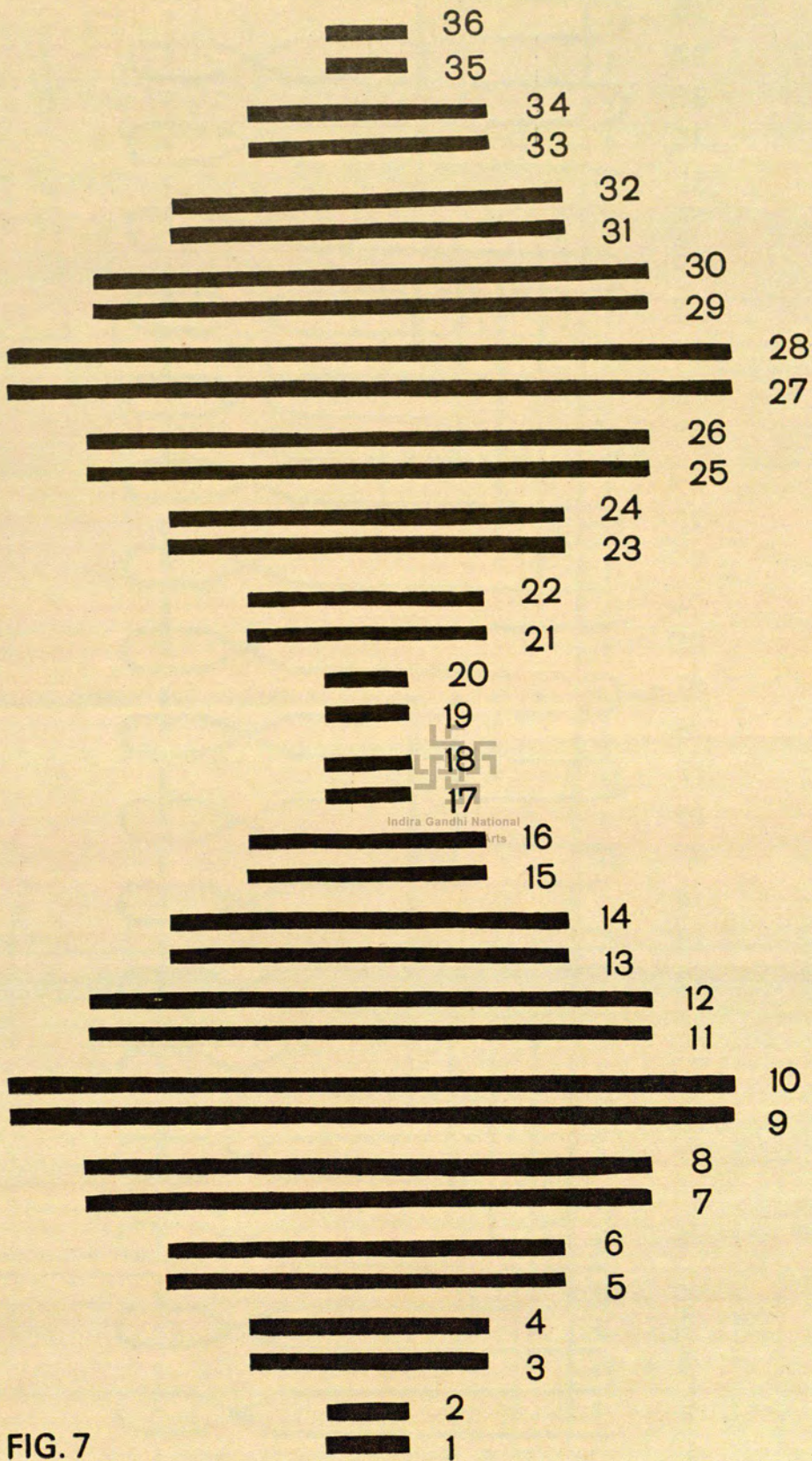


FIG. 7

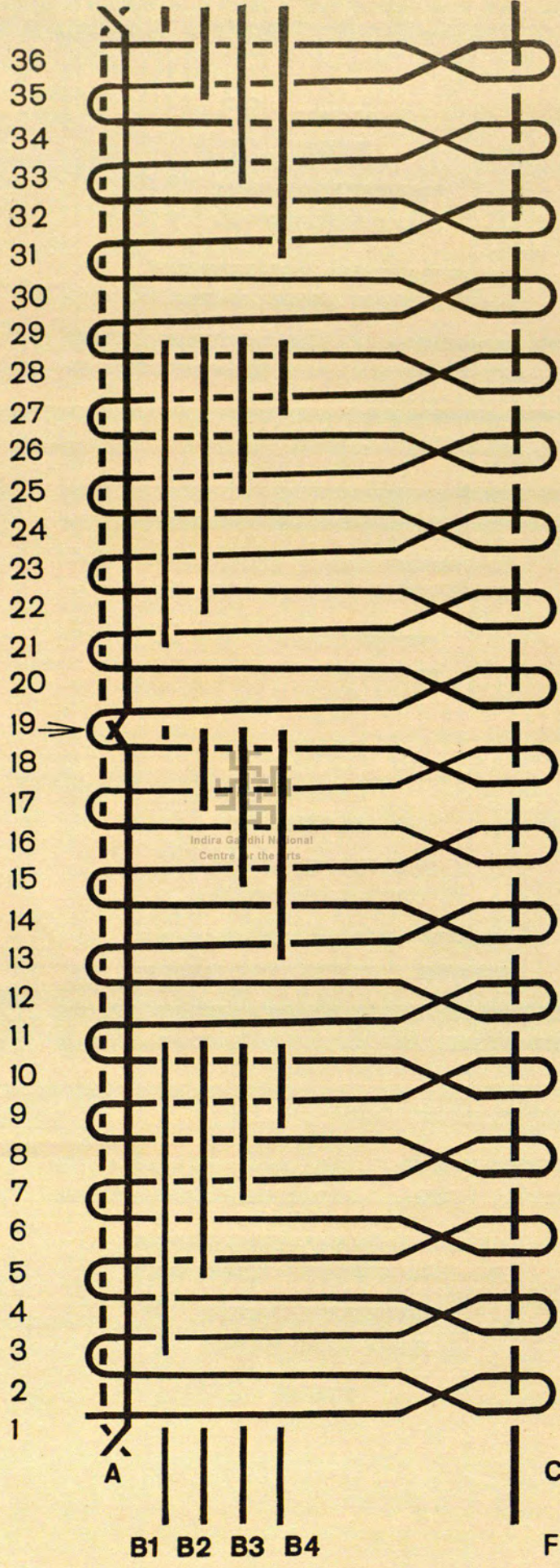


FIG.8

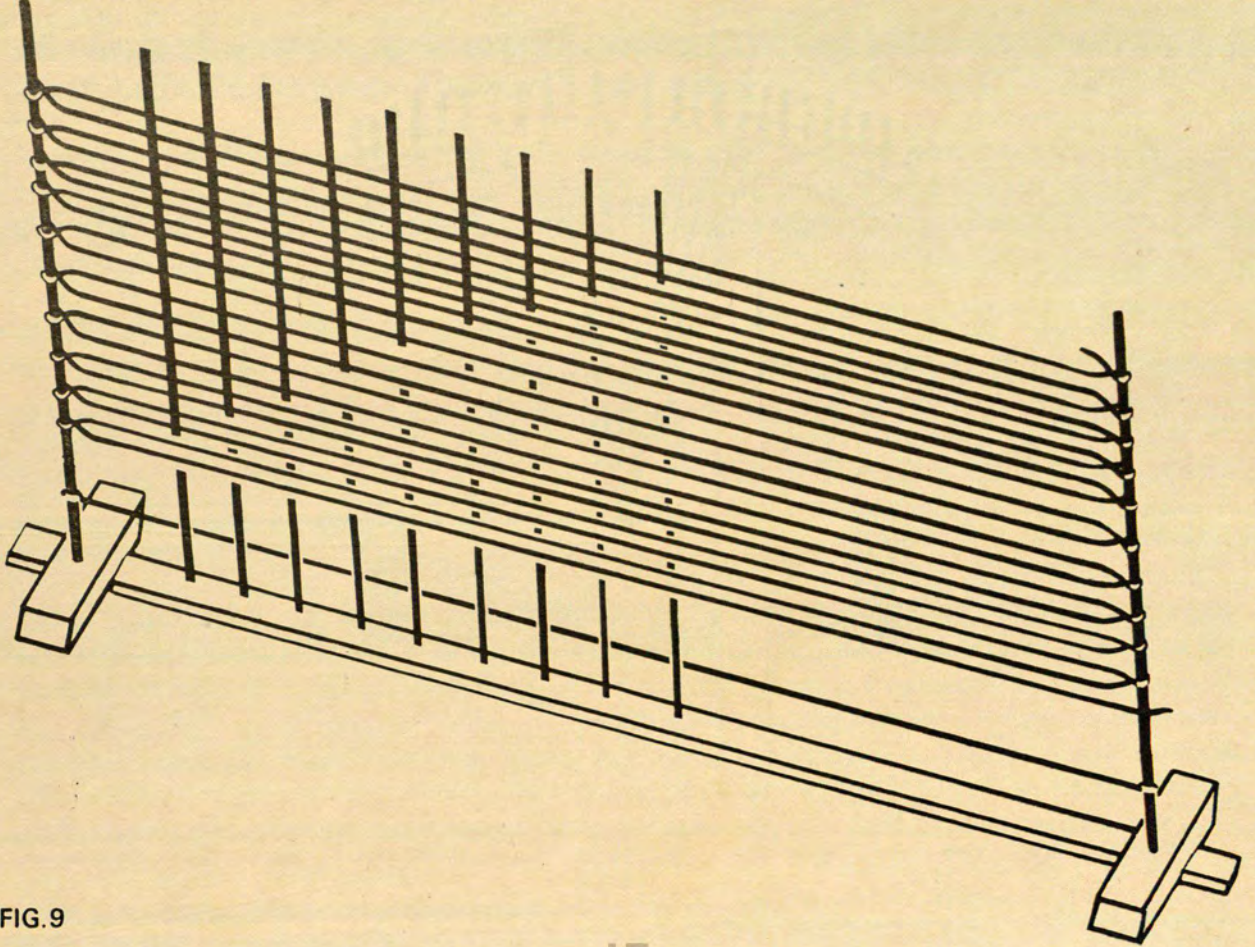


FIG. 9

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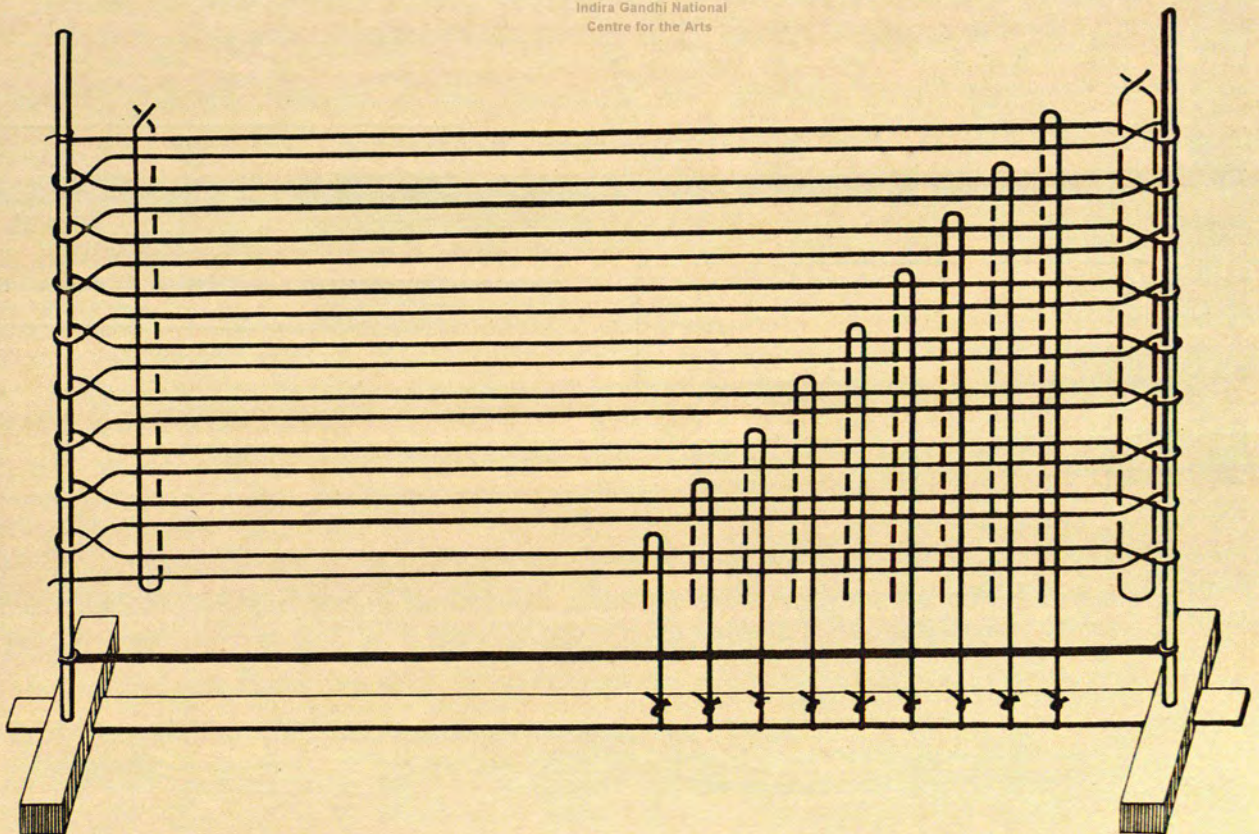


FIG. 10

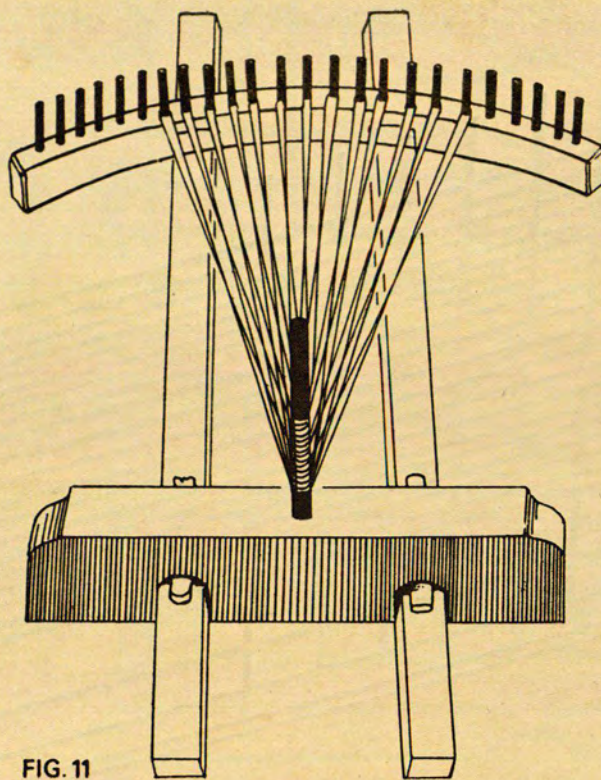


FIG. 11

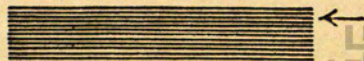


FIG. 12

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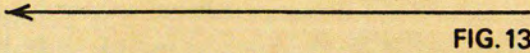


FIG. 13

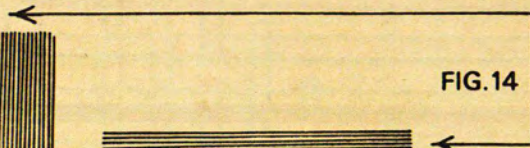
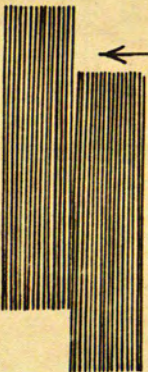


FIG. 14

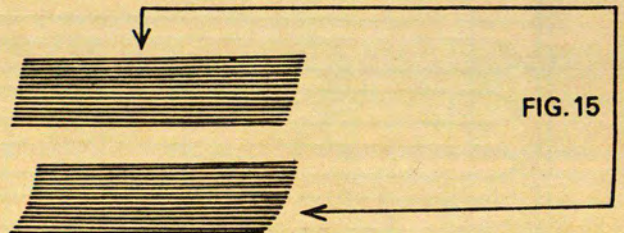


FIG. 15



FIG. 16

The lease C separates each weft thread from the next so that the position of each weft does not get mixed up with the rest.

The lease A separates the group of threads from 1 to 20 and from 21 to 40 thus separating the two groups of weft threads for the two repeats so that weft for one repeat can be easily separated, if necessary, from the weft of the other after dyeing.

It will be noticed, if studied carefully, that separator B1 separates the weft threads 1, 2, 21 and 22 from the remaining 36 threads; separator B2 separates the threads 3, 4, 23 and 24 from the remaining 32 threads; separator B3 separates the threads 5, 6, 25 and 26 from the remaining 28 threads and so on till separator B9 separates 17, 18, 37 and 38 from the remaining 4 threads namely 19, 20, 39 and 40. The separators actually separate the sub-groups which are leased.

This lease which is a very important lease is for keeping the above sub-groups of threads i.e. 1, 2, 21 and 22; 3, 4, 23 and 24 and so on, separate, so that during tying and dyeing these sub-groups may remain separate. This lease is shown in fig. 6. Although in fig. 5 the 40 threads appear to occupy so much space, actually these are in a bunch and hence putting this lease is not difficult. To make it clear, in fig. 6 the 40 threads are shown in a smaller space. Actually these may be in a space of 0.63 cm. or even less.

While on the subject of separating and leasing for groups and sub-groups, it may be important to note that separating and grouping are modified according to the design. A small example may be helpful. The design shown in Fig. 7 which is a pointed design reversing on the central weft may be considered. It is easy to understand that the design is on 18 picks shifting two by two picks as mentioned earlier. Two such repeats will, therefore, have 36 threads and the sub-groups will be 1, 2, 17, 18, 19, 20, 35 and 36; 3, 4, 15, 16, 21, 22, 33, and 34; 5, 6, 13, 14, 23, 24, 31 and 32; 7, 8, 11, 12, 25, 26, 29 and 30; 9, 10, 27 and 28. The separating and leasing should, therefore, be done accordingly which is shown in fig. 8.

The separation is usually done by means of upright sticks on a frame and taking the weft thread while preparing, in between sticks, as required for grouping and then inserting cords in place of the sticks for leasing before removing the entire weft from the preparation frame (fig. 9). It may also be done by using cords in place of sticks and turning them one after another on the threads every two threads or more (as required for shifting the tying two picks by two picks or more) till the threads for one repeat is finished and again doing the same from the starting point or in the reverse manner if it is a pointed design and then threading proper leasing cords in them (fig. 10). A third method is to use a semi-circular frame with pegs and preparing the weft between a peg at the centre of the semi-circle and the pegs of the semi-circle using the pegs for leasing purpose and then threading with leasing cords (fig. 11).

The length of the weft must be to suit the width of the cloth. When the preparation is done on a frame having two poles on either side or on a semi-circular frame having pegs the distance between the poles and between the pegs should be kept as accurate as possible allowing for a small extension during processing. Usually the distance is kept 1.3 cms. less than the cloth width. The difference including the extra length required

for interlacement (very small) is made up by the extension of the weft yarn while tying and processing. The length while preparing the weft is very important, as otherwise, the design may get distorted or excessive surplus length will have to be kept at the border of the fabric in the form of loops. The poles are kept apart at exact length by a stick in between so that the poles are not disturbed due to tension on the threads wound round about them or due to accidental wrong handling. After the weft is prepared and leased it is removed to a frame for tying. Normally the groups of weft threads or repeats are separated after cutting at the position marked A in fig.5 so that they may be used for repeats or for more fabrics.

As already mentioned before, 10 groups of weft threads are required giving 50 figures on one fabric. For 10 groups of weft threads the process is the same as for two groups explained above. In each sub-group instead of having four threads for two groups of weft threads there will be 20 threads in each sub-group for 10 groups of weft threads. It may be pointed out that all this is for one fabric only which becomes uneconomical. It is necessary to have the tie and dye at a time for 2, 4, 6 and as many fabrics as possible. This is simple, as by increasing the number of threads in a sub-group one can have weft threads for tying and dyeing for more than one fabric at a time. For example for two such fabrics one has to have double of 10 groups or 20 groups of weft threads or 40 threads in each sub-group; for three pieces 30 groups of weft threads are required to be prepared with 60 threads in each sub-group and so on. It will be understood that the more the number of pieces the more the number of threads in a sub-group or the bulkier a sub-group, gradually increasing the difficulty in tying and consequent difficulty in preventing penetration of dye in the tied position and thus preventing clean outline of designs on the fabric. In practical work there thus appears to be a limit. Ordinarily weft is prepared for 2, 4 or 6 pieces depending upon the count of yarn used and the sharpness of outline of designs required. Tying and dyeing for 2 or 4 fabrics at a time are common.

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In the case of preparation for 2 fabrics 20 groups of threads as mentioned above (with reference to the example under consideration) will be required. The first 10 groups are for one piece and the second 10 groups are for another piece. Thus after taking weft for 10 groups for one piece in the weft preparation frame the process is repeated for the second piece. If three pieces are required the process is again repeated after completing for the second piece and so on for the fourth piece, if necessary. As already mentioned earlier there is a lease for separating the groups from one another and therefore after dyeing and untying it will be easy to take any 10 groups out of the 20 groups which are naturally similar for weaving one piece.

Each group will have 5 tie and dye figures on it at different places along the weft with reference to the example under consideration. Since we would have 50 figures, 10 groups of thread may be taken. If each group is tied and dyed for 10 figures along the weft, with ten groups there will be 100 figures on the fabric. Again, all the figures of one group may not be the same. For example, the figures may be one elephant and one horse alternating in order five times each. Each of the 10 groups will have similar figures. By reversing the weaving from one side of the loom to the other for a group, the order and direction of the figures in the group may be changed.

For warp tie and dye also a similar process is adopted. The full length warping is done in the open air using poles for separating groups or in peg warping

process. Sometimes for borders and for a small number of threads a peg warping frame is used. However, since the warp length for one fabric, say a saree, is 5.5 metres which will be difficult to tie in a frame in one full length, the same is folded once or twice and taken to a frame of half or quarter of the length respectively for tying. If a full-length frame is available, the entire length is taken for tying also. Tying in a frame of half the length is common. If tying is done on folded warp, extreme care is required to be taken to tie as close to the ends of the frame as possible, or else there is a possibility of having a portion of the warp remaining untied leaving a gap at the fold. This is particularly important if the border is warp tie and dye and body is weft tie and dye. Weavers are sometimes careless in tying folded warps. The grouping and sub-grouping are done at the preparation stage as in the case of weft preparation. If the warp is folded once for tying and dyeing the number of threads in sub-groups will be doubled. Sub-groups are leased for tying and dyeing.

Some weavers adopt direct methods of grouping to obtain tied and dyed weft yarn for a number of pieces at a time - as many as even 40 pieces. As many pieces, so many threads are taken from latais on which 4, 5, 6 threads are wound. For twenty-four pieces, for example, threads are taken from 4 laties on each of which 6 threads are wound. The length of each thread is what is required to cover the tie and dye design portion in each piece. These threads in groups of 24 are wound round two iron rods of the preparation frame (Janta) in layers one above the other as per the number of picks in the design. The rods are so fixed that the distance between the two is approximately the same width of the cloth for weft. When the entire length is finished being wound round the rods of the frame, tying of the groups is done as per the design. After the tying and dyeing are completed and the yarn is dry, each of the 24 threads is separated and wound on latais and then to pirns. The separation of each thread is cumbersome and very sharp outlines of figures can not be obtained. For tying and dyeing warp threads, particularly for borders, the process adopted is also same.

Coming to the tying process some introduction becomes necessary.

- 1) To develop a continuous outline of a design the relative portions of successive threads making the design should be close.
- 2) The smoothness of the outline depends upon how closely the relative portions of the successive threads making the design are placed end to end.
- 3) If there is no shift in the placement of relative portions of successive threads making the design end to end, the outline is an upright line for weft tie and dye figure (fig. 12) and a horizontal line for a warp tie and dye figure (fig. 13).
- 4) If there is no shift end to end of relative portions of a group of successive threads making the design followed by another such group with a marked shift between the groups, the outline becomes steppy (fig. 14).
- 5) If there is a shift in the relative portions of successive threads making the design end to end and the shift is exceedingly small and gradual, the outline of the design is smooth and oblique or curved (fig. 15). This however requires tying of each successive threads separately and also very close end to end tying which is laborious and time-taking.

The above mentioned aspects greatly influence the tying. Good craftsmen who desire to develop a sharp outline of natural motifs tie successive thread of a design in groups of 2 at a time with exceedingly small shift (diameter of one tying thread) end to end. This requires skill of hand and fingers. It is comparatively easier to tie for figures having steppy outline, as tying of successive threads may be in groups of 6, 8 and 12 of a design at a time and shift of about 0.16 cm. end to end for the next group.

The process adopted in Orissa :

In Bargarh - Sonepur area for preparing weft threads for separation, grouping and sub-grouping, frame with upright sticks or frame with separating cords is used. Warp preparation is done in open air with separating poles or on peg warping frames. Peg warping is popular in Bargarh - Sonepur area. In Nuapatna area direct method of grouping threads for tying and dyeing is used and open air preparation for warp is common. Tying of weft is done on a frame and full length is tied. For tying of warp it is doubled and tied on half length frame. Full length frame is used when available. Sometimes the warp is folded twice to enable tying on a short frame. 2 successive threads of a design are usually tied similarly in silk as well as in cotton. The designs are transferred to the warp or weft mentally from paper design by tying straight-away the sub-groups of warp and weft and no prior marking is done by charcoal powder or otherwise, to indicate the position of the figures of corresponding sub-groups of thread is done.

The tying is done by threads tightly wound around the sub-group of threads with one simple knot at the end, so that it can be untied easily. For tying longer spots some use kiya leaf wrapped around the portion, neatly cut and tied at the ends (fig. 16).

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The tying and dyeing sequences have been explained earlier. Not very long ago, probably about 30 years ago, vegetable dyes were used. As synthetic dyes and chemicals came to the market for varieties of colour, vegetable dyeing has gradually become extinct. Two weavers who have had the experience of vegetable dyeing in Nuapatna (Tigria) area, were using, as reported by them.

1. Kamala gundi (local name), ash water, alum and tamarind for fast bright yellow or bright orange-yellow colour.

Kamala gundi was boiled in water with ash water, alum and tamarind and then strained. The washed silk yarn was then dipped in the solution which gave fast yellow or fast orange-yellow shade.

2. Powdered lac, turmeric, tamarind and alum for fast red colour.

Powdered lac, soaked in water for a day was rubbed against pebbles to bring out the dye. The water was then strained and boiled with turmeric, tamarind and alum. The washed silk yarn was dipped in the solution which gave fast red or fast purplish-red shade.

3. Gunjuri munda (local name) and turmeric for green colour which was not fast.

4. Bilati manji (local name) which was probably manjista for red shade which was not fast.

Bilati manji, alum and ash water were boiled and the washed silk yarn was dipped in the solution when the orange-red shade was obtained.

5. Trifala (three types of myrobalans) for black colour.

The trifala, scrap iron and tin fillings were kept in sour rice bran for about one year and the black liquid was taken from time to time whenever it was required for dyeing yarn in black colour. The black coloured liquid was boiled and the yarn was dipped in it till the yarn was coloured black. After the yarn became satisfactorily black in colour it was taken out and thoroughly washed and dried.

Two weavers in Bargarh area who had had the experience of vegetable dyeing, were using, as reported by them.

1. Indigo for blue colour

2. Anchi gund (local name) for chocolate colour

Anchi gund was put in hot water which was brought upto the boiling point. The cotton yarn treated with soda ash and castor oil, scrubbed and washed, was dipped in the hot solution of Anchi gund and kept for one day and then washed. The process was repeated till the desired shade was obtained.

3. Lodha chal (bark of Lodha tree) for red colour.

The powder of the bark, soda ash and castor oil were mixed in water and the washed cotton yarn was dipped in it and the water was rubbed on to the yarn when red shade was obtained. For deeper shade, hot water was used. After dyeing, the yarn was thoroughly washed.

In Nuapatna area one clay pot used for vegetable dyeing was found to be still preserved for worship on certain occasions.

The process of synthetic dyeing is as used in handloom yarn dyeing and as prescribed by the dye makers. The dyeing of tied yarn is done in small pots. The dyeing of untied yarn is done in large pots. In institutions where large bulk of untied yarn is dyed cement vats are used. A very large institution even uses hydro-extractor for squeezing out water from the wet yarn. In Bargarh - Sonapur area the following dyes are commonly used for cotton -

1. Naphthol dyes are used for red, orange, yellow, chocolate and tobacco, all fast colours.
2. Vat dyes are used for blue, green, peacock green (yellow and green mixed), violet, grey, black, golden orange, brown, khaki, pink, magenta, yellow, olive green and brown.

A list made during the investigation of colours and chemicals used for obtaining the above mentioned colours in one weavers' co-operative society is given below by way of illustration.

<u>Naphthol dyed</u>	<u>Colour obtained</u>	<u>Dye used</u>	<u>Chemicals used</u>
	1. Red (special)	ASTR Naphthol, Fast Red TR Base	Sulphate of Alumina Sodium Nitrite Sodium Acetate Hydrochloric Acid Monopal soap Caustic Soda Common salt
	2. Red	A S Naphthol, A S B S Naphthol, Fast Scarlet R Base	As above
	3. Orange	A S Naphthol, Fast Orange GC Base, Scarlet RC Base	As above
	4. Yellow	A S Naphthol, ASG Naphthol, Fast Orange GR Base, Scarlet R Base	As above
	5. Chocolate	ASLB Naphthol, ASBO Naphthol, Fast Red B base	As above
	6. Tobacco	ASLB Naphthol, Fast Red B Base	As above
Vat dyeing	1a) Blue	Blue RSN	Caustic Soda Hydrosulphite Monopal soap Lisapol NXI
	b) Blue	Blue R S N, Blue BO	As above
	2a) Green	Green FFB,	As above
	b) Green	Green FFB, Olive Green B,	As above
	c) Green	Light Green B	As above

<u>Colour obtained</u>	<u>Dye used</u>	<u>Chemicals used</u>
3. Peacock green	Vat yellow GCN, Green FFB	As above
4. Sky	Blue BC	As above
5. Violet	Violet RR, Blue RNN/RSN	As above
6. Grey	Grey BC, Blue BC, Olive Green B	As above
7. Black	Vat Black BB	As above Bleaching powder
8. Golden Orange	Vat Gold Orange 3G, Orange RF/ RK	As in & above
9. Brown	Vat Brown R	As above
10. Khaki	Vat Khaki R	As above
11. Pink	Vat Pink R	As above
12. Magenta	Vat Magenta B	As above
13. Yellow	Vat yellow GCN	As above
14. Olive green	Vat Olive Green B, Green 2100	As above
15. Brown BR	Vat Brown BR	As above

Colours are mixed for various shades. For silk in Nuapatna (Tigria) area: Acid dyes are used which are reasonably fast, like blue. Vat dyes are used for other colours for fastness although dull in shine.

For cotton in Nuapatna (Tigria) area: Naphthol and vat colours are used as in Bargarh-Sonepur area.

Normally not more than 4/5 colours are used in tie and dye. Sometimes if a few short portions are required to be dyed, these portions are dyed by applying dye by brush instead of dipping the portions in dye pots to save time and labour. After the dyeing is finished and the threads in sub-groups are dry the sub-groups are untied allowing the threads to come back to their respective groups. The groups are then separated from each other for the sake of convenience and stocked. If it is warp tie and dye, all the groups are taken and spread out and after usual sizing by rice starch and drying, tied on the loom carefully adjusting the relative position of the threads and keeping tension as evenly as possible. If it is weft tie and dye, each group consisting of continuous tied and dyed thread is wound on to a latai and then on to pirns in order and using them in the same

order in shuttle in picking. Weaving is done invariably on pit looms, although one or two (who have frame looms) use frame loom. Picking of tie and dye weft is invariably by throw shuttle while for ground weave without any tie and dye weft, picking is done by fly shuttle. In picking tied and dyed weft, great care is taken to adjust each weft by hand after picking, so that each weft is correctly positioned in relation to the others in forming the design. For tie and dye warp, care is taken to see that the relative positions of threads, as explained before, are not disturbed and the threads are on even tension.

It will be observed that most of the tie and dye fabrics of Orissa with borders and pallavs have some woven designs. The motifs are mainly fish, rudraksha, danti, simple lines, etc. While the tie and dye designs are brought out by tying and dyeing the warp yarn, weft yarn or both, the woven designs are brought out by extra warp threads for the border and extra weft threads for butis in the body and butis and other motifs in pallav. The extra warp threads in the borders are operated by means of healds and treadles as for the main warp. For simple extra weft figuring in the pallav and for simple butis the healds for the body warp are operated in plain weaving lifting pattern for interlacement with extra weft threads. If the extra weft figuring in the pallav is of elaborate nature and the weave is not plain, the warp threads for the figure are operated by a second set of healds and treadles separate from the main healds and treadles, which are operated for the plain weaving only. Many weavers have adopted dobbies of 8, 16 and 24 shafts for the weaving of extra warp threads in the border.

Finishing of the fabrics involves only starching and tightly winding on a roller and when dry, folding into narrow size. Sometimes silk fabrics are folded after the loom stage without subjecting them through any other process.

The raw material, that is, cotton yarn and silk (mulberry) yarn are purchased in the hank form from the cotton yarn and silk yarn markets of Cuttack and Bargarh for cotton and Malda (Bengal) for silk. In Bargarh-Sonepur area counts 20s, 30s, 40s, 60s, 80s, 2/80s, 2/100s, 2/120s, 2/140s and 2/150s are used for weft cotton yarn and 20s, 30s, 40s, 60s, 80s, 2/80s, 2/100s, 2/120s, 2/140s, 2/150s are used for warp cotton yarn.

No distinction is made in twist of warp and weft yarn namely Z twist or S twist respectively. The same yarn is used for both warp and weft. Combed yarn is used for counts above 40s as far as possible. In Nuapatna (Tigria) area single cotton yarn only is used in both warp and weft. 16/18 and 20/22 denier silk, 2 fold, 4 fold or 6 fold are used for silk (mulberry) fabrics.

As mentioned before tie and dye silk (Tassar) fabrics like saree, scarf and stole, are also woven in Orissa, particularly in Nuapatna (Tigria) area. The raw material, that is tassar yarn, is not purchased from the market as in the case of cotton yarn and silk (mulberry) yarn. The weavers in their homes reel and spin tassar yarn from tassar cocoons which are purchased from the market or supplied by the master weavers or traders. It is, therefore, necessary to indicate generally the process of producing tassar yarn from cocoons.

Tassar cocoons are boiled normally 2 kahans (3200 pieces) with 250 grms. of soda ash and 36/40 litres of water for about 4 hours to make the cocoons soft so that yarn can be reeled off the cocoons. This is a skilled job. After boiling and thorough washing, reeling of yarn from 5 or 6 cocoons together is done by females, particularly teenage girls, slight twist being applied on their thighs.

Though reeling machines have come into use, the hand reeled yarn is preferred by the manufacturers, as it gives fuller appearance (better cover) and better feel to the fabric. The cocoons consist of three layers, the top namely fuzz, middle namely reelable yarn and bottom namely waste (nachha). The fuzz is made loose by hand and spun by Takli into yarn. Waste yarn is also spun from the bottom layers of the silk content of cocoons called nachha. There are various grades of waste yarn under different names. Even the peduncles are used for yarn. The waste yarns of various grades are katia ghicha from nachha of 1st quality, katia yarn from nachha of 2nd quality, rudhi from kuti (last remnant stuff) and kala (black) rudhi from peduncles. The cut cocoons (the cocoons from which moths have come out), from which reeled yarn cannot be taken out, are used for pulling off strands called ghicha (much coarser than reeled yarn) which is given a small twist on the thigh or on a mud pot. When cut cocoons are not available for producing ghicha yarn, even uncut cocoons are used if ghicha yarn is in great demand.

Tie and dye is mostly done on reeled tassar yarn which compares in thickness with 16/18 or 20/22 denier silk (mulberry) yarn, but tie and dye has also been successfully experimented on coarser yarn like ghicha and rudhi. The tying, dyeing and other processes for tassar yarn is the same as for mulberry silk. An improved technique of sizing single thread is used by some tassar weavers.

The tie and dye technique is also employed in Barpali of Bargarh sub-division in producing cotton table cloths, teapoy cloths, table runner, table mats, table napkins, handkerchiefs, bolster covers, cushion covers, skirt material and hangings and in mulberry silk and tassar silk scarf, stole and head scarf. Bed covers, a sample of which has already been analysed, are woven in various places in Sambalpur and Bolangir districts.

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Process adopted in Andhra Pradesh :

The essential technology of producing tie and dye fabrics is the same as that being adopted in Orissa. The main feature is grouping warp threads and/or weft threads and sub-grouping them for tie and dye by leasing. In Andhra Pradesh semi-circular frames with pegs are used for preparation of weft and leasing as well as for tying. The semi circular frames are convenient for preparation of warp and weft and particularly for leasing. While all cotton warp and some silk warp are prepared at home on pegs or on poles in the street, ready-made silk warp is obtained mostly from Bangalore and only tying and dyeing is done indigenously. The entire warp for two sarees is tied after folding only once to avoid blank spaces at folding and consequently not more than two pieces are woven in one warp, that is, tying of warp is done on usual saree length on a rectangular frame. Rubber strips are also used for tying besides threads. Tying is done on 6 picks to 6 picks or more instead of 2 picks to 2 picks as in Orissa. Consequently six or more similarly tied and dyed picks are put consecutively in forming the design part by part. Besides, the figures are mostly transferred from paper graphs by marking on the yarn the points of tying exactly as in the paper graph. The outline in the paper graph is steppy. The figures, therefore, appear steppy and it becomes natural to adopt diamond motifs which are very common.

The cotton yarn used are of 20s, 40s, 60s, 80s, 100s and 120s count. Higher than 100s count in cotton is not commonly used. Silk of 20/22 and 16/18 deniers is used. Acid and direct dyes are very often used. The colours are not fast to washing. Dry cleaning is recommended. There is an oily odour in the rumals of Chirala due most probably to Alizarine red dyeing.

Although fly shuttle pit looms are used in weaving, the weft is adjusted after each pick to place it in proper position in relation to the previous weft and contour of the design. The stretch of warp on the loom is also slightly longer than usual.

A brief account of the process adopted in Patan may be useful for comparison. Shri A.N. Gulati in his monograph "The Patolu of Gujarat" has given his study of designs and technique of patolu manufacture in Patan. At present only four looms are working on patolu. The technique of patolu manufacture has not undergone any change nor is there any marked change in the layout and pattern of designs. The designs are developed on silk tie and dye warp and weft forming double ikats. The principle of preparation of warp and weft is the same as explained earlier. The warp is prepared on pegs and is folded once and grouped and sub-grouped by leasing cords for tying. The weft is prepared on frame (Fig. 10) having cords for separating groups and sub-groups. Both warp and weft are tied on tying frames. Design is marked on a graph paper. In developing a design the shifting of the relative position of dyed portion of warp and weft is effected after eight warp threads or eight picks. Consequently eight consecutive warp threads and eight consecutive picks are tied and dyed similarly and therefore sub-grouped accordingly for one repeat. The number of such threads in a sub-group depends as usual on the number of repeats. Some times shifting of relative position of dyed portions of warp and weft is effected after 10 or 12 warp threads and 10 or 12 picks. This results in a steppy outline of design. The natural motifs like flower, birds and animals are of stylised geometric steppy outline. The shifting places as indicated in the design in graph paper are marked on the yarn on the tying frame by vertical lines by strings smeared with charcoal powder. Tying is done exclusively by threads. Sometimes strips of old cloth are wrapped over the tied portions if the portions are long, to make the portions more impermeable to dye solutions. Dyeing of tied yarn is done in small spots, each sub-group being dyed separately. Single shades are applied one after another, and mixed shades are developed by their combinations. As usual the lighter shades are dyed first and then the deeper ones. The process of dyeing is the same as for dyeing silk yarn for handloom weaving. After the tied and dyed yarn is properly dried, the yarn is untied, releasing each yarn in the sub-groups to take its own place in the respective groups and repeats. The tied and dyed warp yarn is spread out very tightly, sized with thin rice starch water and when dry, taken to the loom. The tied and dyed weft yarn is wound on the latai and then to short (about 7 cms.) lead pencil-thick bamboo or cane stick (tilli). This tilli is placed inside the hollow of a bamboo piece, about 15 to 16 cms. long and 2.5 cms. in outer diameter, which is used as the shuttle. A piece of cotton wool is sometimes placed at the mouth of the hollow bamboo piece and the yarn from the tilli inside is drawn over the cotton wool for tensioning the weft yarn.

The warp yarn is very carefully spread on the loom which is extremely simple. The warp yarn is spread after passing through healds and tied on to the weavers beam which is a square beam. The other end of the warp is wound round a rod keeping the warp in tension by strings tied to nails fixed on wall. The front beam rests on two wooden or brick pillars on either side fixed on the floor. One pillar

is higher than the other so that the beam rests inclined on the two pillars. Two persons are engaged in weaving the cloth; one sits on the lower side of the beam and the other stands on the higher side of the beam. The standing weaver operates the equipment for shedding, and picking is done by both, one from each side. Unlike other handlooms which have treadles or dobbies or jacquards for operation of healds or separating the warp threads for forming a shed for the shuttle to pass, the shed is formed by operating a rod by hand. After separation of threads forming bottom line and upper line of the shed it is kept open by a flat wooden piece (usually made of rosewood). The shuttle mentioned above is thrown from one side to the other by hand. After the weft passes through the shed, it is adjusted by both the weavers, one at each end, to place it accurately in the position relative to the previous pick, and to the warp threads to conform the outline and body of the design in respective colours. The weft in this adjusted position is beaten by the flat wooden piece mentioned above, brought forward by both the weavers by hand with force. There is no sley for beating. Thus the entire operation of weaving is done by hand. After weaving in this manner pick by pick for about 15 cms. finer adjustments of warp threads and weft threads in the woven portion is made by hand using approximately 15 cms. long iron pointers to pull threads.

Thus great care is taken to adjust both warp and weft threads to bring respective dyed portions of each in interlacement with the other for as correct as possible a design as made out in the graph. The weaving is therefore slow and a piece of saree of 5.49 metres in length and 137.16 cms. in width takes about a month for weaving only. Preparation and tie and dye processes for two pieces at a time take about one month. Thus about six pieces are woven in a year.

The design and motifs are geometrical, in steppy outline, forming diamonds, rectangles, squares etc. Floral motif of flower plant-in-pot, animal and bird, motifs of elephant, parrot etc. are stylised and steppy in outline. The design and layout cover the entire body and the motifs except in the border are small. Practically no large space is kept without a design. Colours used are mostly red, green, blue, yellow, maroon and white. Previously these colours were dull and were obtained from vegetable dyes. With the use of synthetic dyes brighter shades are obtained. Synthetic dyes were already in use prior to 1951. There is, however, very little change in the layout of design and motifs. Occasionally, as per the demand of the customer, slight change in the layout and colour is made. The designs of pieces described by A. N. Gulati (39) and quality particulars of the collection of the Calico Museum of Textiles and the nine designs described by G. U. Patel and Gulati are continuing with slight change here and there as required by the customer. Besides sarees rumals are also produced in similar designs. Saree borders having elephant, parrot and flower plant-in-pot motifs have been introduced recently.

The silk of 20/22 Denier used, is imported from Japan. In both warp and weft 8 fold threads are used. The silk is degummed and bleached with soap solution. It is claimed that 1 kg. of silk when degummed and bleached loses weight by about 50%. In one piece of patolu of 5.49 metres in length and 137.16 cms. in width approximately 1 kg. of silk yarn is used and the net weight of the piece is about 450 gms. In dyeing, mostly vat dyes are used because of their fastness. Acid colours, although bright, are not used, as they are not so fast. For one piece of patolu of 5.49 metres in length and 137.16 cms. in width a sum of Rs. 1700 to Rs. 2500 is demanded at present at the level of weavers. For rimal of 60.96 cms. by 60.96 cms. a sum of Rs. 200 is demanded at the level of weavers. Taking the time for preparation and weaving and the number of persons engaged

which is usually 3 the income per person comes to Rs. 250/- to Rs. 450/- per month. 3.60 metres of saree border costs Rs. 450/- at the level of the producer.

A COMPARISON OF IKAT TECHNIQUE AND FABRICS

It is useful to compare the layout and motifs of tie and dye (ikat) fabrics of various parts of India and South East Asia particularly Indonesia.

The stripes of different widths along the warp predominantly found in old cotton fabrics of Bargarh and Sonapur area along with woven stripes may have some superficial resemblance with the typical stripes of old Indonesian ikat textiles, but motifs and the width of the pallavs in transverse stripes do not bear any comparison with similar Indonesian textiles. The steppy figures in Indonesian fabrics and very long 'tumpals' do not find any place in the pallav of fabrics of Orissa. The solid effect of white in the floral motifs of Indonesian fabrics is avoided in Orissa fabrics. The coloured motifs in Orissa fabrics are developed with delicate white outline.

The silk weft ikat of Sumatra is also likewise different from the silk ikats of Nuapatna (Tigria) area in layout, motifs and colour scheme. While the motifs of Sumatra are small and geometrical, the motifs of Nuapatna are bold and natural and the stripes are wider. The tumpals (Kumbha) of Nuapatna run in zig-zag manner and are small, while the animal and floral coloured motifs are developed in fine white outline. White seems to dominate the colour effect of Sumatra fabrics. The silk double ikat fabrics in Basle Ethnographical Museum of Indian origin (probably 19th century) also indicate solid white colour effect, although to a lesser degree than that of Indonesian fabrics. It seems that this is due to the market demand of Sumatra which preferred white to other shades.

As mentioned before, weaving of warp ikats although easy, is difficult to keep the tension on the warp threads even and to prevent dislocation of relative position of threads forming a figure. Once on the loom, the threads are not easily readjustable. The outline of figures is not bold. Besides, setting the threads per unit space is limited to the capacity of the reed. In weft ikat not only the relative position of thread can be adjusted pick by pick but number of weft threads per unit space can be increased to a great extent depending upon the ability of the weaver, giving a firm cloth and a bold figure of sharp outline. However, there is a limitation in developing figures by weft tie and dye only. The scope for developing figures by double ikat (both warp and weft tied and dyed) is great, but here again it is difficult to keep the outline of the figures sharp as explained before in warp tie and dye. Besides, such a process calls for much longer time and labour for production of designs in natural form and sharp outline. Geometrical figures are comparatively simpler in double ikat, particularly when the outline is not required to be sharp. Except the outline the colour of the figure is bright due to the interlacement of threads of similar colour in warp and weft. The technique as adopted in Orissa enables the weavers to have figures in natural form. Very often the main border is in warp tie and dye and the kumbha and birds forming part of the border, the body and pallav are in weft tie and dye. Double ikat is also adopted in Orissa but to a lesser extent. In Andhra Pradesh and in Patan double ikats are more common. In Andhra Pradesh the designs are larger and the stepping bolder than those at Patan. The figures in both the places are steppy in outline and are geometrical in form.

In Chirala efforts are being made to impart their figures natural forms. The production is, however, limited to rumals in double ikats. The rumals have distinct features in that the fabrics are invariably in red, pink, black and white colours and the red and pink colours run on to the black and white portions which is not seen in rumals and sarees of Pochampalli, Patan and Orissa manufactures. Besides, the rumals of Chirala have a strong oily smell most probably due to alizarine dyeing. In present productions pink is more often used than red and the oily smell is also not strong.

Unlike in Andhra Pradesh where pit looms are used, all the motions of weaving in Patan are done by hand on a simple loom above the floor and the beating of the weft is also done by hand by means of a flat wooden piece. Besides adjusting every pick, the warp threads are also adjusted after weaving every few centimetres. Such adjustment of warp threads is not done in Andhra Pradesh. The figures are, therefore, very clear in Patan although they are steppy in outline and are small.

Comparing the three, namely warp tie and dye, weft tie and dye and warp and weft tie and dye and considering the point of developing fairly bold natural figures of sharp outline and the point of complicated technique for tying and dyeing and the economy of production, the weft tie and dye technique forming-natural figures may be considered the most suitable. The stripe effect is likely to be present in all ikat fabrics in varying degrees, because of the very technique of tying and dyeing separately for developing the designs on various parts of the body.

SOCIO-ECONOMIC CONDITION OF WEAVERS

Orissa - The weaver community as a whole is poor. However, a highly skilled tie and dye weaver earns as much as Rs. 300/- per month. His wife and young children also help in the preparation of the yarn. The minimum wage earned by an ordinary tie and dye weaver is about Rs. 75/- per month. For many weavers tie and dye weaving is a seasonal occupation for they engage themselves in farm activities. Bargarh area is the largest area of cotton tie and dye weavers. As many as in 36 villages in Bargarh and Sonepur area tie and dye cotton fabrics are woven. There are about 5500 to 6000 tie and dye weavers in Orissa actively engaged in tie and dye weaving. Most of them have their own houses and looms. Many weavers including some tie and dye weavers have changed over to manual labour which gives them better wages but some new ones have learnt tie and dye weaving and thus added to the number of tie and dye weavers.

Although there are a number of co-operative societies of tie and dye weavers which help production and also act as selling outlets the master weavers are still very powerful and operate as individuals in the rural areas. The co-operative societies and master weavers supply yarn to the weavers and collect the fabrics on payment of wages. Some individual weavers buy their own yarn from the market, weave their fabrics and sell them. Very often they sell to the master weavers. The cost of a cotton tie and dye saree varies from Rs. 20 to Rs. 120 depending upon the quality while that for a silk tie and dye saree is from Rs. 140 to Rs. 220 at the level of the co-operative society.

The tie and dye fabrics, particularly silk and cotton sarees are in demand in Delhi, Calcutta and Bombay markets. The fabrics sell in these places at about 40% higher price. No serious attempt appears to have been made for the export of tie and dye fabrics. Only Barpali Arts and Crafts Handloom Co-operative Society had developed a small export to individual customers outside India, particularly in the U.S.A. by parcel post but this experiment is now stopped for lack of market study.

Andhra Pradesh - There are about five villages near about and including Pochampalli and Chirala town where tie and dye fabric is woven in Andhra Pradesh. While the industry is growing in Pochampalli area, in Chirala it is almost dead. Chirala is famous for its rumals. The export of the rumals to Muslim countries, particularly to Pakistan has almost stopped and, therefore, the industry is sadly handicapped as it does not find any outlet for its products. As mentioned earlier there are now about 10 weavers in Chirala who are at times engaged in weaving rumals. Unfortunately, the weavers have not taken to any diversification of production. The main reason for the same, as reported by the Master weaver, Gunti Bhasker Rao and others, is the very low wages which do not sustain them and is much lower than what is obtainable by weaving simple fabrics in the area. The price of each rumal is about Rs.8/- . A young weaver gets Rs.1.50 as wage per rumal. He can weave sixteen pieces in about 8 or 10 days. On an average a weaver can weave two rumals a day, the wage being only Rs.3/- per day and, therefore, he cannot sustain himself in these days of economic scarcity. There is no local consumer support for use of such rumals. Paradoxically, the tie and dye industry in Pochampalli area is growing. The weavers have taken to weaving sarees both cotton and silk but more of silk than cotton. This industry is sustained by the sophisticated markets in Delhi, Bombay, Calcutta and Madras. The bright colours adopted by the weavers are in fashion today. The local population, as mentioned earlier has not, however taken to use the tie and dye sarees on any appreciable extent. There are about 1,800 weavers in Pochampalli village and nearly 400 weavers weave tie and dye. In other villages near about 400 weavers were reported to be weaving tie and dye on cotton and silk.

Most of the weavers depend upon the profession and are landless. A silk weaver gets about Rs.65/- as wages for weaving one 5.5 metres saree. Tying and dyeing wages are given separately. Ordinary tying and dyeing work fetches Rs.24/- for two sarees. The income of a silk weaver weaving two sarees a month comes to Rs.130/- per month if he is engaged full time. For cotton weaving at Pochampalli the income is much less and is on an average Rs.90/- per month. The weavers are hard working. The cost of a cotton saree is about Rs.25 to Rs.60 depending upon the quality up to 80s count while the cost of a silk saree varies from Rs.160 to Rs.240.

Although co-operative societies have been functioning in which weavers joined in large numbers, master weavers still dominate the scene. The co-operative societies and the master weavers give yarn to the weavers. The weavers get the yarn tied and dyed and then weave the cloth as per order of the co-operative society or the master weaver, who take the cloth and settle wages. Very often a part of the wages is received by the weavers in advance.

The fact that there are at present only three weavers' families engaged in weaving patolu speaks of the situation of ikat weaving in Patan. The patolu weavers have in general taken to other professions or are weaving other fabrics. Those who are at present weaving patolu demands Rs. 1700 to Rs. 2500 for a saree of 5.49 metres length and 136.16 cms. in width. The price of a rumal of 60.96 by 60.96 cms. is Rs. 200/- and that for a saree border of 3.60 metres length is Rs. 450/-. Taking into consideration the time for preparation and weaving and the number of persons engaged which is usually three, the income per person comes to Rs. 250 to Rs. 450 per month. These weavers have better living conditions than their counterparts in other parts of the country. Their children are being educated. Some have even gone to the Universities. They have fairly good houses to live in and they clothe themselves reasonably well. The reason for the present situation appears to be that weaving of patolu involves a long time, and a hard and monotonous labour and the remuneration is not commensurate in comparison with that of other professions. Besides, the cost of fabrics is so high that only the rich can afford to buy.



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Orissa :

1. The Meher weavers who weave tie and dye in Bargarh and Sonepur Zones Orissa most probably migrated from Garh Sambar in North India near Delhi.
2. The technique of tie and dye was, if at all, in a primitive stage when the Mehers started weaving tie and dye in Orissa.
3. The technique of tie and dye on cotton yarn developed in Bargarh - Sonepur area due to local support and lack of easy accessibility of the area to the traders of machine-manufactured cloth.
4. The technique in Bargarh-Sonepur area has developed indigenously and is at a very high level of craftsmanship.
5. Tie and dye on silk (Mulberry, Tassar) although within the capability of the weavers of Bargarh-Sonepur area, is not very common.
6. Tie and dye technique on silk was in existence in Nuapatna (Tigria) area in the 18th Century. The developed technique and other evidences suggest that the technique was existing in the area even a few centuries earlier, may be in the 12th or 13th century, though its specific mention is found only in 1719 A.D. which shows its presence earlier to that date at the village Kenduli from where the Gaudia Patra weavers of Nuapatna seem to have come to this present centre.
7. Tie and dye technique on cotton in existence in Nuapatna (Tigria) area started in the 20th century.
8. The technique in Nuapatna area has reached a high level of development and craftsmanship. In weaving of silk fabrics sometimes cotton yarn is used in border warp ikat and in pallav, weft ikat.
9. In both the areas the layout (field) is in stripe form, but the stripes of border, body and pallav are full of rhythm, one flowing into the other.
10. The layout (field) at present is undergoing a change, attempting to avoid the stripe effect particularly in the body, but the effect has not yet been completely eliminated.
11. The technique produces motifs in their natural curve form and geometrical motifs are very rarely used.
12. The technique which is complicated had been with the weavers and had not been recorded. An attempt has been made to record the same in this monograph.
13. Generally men tie and dye and weave in Orissa. In some houses women also participate in dyeing and weaving. In the production of Tassar fabrics women take a very active part in reeling and spinning of Tassar yarn.

14. The weavers who are very highly skilled can earn an income commensurate with other skilled workers. Ordinary tie and dye weavers do not earn a living wage.
15. Although there are co-operative societies of weavers, the master weavers are still functioning in large numbers. There are both landless and land owning weavers. The latter engage themselves in agriculture in seasons.

Andhra Pradesh :

1. According to evidences available ikat (tie and dye) weaving in Andhra Pradesh has developed during 20th century. In the primitive form it probably existed in 19th century.
2. Tie and dye weaving is done in the town of Chirala and Pochampalli and five villages round about.
3. Tie and dye weaving in Chirala is dyeing due to lack of outlet for the rumals and wage rate being very low. The red and pink colours run on to black and white colour. Besides, the rumals have a strong smell of oil probably due to alizarine dyeing. The red and pink colours rub off probably due to the dyeing process not being followed properly. No diversification of production in the technique has been done.
4. Tie and dye weaving in Pochampalli area has grown in recent years. Silk sarees in tie and dye are more common than cotton.
5. The tie and dye fabrics do not seem to be very popular among the local population.
6. The technique of tie and dye weaving is almost the same as in Orissa and Gujarat. The designs produced are however steppy in outline as in Gujarat. Semi-circular frames are used for preparation of weft and warp and for leasing of threads. Fly shuttle picking is used while adjusting every weft. An attempt is being made to obtain curved outline of figures as in Orissa. It is quite probable that it will not be long before, designs similar to those of Orissa will be produced.
7. Steppy outlined motifs of the ikat fabrics bring the ikat technique in Andhra Pradesh and Gujarat very close and evidences suggest migration of weavers either way.
8. There has been a great change in the use of colours while layout is practically as before.
9. An attempt is being made to introduce animal and fish motifs. Diamond figures and geometrical motifs are very common.
10. As in Patan, female members of weaver's family at Chirala also participate in weaving in the tie and dye technique.
11. Weavers depend upon the profession and are mostly landless.

12. Although co-operative societies are functioning the master weavers are still dominant in the scene.
13. Markets for the fabrics are found mostly in Delhi, Bombay, Calcutta and Madras.

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37. ibid, page 55
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39. A.N. Gulati, op.cit page 15

TYPES OF TIE AND DYE FABRICS PRODUCED IN ORISSA AND ANDHRA PRADESH (USES HAVE BEEN INDICATED WHERE NECESSARY)

ORISSA

Saree (cotton)
Saree (silk and tassar)
Khandua (silk)
(Odni/Udni)
Bed cover (cotton)
Bolster cover (cotton)
Cushion cover (cotton)
Table cloth (cotton)
Teapoy cloth (cotton)
Tray cloth (cotton)
Table mats (cotton)
Table napkin (cotton)
Scarf (cotton & silk)
Stole (cotton & silk)
Door screen (cotton)
Window screen (cotton)
Skirt material (cotton)
Than (cotton & silk)

Head scarf (Tassar)
Rumals (cotton)

ANDHRA PRADESH

Saree (cotton)
Saree (silk)

Chowka/Rumal (cotton)

Lungi (cotton)

USE

Ladies wearing apparel
Ladies wearing apparel
Ladies upper wearing apparel

Dress or furnishing material in length

Handkerchief
Table cloth, Fisherman's lower garment or head dress
Gents lower apparel

NAMES OF PLACES IN ORISSA IN WHICH TIE & DYE WEAVING IS DONE IN APPRECIABLE SCALE:

Jhilminda
Kadobahal
Remenda
Kumbhari
Chichinda
Mahalakanta
Bheden
Jamdol
Banhar
Singhpali
Tope
Lurupali
Bhatli
Kushanpuri

Nuapali
Budapali
Bandhpali
Barahaguda
Bardol
Kardola
Huma
Sonepur
Baidyanath
Nimna
Jagannathpali
Dasrajpur
Subalaya
Nuapali

Kamalpur
Chadaipank
Icchapur
Manpur
Binka
Fulsuntho
Matikhai
Durgapali
Butupalli
Baunsuni
Muktanagar
Nuapatna
Baramba
Olasingh

NAMES OF PLACES IN ANDHRA PRADESH HAVING TIE AND DYE WEAVERS

1. Pochampalli
2. Koyalgudem
3. Chowtuppala
4. Siripuram
5. Bhuvanagiri
6. Chuigottala
7. Galtuppala
8. Chirala
9. Jandrapeta (no longer woven)
10. Vetapalam (no longer woven)
11. Pandillapalli (no longer woven)
12. Perala (no longer woven)

NAMES OF EQUIPMENTS USED IN ORISSA AND ANDHRA PRADESH

<u>Orissa</u>	<u>Andhra Pradesh</u>	<u>English explanation</u>
Manga	Magma	Loom
Hatha	Palka	Sley
Latai, Ashara	Ratanam, Pante	Small equipment on which yarn is wound
Jantur	Ashu	Warping frame
Uphurna	Chitkipita	Weft preparation frame
Katarbadi	Chemudubala	Rod for keeping accurate length of weft in the weft tieing and preparation frame
Kamra	Jarna	Tie & dye frame
Baw	Chitkipita	
Pania, Jat	Achu	Heald
Kanda	Paini, Phani	Reed
Dungi, Maku	Washulu	Small pirn
Nurie, Phinga Maku	Nadi	Fly shuttle
	Kami	Throw shuttle

INSTITUTIONS AND INDIVIDUALS CONTACTED IN ORISSA

1. All India Fabric Marketing Co-operative Society - Manufacturing Centre,	village Nuapatna
2. Sri Baja Behra	Village Kakarudrapur
3. Sri Bhagaban Meher	Son of Late Sri Gangadhar Meher, Weaver Poet, Barpali
4. Sri Bhabani Pradhan	Barpali Meher arts and crafts handloom weavers' co-operative society ltd., Barpali
5. Sri Bholanath De	Weaver, Nabadwip Dham, West Bengal
6. Sri Benode Chandra Meher	Grand son of late Sri Gangadhar Meher, Weaver and Poet of Barpali
7. Sri Banchanidhi Subuddhi	Son of Late Arjun Subuddhi, Village Nuapatna
8. Sri B. Jena	Assistant director (Textiles), Government of Orissa, Khurda
9. Sri Bibhuti Bhusan Kanungo	Artist, Cuttack
10. Sri Dasarathi Dutta	Weaver, Nuapatna
11. Sri Dasarathi Prusti	Weaver and dyer, Village Nuapatna
12. Sri Duryodhan Meher	Weaver, Village Jhilminda
13. Sri Gangadhar Tosh	Weaver and dyer, Village Muktanagar
14. Sri Golak Meher	Retired weaving Mistri, Sonapur
15. Sri Haradhan Meher	Weaver and dyer, village Tope
16. Sri H.D. Naik	Chemist, Deputy director, Weavers' Service Centre, All India handloom board, Calcutta
17. Sri Iswar Meher	Weaver, village Tope, Bargarh sub-division
18. Sri Jagannath Kotual	Weaver, village Nuapatna
19. Sri Jagabandhu Meher	Weaver, village Jhilminda
20. Sri Jagadish Chandra Mohanty	All India fabric marketing co-operative society, village Nuapatna
21. Sri Jagannath Ash	Weaver and dyer, village Nuapatna
22. Sri J.N. Supakar	Assistant director (designs), Weavers Service Centre, All India handloom board, Varanasi
23. Sri Kakkal Mani Patro	Weaver, Sonapur
24. Sri Kabichandra Kali Charan Pattanaik	Cuttack
25. Sri Kartika Meher	Weaver, village Jhilminda
26. Sri K.C. Pattanaik	Assistant director (Textiles), Cuttack
27. Sri K.C. Das	Historian, Head Master, D.M. School, Bhubaneswar
28. Sri Krutartha Acharya	Sambalpuri bastralaya handloom weavers' co-operative society ltd., Bargarh
29. Sri Kunj Behra Meher	Weaver, Barpali
30. Sri Lala Meher	Sambalpur
31. Sri Lakshana Patra	Weaver, village Nuapatna
32. Sri Lakshana Das Mohapatra	Panda, Puri Temple, Puri
33. Sri Lingaraj Meher	Weaver, Sonapur Town

34. Sri Loknath Mohapatra

35. Sri Madhia Meher

36. Sri Mandar Maharana

37. Sri Minaketan Meher

38. Sri Mohan Meher

39. Sri Manimohan Radi

40. Sri Muralidhar Tali

41. Sri M.S. Das

42. Sri M.N. Das

43. Muktanagar weavers' co-operative society

44. Nuapatna weavers' co-operative society No.I

45. Nuapatna weavers' co-operative society No.II

46. Sri N.K. Basu

47. Orissa tassar silk utpadaka sangha

48. Ramjee weavers' co-operative society

49. Sri Rajendra Meher

50. Sambalpuri bastralay handloom weavers' co-operative society,

51. Sri Sadasiv Ratha Sharma

52. Sri Satyabadi Das, Secretary, Orissa Tassar silk utpadak sangh,

53. Sri Shyam Kumar Meher

54. Sri Shyama Chaudhary

55. Sri S.K. Lalla

56. State tassar co-operative society (Export wing),

57. Sri Sudarsan Tâdau

58. Tassar manufacturing factory of Sri Gangadhar Tosh,

59. Tribal research bureau,

60. Tribal orientation centre,

Weaving mistry, Collective weaving centre and pattern making factory, Palla, Khurda

Weaver, village Jhilminda

Village Kenduli

Weaver, village Jhilminda

Expert Tie & Dye weaver, Weavers' service centre, All India handloom board, Calcutta

Weaver, Nabadwip Dham

Artist, Deputy director in charge of weavers' service centre, All India handloom board, Calcutta

Research scholar, Regional college, Bhubaneswar

Professor and Head of department of history, Utkal University, Bhubaneswar

Muktanagar, (near Nuapatna),

District Cuttack

village Nuapatna

village Nuapatna

Textile technologist, Assistant director, Weavers' service centre, All India handloom board, Calcutta

village, Nuapatna

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Sonepur

Weaver and dyer, village Tope
Bargarh

Puri Temple, Puri
village Nuapatna

Weaver, village Tope
Weaver and dyer, village Nuapatna
Assistant director (textiles), Govern-
ment of Orissa, Bargarh
Bhubaneswar

Puri Temple, Puri
village Muktanagar

Bhubaneswar
Bhubaneswar

INSTITUTIONS AND INDIVIDUALS CONTACTED IN ANDHRA PRADESH

1. Chirala weavers co-operative society, Chirala
2. D. Laxminarayana, President, Pochampalli weavers' co-operative society, Pochampalli
3. Deputy director in charge of Lapakshi handicraft emporium, Hyderabad
4. Director, Salarjang museum, Hyderabad
5. Deputy Director, Directorate of handlooms, Hyderabad
6. Sri D.S. Rao, All India fabric marketing co-operative society, Hyderabad
7. Gunti Nagayya, Weaver, Vetapalam
8. Gunti Narasimhan, Weaver, Vetapalam
9. Gunti Bhaskar Rao, Master weaver and weaver, Chirala
10. Sri Jagdish Mittal, Hyderabad
11. Lakshmayya, Manager, Pochampalli weavers' co-operative society, Pochampalli
12. Lapakshi handicraft emporium, Government of Andhra Pradesh, Hyderabad
13. Mattika shair (near Charminar), Hyderabad
14. Office of the Census commissioner, Hyderabad
15. Panyam Chardramouli, Weaver, Jandrapeta
16. Public garden - art gallery, Hyderabad
17. Ravuri Akkala Sithamma, Weaver, Chirala
18. Salarjang museum, Hyderabad
19. Shreesailam, Secretary, Pochampalli weavers' co-operative society
20. Sithasetti Narasayya, Weaver, Pochampalli



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Alizarine dye	It is a madder dye contained in the root of <i>Rubia Cordifolia</i> or <i>Rubia Khasiana</i> available throughout the hilly parts of north-west Himalayas at an altitude of 800 ft., as well as in Khasia and Naga hills of India. It is used in dyeing of cotton and wool and is called Majeeth. It gives different shades on different mordants. With the production of synthetic Alizarine the vegetable Alizarine has practically gone out of use. On cotton the following shades are principally obtained.												
	<table> <tr> <th>Mordant</th><th>Shades</th></tr> <tr> <td>Chromium</td><td>Dull bluish - red to crimson</td></tr> <tr> <td>Aluminium</td><td>Pink to scarlet</td></tr> <tr> <td>Iron</td><td>Maroon to reddish - brown</td></tr> <tr> <td>Copper</td><td>Yellow - Brown</td></tr> <tr> <td>Tin</td><td>Reddish - orange</td></tr> </table>	Mordant	Shades	Chromium	Dull bluish - red to crimson	Aluminium	Pink to scarlet	Iron	Maroon to reddish - brown	Copper	Yellow - Brown	Tin	Reddish - orange
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Aluminium	Pink to scarlet												
Iron	Maroon to reddish - brown												
Copper	Yellow - Brown												
Tin	Reddish - orange												
Anchigund	Powder of root and bark of Indian Mulberry (<i>Morinda Citrifolia</i>) also known as Al, Ach, Ak, Aich, early cultivated throughout India. It is also available in another species (<i>Morinda tinctoria</i>). It is used in dyeing red shades.												
Asia Rumal	Square tie and dye fabric woven in Chirala in Andhra Pradesh.												
Ath-Kothari	Eight-blocks pattern (design used in tie and dye saree in Nuapatna of district Cuttack in Orissa.												
Bandha	Tie and dye of yarn in Orissa, India.												
Bandhni	Tie and dye of fabric in Rajasthan and many other places in India.												
Buddavasi	Tie and dye technique in Andhra Pradesh, India.												
Chhamuha	Six pallavs (Chhamuha saree in Orissa, India has pallav-like cross-borders in six places along the length).												
Chhaphulia (saree)	Saree having six warpway woven floral lines in the border in Orissa, India.												
Chitki	Tie and dye technique in Andhra Pradesh, India.												
Chindi	Silk fabric in ikat technique in Malayan Peninsula.												
Dali	Creeper pattern used in Orissa, India.												
Danti	Tooth-like pattern used in Orissa, India.												
Deuli	Small tie and dye figure in the shape of a mound used in Orissa, India.												

Duiphulia (saree)	Saree having two warpway woven floral lines in the border in Orissa, India.
Dopatta	A fabric having two designed parts (used in Andhra Pradesh and other parts of India), also known as dupatta.
Ek-muha (saree)	Saree with pallav (cross border, usually patterned) at one end in Orissa, India.
Gajabandha	Tie and dye with elephant motif.
Ghicha	Coarse yarn spun from pierced tassar cocoons.
Hol	Tie and dye technique in Indonesia.
Ikat	Tie & dye.
Indigo	A vegetable dye from Indigofera Tinctoria, Indigofera Anil, Indigofera Sumatrana etc. used for dyeing cotton and silk in blue and yellowish to bluish green when topped with turmeric on pomegranate rind.
Janani	Long saree (7.32 metres approximately) in Andhra Pradesh.
Kamalagundi	Vegetable dye from Kamela (Mallotus Phillipinesis) found in India along the foot of the Himalayas up to the altitude of 5000 ft. and in Bengal, Uttar Pradesh, Madras and Punjab. It is also known as Kabila, Kamud, Kamala and Kavila. It is an orange red powder (gundi) used for dyeing of wool and silk in bright yellow to orange-red shades.
Khandua	Odni or upper dress of female, covering the head and shoulder, used in Orissa, India.
Kothari	Block pattern used in tie and dye fabrics in Orissa, India.
Kumbha	Small and large pointed triangle-shaped figure with or without serrated sides.
Kunjiphula	A flower with curly outline.
Kunjiphulabedi	A platform-shaped motif having a Kunjiphula in the centre.
Lodha	Vegetable dye from the bark and leaves of Lodh-tree (Symplocos racemosa) found in abundance on the plains and the lower hills of Bengal and Assam in India. It is used as yellow dye as well as auxilliary in conjunction with other dyes for cotton and silk goods. It dyes red with Manjeet or Al on cotton and with other dyes like lac, sappan wood etc. on silk.
Lungi	Fabric commonly used as lower garment of male.

Mangikat	To bind, knot or wind round (Malayan word).
Manjista	Majeeth (see Alizarine).
Mardan	Turban (The word, Mardan, is used in Andhra Pradesh, India).
Muktajhari	Design in tie and dye having motifs of pearls spread all over, used in Orissa, India.
Nabagunjara	A figure (used in tie and dye fabrics in Orissa, India), composed of limbs of nine (naba) living things, namely, legs of elephant, paws of tiger, hand of man, head of cock, neck of peacock, body of snake (for tail), face of parrot, mane of lion and body of ox.
Nachha	Tassar silk waste.
Na-kothari	Nine-blocks pattern (see Ath-kothari).
Nakshtrabhusana	Pattern, decorated with star motifs used in Orissa, India.
Nakshtramala	Pattern, decorated with large number of star motifs used in Orissa, India.
Padmatola	Pattern with lotus motifs used in Orissa, India.
Pagdu-bandhu	Tie and dye technique in Andhra Pradesh, India.
Pallav	The cross border (usually patterned) end of a saree.
Rumal	Square fabric commonly used as head dress produced in Andhra Pradesh, India.
Trifala	Myrobalans (Terminalia chebula, Terminalia baleric and Terminalia Arjuna).

Chirala	21, 22, 23, 52, 57 58, 59, 60, 68, 90, 93, 94, 97.	Gitagobinda	20, 21, 30.
Chitki	15.	Gonda	16.
Chowka	21, 22, 50, 52, 59, 60, 68.	Grierson, George	See George Grierson
Chowkady	65.	Guin	19.
Champat Singh	20.	Gujarat	13, 14, 15, 17, 21, 23, 68, 69, 90, 95, 97.
Chungudiadali	46.	Gulati	14, 90, 91.
Costa Meher	16, 17.	Gunj.	61.
Cuttack	15, 18, 88.	Gunjurimunda	85.
		Guru	19.
Dali	32, 36, 37, 38, 48, 50.	Gunti Bhaskar Rao	21, 22, 94.
Danti	21, 26, 27, 39, 47, 52, 64, 66, 67, 88.	Hindu	21.
Das	19.	H.N. Randle	15.
Dasphulia	23, 25, 26.	Hol	13.
Deb, Ramai	See Ramai Deb.	Howda	42.
Delhi	16, 17, 18, 94, 96, 98.	Hyderabad	13, 22, 54.
Deogiri	15, 16.	Ikat	13, 14, 15, 16, 18, 19, 20, 21, 22, 23, 69, 90, 92, 93, 95, 96, 97.
Deula Karanas	20.	India	13, 15, 16.
Deuli	17, 18.	Indian	14, 92.
Dev, Ramchandra	See Ramchandra Dev	Indonesia	13, 17, 21, 92.
Devang	15, 18, 21.	Jagannath (God)	20, 21, 30, 46.
Devnagari	21.	Jagannath Kotual	19.
Dhamsa	16.	Jagdish Mittal	See Mittal
Dhamantari	16.	Jalna	15, 16.
Dipavali	49.	Jananis	22.
Domuha	23, 25, 26, 39.	Japan	13.
Dopatta	54.	Janta	83.
Dinkanol	20.	Jari	53, 54, 62, 63, 64, 65, 66.
Dravidian	21.	Java	26.
Duiphulia	26.	Jayadeb	20, 21.
Dupatties	22.	Jharsuguda	18.
Durate Barbosa	23.	Jhilminda	16, 17.
		Village	
G.U. Patel	See Patel G.U.	Jyotirisvara	15, 18, 19, 21.
Gaja	15, 21.	Kakarudrapur	20.
Gajabandha	15, 19, 20, 21.	Kala (black)	89.
(Gajavandha)		Kalahandi	18.
Gajalaxmi	38.	Kalanga	18.
Gangadhar Meher	16, 17.	Kalpataru	33.
Ganthiadali	47.	Kamlagundi	84.
Gardsambar	17, 96.	Karmakad	23.
Gaudia Patra	15, 16, 19, 20, 21, 96.		
George VI	30.		
George Grierson	18.		
Ghagra	17, 18.		
Ghicha	89.		

Kanchidhoti	19.	Malayasia	22.
Kangula	23, 24, 25, 32, 34, 37, 38, 41, 42, 67.	Malayan	13.
Karabby	63.	Mandvi	22.
Kenduli	20, 21, 96.	Mangalghatak	40.
Katia	89.	Mangala-ghat	44.
Kaudi	32, 36, 37, 38, 44, 45, 50, 52, 67.	Mamgikat	13.
Katiaghicha	89.	Mainpuri	17.
Kesavalu,	See Pennmukhi	Mardans	22.
Pennmukhi	Kesavalu	Markanda	17.
Khandua	21, 28, 29, 39, 43, 52, 67, 68.	Mashru	13.
Kiya	84.	Masulipatam	23.
Kothari	30, 45.	Mathamani	34.
Kotual	19.	Maithili	15.
Kotual, Jagannath	See Jagannath Kotual	Mayamriga	29.
Kotual, Panchu	See Panchu Kotual	Meher	16, 17, 96.
Koya Teega	61, 62.	Meher, Benod- chandra	See Benodchandra Meher
Krutartha Acharya	17.	Meher, Gangadhar	See Gangadhar Meher
Kuli	16.	Meher,	See Jagabandhu Meher
Kumarpala	15.	Jagabandhu	
Kumbakonam	13.	Meher Kabi	17.
Kumbha	21, 25, 26, 27, 28, 30, 38, 42, 44, 45, 46, 50, 51, 67, 92, 93.	Mehta, R.N.	See R.N. Mehta
Kundu	19.	Mexico	13.
Kunjiphula	49.	Mittal	23.
Kunjiphulabedi	48.	Moghuls	16.
Kushavadra	20.	Motte, Thomas	See Thomas Motte.
Kuti	89.	Motichandra	18, 19.
Labanyabati	36.	Muktajhari	28, 43.
Lakshanpur	17.	Muktanagar	52.
Latai	83, 88, 90.	Mysore	13.
Latin America	13.	Nabadwipadham	19.
Lingaraj Meher	17.	Nabagunjara	21, 29, 38, 46, 52, 67, 68.
Lodhachal	85.	Nachha	89.
Lungi	68.	Nag	19.
Madala Panji	20.	Naga (serpant)	21.
Madhya Pradesh	15, 18.	Naha	19.
Madras	15, 21, 22, 68, 94, 98.	Na-kothari	44, 45.
Magarmuha	29.	Nakshatra	27.
Mahanadi	18.	Nakshatra- bhusana	27, 43.
Maharaja	17.	Nakshatramala	27.
Maharashtra	15.	Nana	19.
Maha Sabha	16.	Narasimham,	See Ravuri Akkala
Malacca	23.	Ravuri Akkala	Narasimham
Malda	88.	Narasaiyya,	See Sithasetti
Mallish	23.	Sithasetti	Narasaiyya
		Near East	13.
		Nilu paka batani	55.
		Nuapatna	14, 15, 19, 20, 21, 27, 28, 29, 39, 43,

Nuapatna	44, 45, 46, 47, 48, 49, 50, 51, 67, 84, 85, 87, 88, 92, 96.	Prithviraj	16.
		Punjab	13.
		Pupul Jayakar	16, 23.
		Puri	20, 21, 30.
Odni	28.		
Orissa	13, 14, 15, 16, 17, 18, 19, 20, 21, 69, 84, 88, 89, 90, 92, 93, 96, 97.	Raghab Misra	17.
		Raipur	16.
		Rajasthan	16, 17.
		Rajput	17.
Oriya	18.	Ramdeva	15.
		Ram Chandra	20.
Padmasali	15, 21, 23.	Dev.	
Pagdubandhu	15, 56.	Ramai Deb.	16, 17.
Padmatola	32.	Randle, H.N.	See H.N. Randle
Pal	19.	Ratanpur	17.
Pakistan	22, 94.	Ravuri Akkala	22.
Pakachekram	54.	Narasimham	
Laider		Ravuri Akkala	22.
Pallav	17, 28, 23, 24, 25, 26, 27, 28, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 61, 62, 63, 64, 65, 66, 67, 88, 92, 93, 96.	Sithamma	
		Rekha	35.
		Risley	19.
		R. N. Mehta =	18, 19, 20.
		Rouffaer	13.
		Rudruksha	31, 33, 34, 35, 36, 44, 45, 46, 49, 51, 52, 88.
		Rudhi	89.
Panchu Kotual	19.	Rumal	21, 22, 23, 52, 54, 55, 56, 57, 58, 59, 60, 68, 90, 91, 92, 93, 94, 95, 97.
Pandit	19.		
Pan Patola	65.		
Panyaru- chandramouli	22.		
Paramanick	19.	Sadasiva Ratha	21, 20
Parida	19.	Sharma	
Patel, G.U.	91.	Sadha	26, 30.
Patna	See Patnagarh.	Saktapar	18, 23, 25, 31, 36, 37, 40.
Patan	13, 15, 16, 90, 93, 95, 97.	Salvi	15, 16.
Pataneshwari	16.	Samaleswari	16.
Patnagarh	16, 17.	Sambalpur*	17.
Patola	15, 23, 69.	Sambalpur	15, 16, 17, 18, 21, 89.
Patolu	13, 14, 69, 90, 92, 95.	Sambhar Lake	15.
Patra	16, 19.	Sapadlaksha	15.
Peddapadgu	55.	Sarga	20.
Pegu	23.	Saurashtra	15, 16.
Pennmukhi	22.	Sena	19.
Kesavalu		Sharma, Sada- siva Ratha	See Sadasiva Ratha Sharma
Persia	13, 18.	Sheo Butt	20.
Persian	16.	Shiva	21.
Pirala	22.	Sila	19.
Phetas	20, 30.	Singha	19.
Pochampalli	21, 22, 23, 54, 55, 56, 61, 62, 63, 64, 65, 68, 69, 94, 97.	Singh, Champat	See Champat Singh

* bastralaya handloom weavers' co-operative society

Sithasetti	22.	Vishva Karma	16.
Narsaiyya		West Bengal	19.
Sithamma, Ravuri	See Ravuri Akkala	Ziauddin Barani	15.
Akkala	Sithamma		
Sonepur	17, 18, 23, 25, 26, 31, 40, 41, 42, 67, 68, 84, 85, 87, 88, 92, 93, 96.		
South East Asia	13, 92.		
Sreekhetra	20.		
Sitambha	46.		
Subhadra	20, 21.		
Subuddhi, Arjun	See Arjun Subuddhi		
Sultan-Ala-ud-din	27.		
Sumatra	92.		
Sundergarh	16, 18.		
Tabelu burra	62.		
Tanjore	131.		
Than	32, 33, 41.		
Thomas Motte	20.		
Takli	89.		
Tanbel burra	56.		
Tapaswini	33.		
Tapichindes	15.		
Tarabali	28, 43, 52.		
Telia	21, 22, 52, 57, 58, 59, 60, 68.		
Telugu	21.		
Tigria	15, 20, 39, 43, 67, 84, 87, 88, 92, 96.		
Tilli	91.		
Titlagarh	18.		
Tjindai	13.		
Tjinde	13.		
Tosh	19.		
Trichinoppoly	13.		
Tumpal	92.		
United State of America	13, 94.		
University	95.		
Varanasi	13.		
Varnaratnakara	15, 19.		
Venkish	23.		
Ventapallam	13.		
Vichitra	15.		
Vichitrapar	15, 18, 31, 37, 40, 41, 42, 43.		
Vichitrapuri	15, 25.		
Vichitrangada	15.		
Vijaynagar	21.		
Vishnu	21.		



Plate 1 Cotton Dashphulia Saktapar domuha saree, Bargarh-Sonepur area Early 20th century. No. 2267

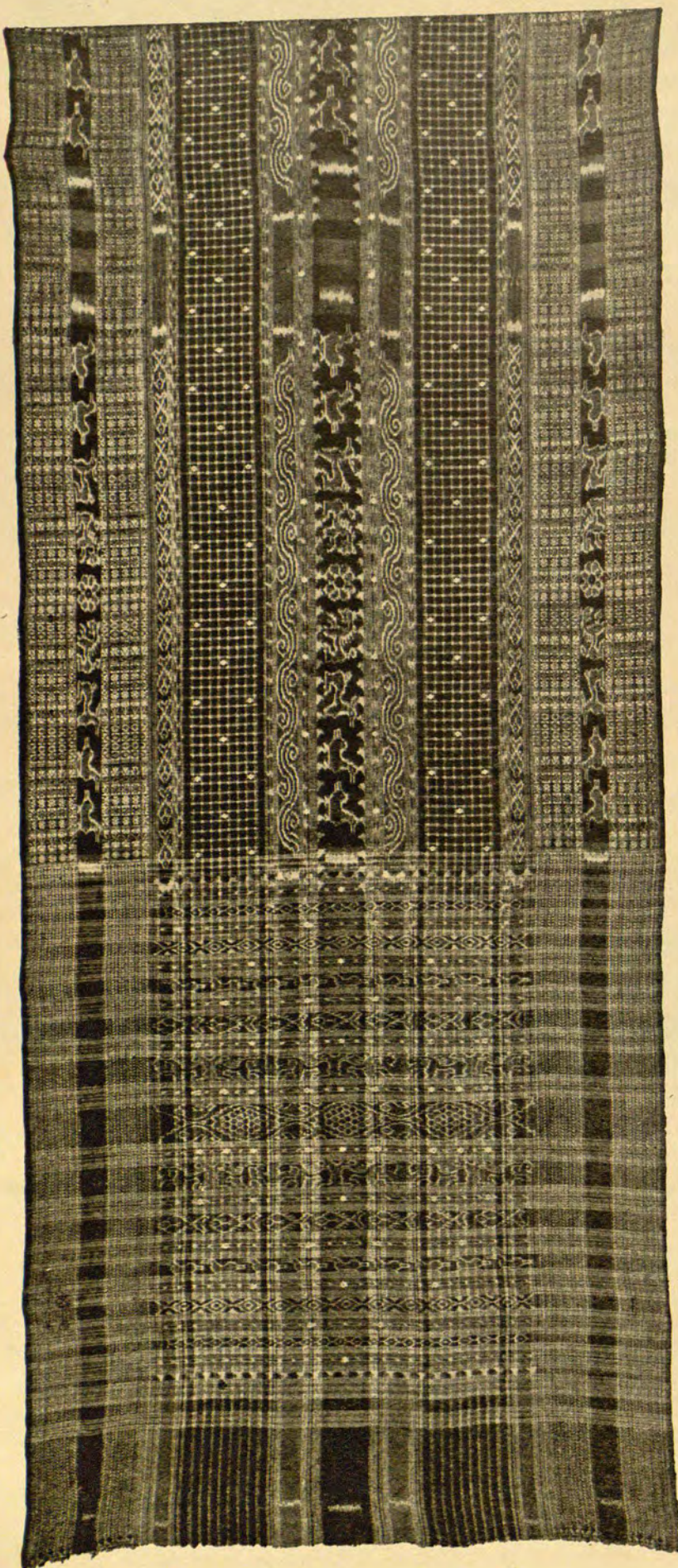
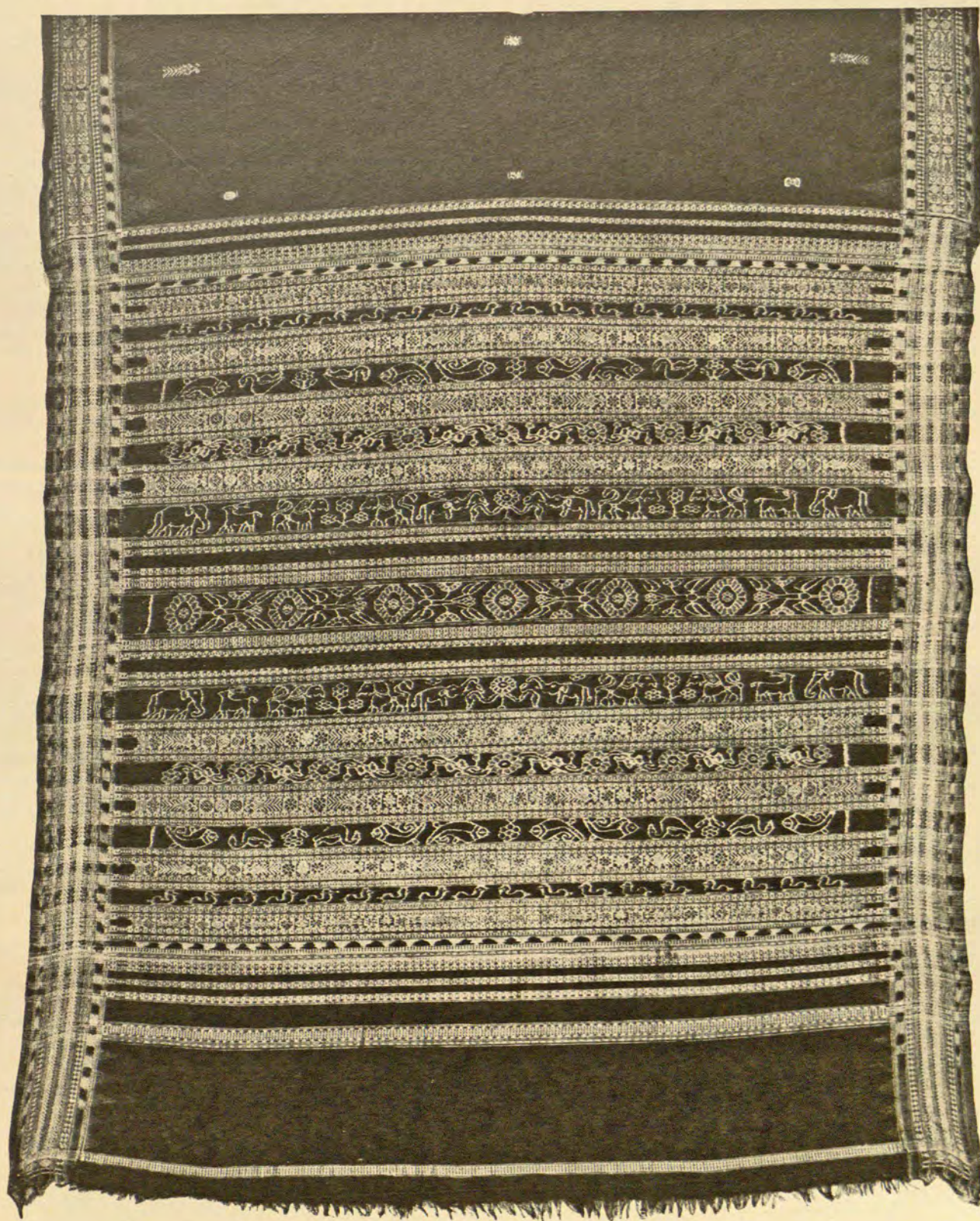


Plate 2
Cotton Dashphulia Bichitrapar
domuha saree, Bargarh-Sonepur
area Early 20th century. No. 2226

Plate 3 : Cotton Butta kumbha domuha saree. Bargarh-Sonepur area Early 20th century. No. 2229

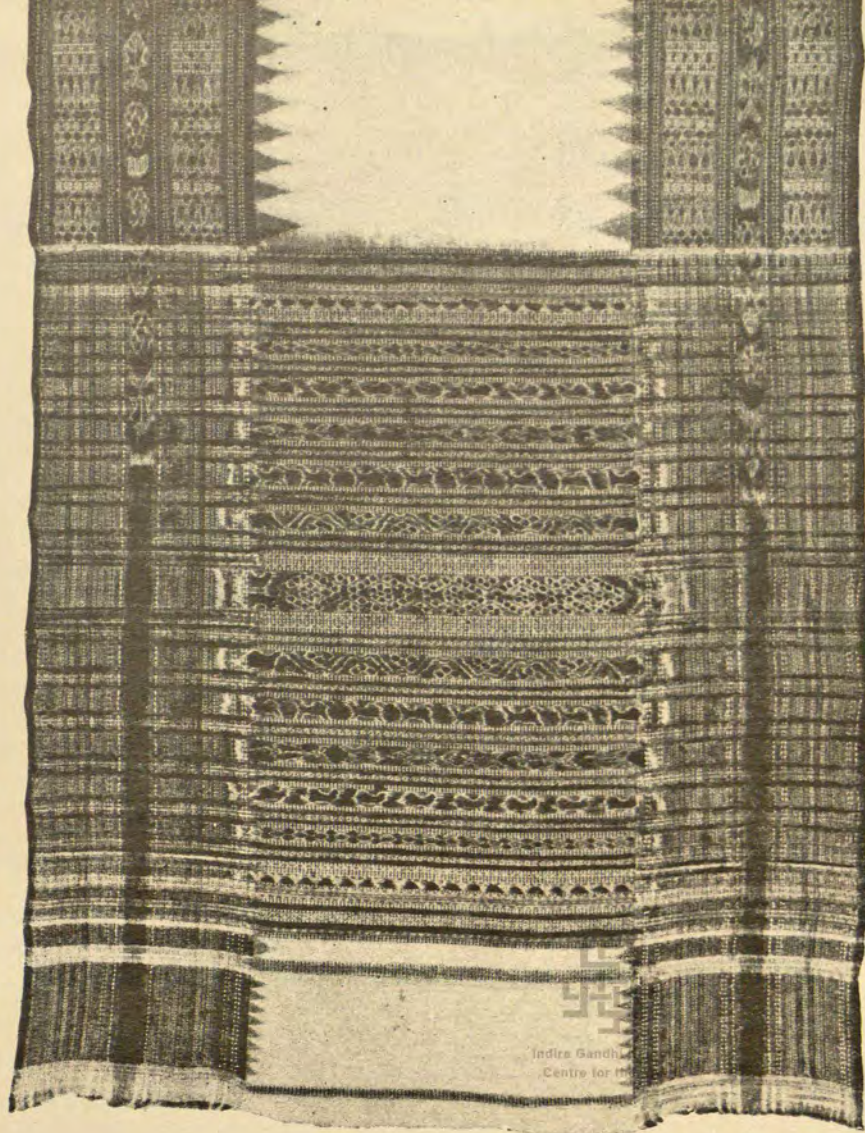




◁ Plate 4
Cotton Chhaphulia check butta domuha
saree, Bargarh-Sonepur area
Early 20th century. No. 2266



Plate 5 ▷
Cotton Sadha bandha domuha
saree, Bargarh-Sonepur area.
Early 20th century. No. 2232



◁ Plate 6
Cotton Dasphulia kumbha
domuha saree.
Bargarh-Sonepur area
Early 20th century. No. 2228

Plate 7
Cotton Duiphulia domuha
saree
Ca. 1900 A. D. No. 2233

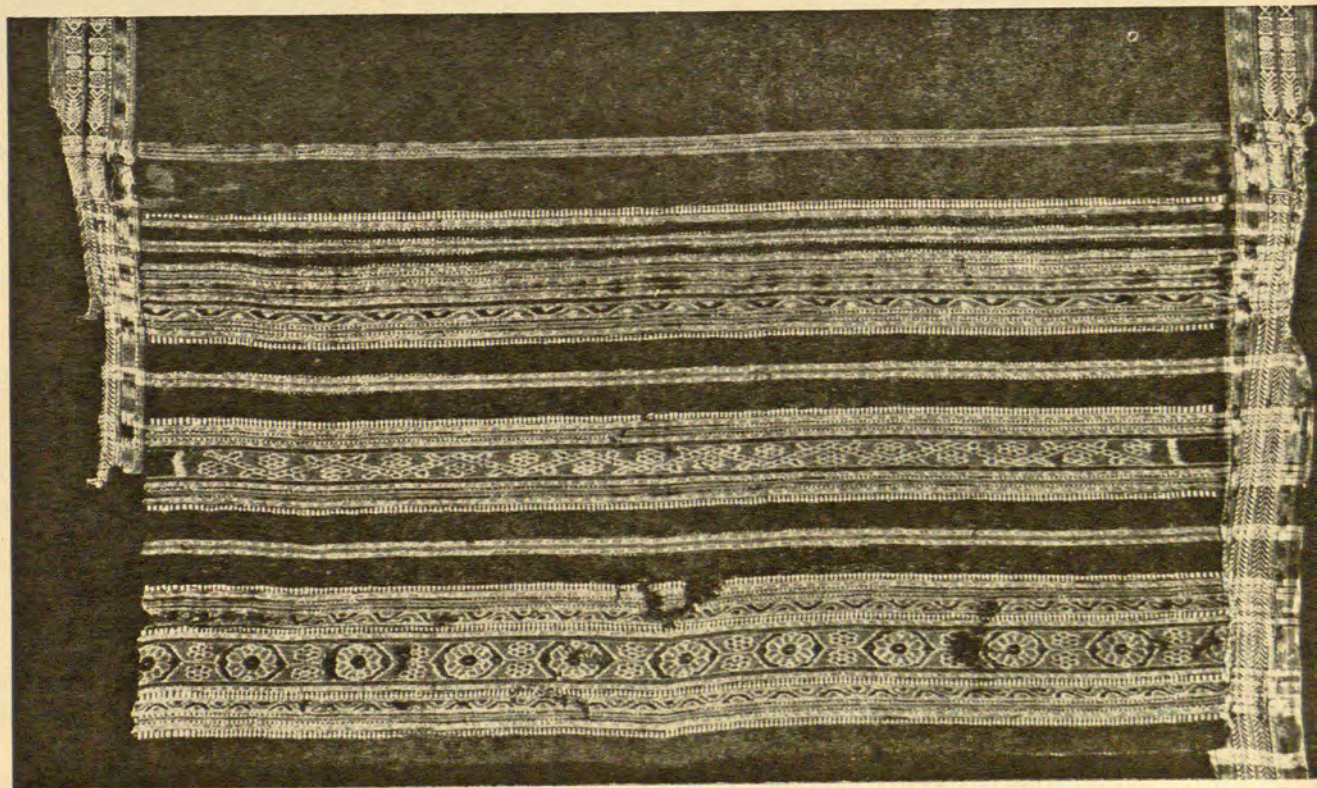




Plate 8 △



Plate 8
Cotton Baraphulia domuha saree, Bargarh-
Sonepur area. Early 20th century. No. 2234.
Also detail of the Pallav.

Plate 9 ▷
Cotton Dasphulia danti domuha saree, Bargarh-
Sonepur area. Early 20th century. No. 2230





◁ Plate 10
Silk Nakshatra bhusana saree,
Nuapatna area
Ca. 1900 A. D. No. 2271,

Plate 11
Silk Nakshatramala saree,
Nuapatna area
Ca. 1900 A.D. No. 2272

Plate 12 ▷
Silk Tarabali Saree,
Nuapatna area
Ca. 1900 A.D. No. 2269

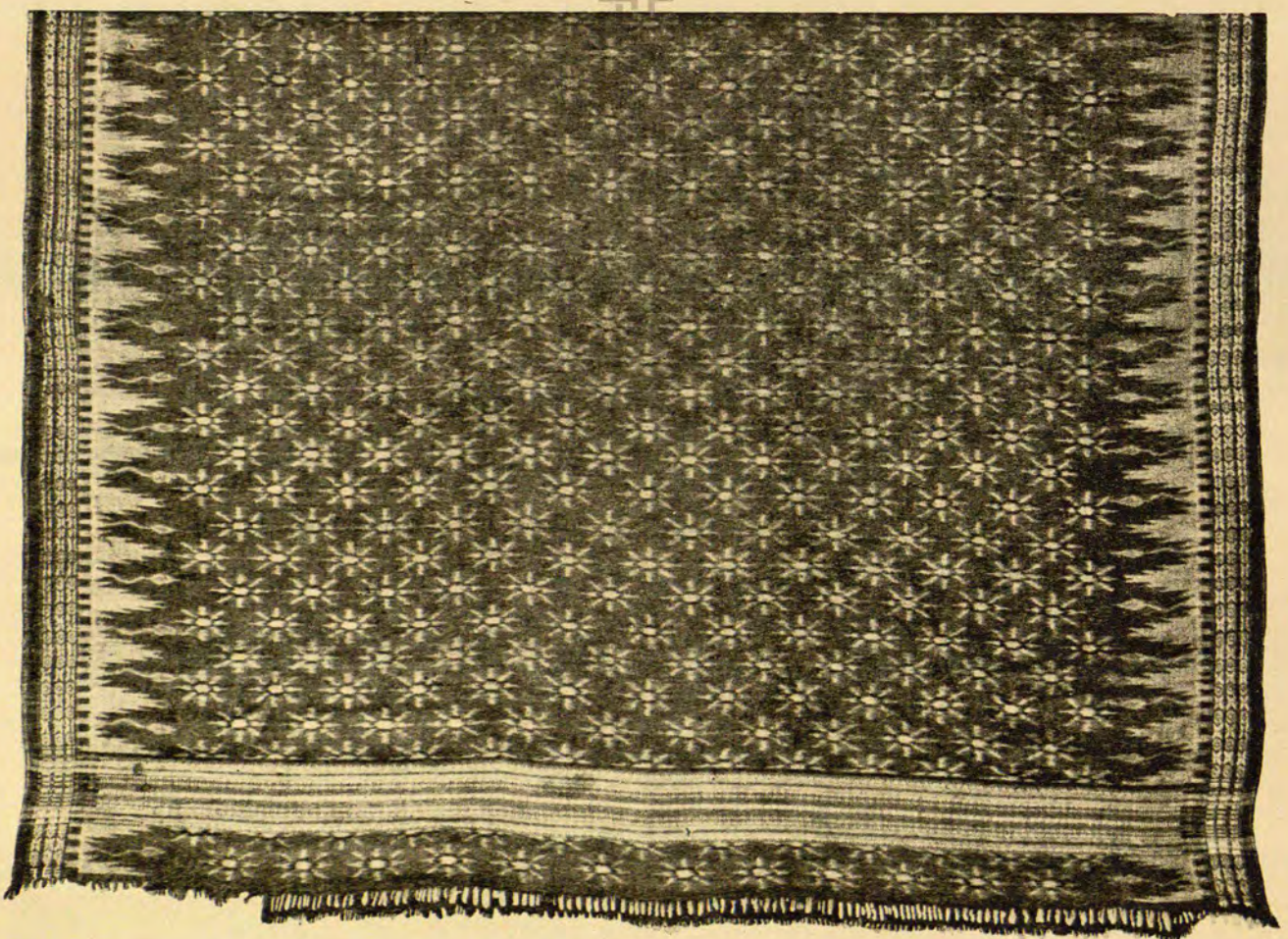
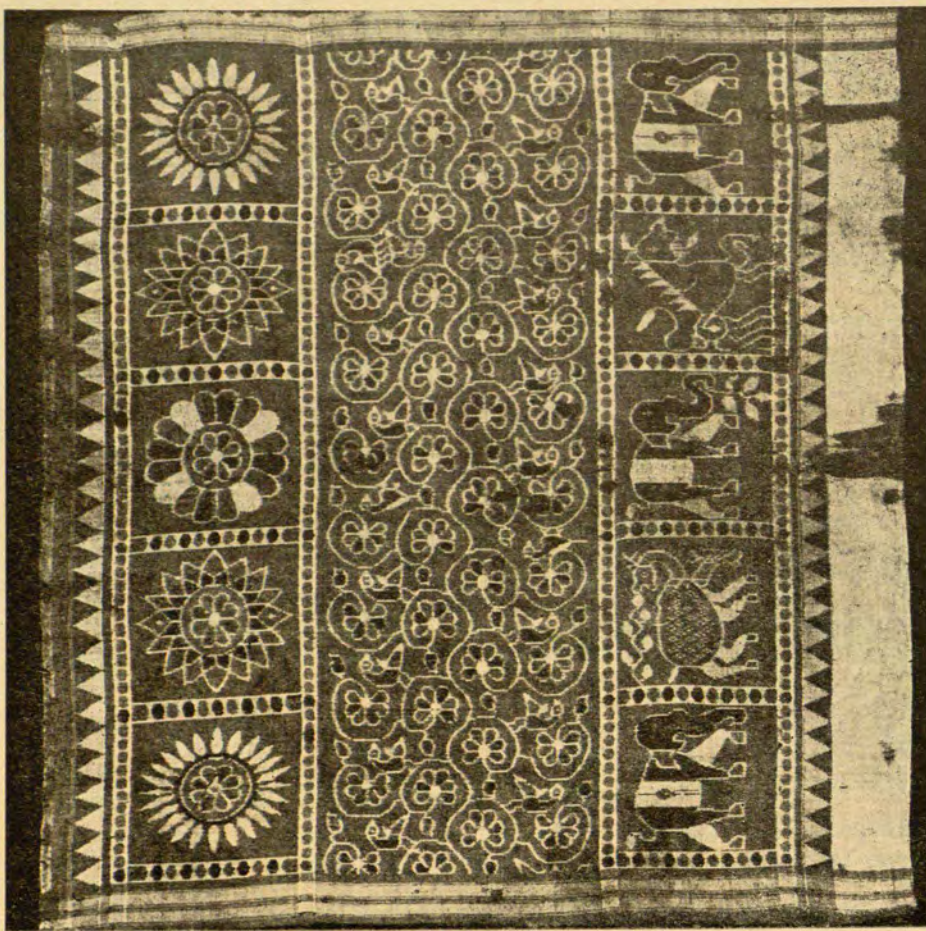


Plate 11





◁ Plate 13
Silk Mukтажhari khandua
pattern sample.
Nuapatna area
Late 19th Century. No. 2281.

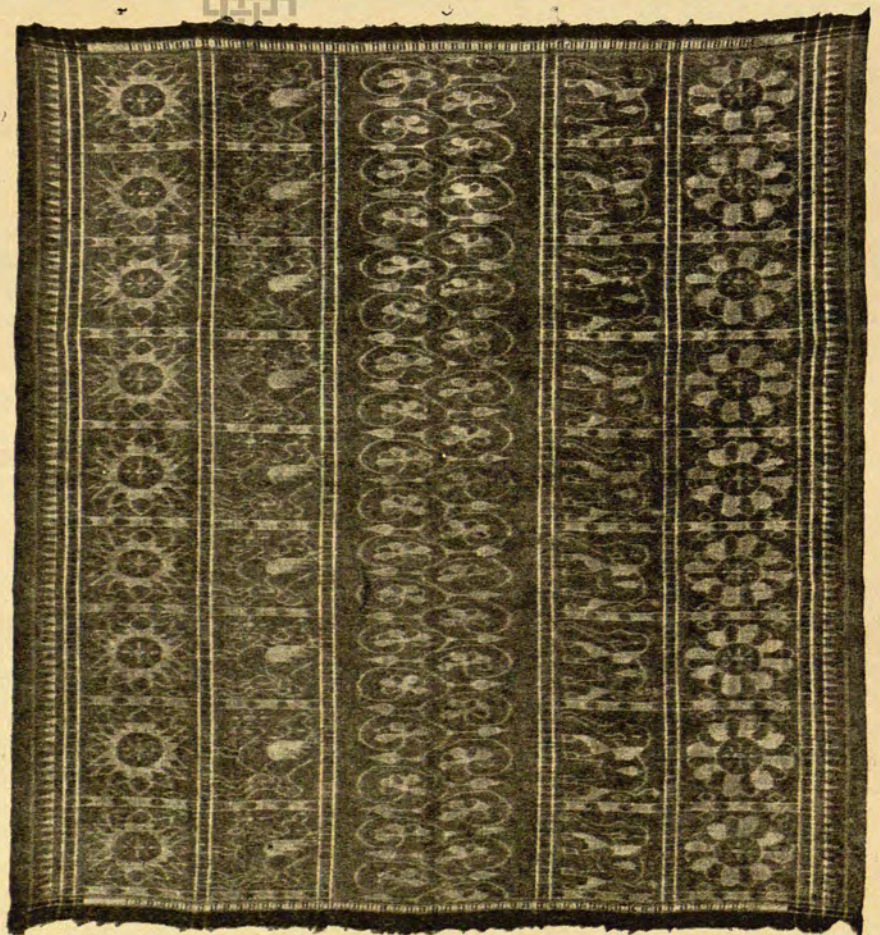


Plate 14 ▷
Silk Mukтажhari khandua
pattern sample,
Nuapatna area
Ca. 1900 A. D. No. 2277

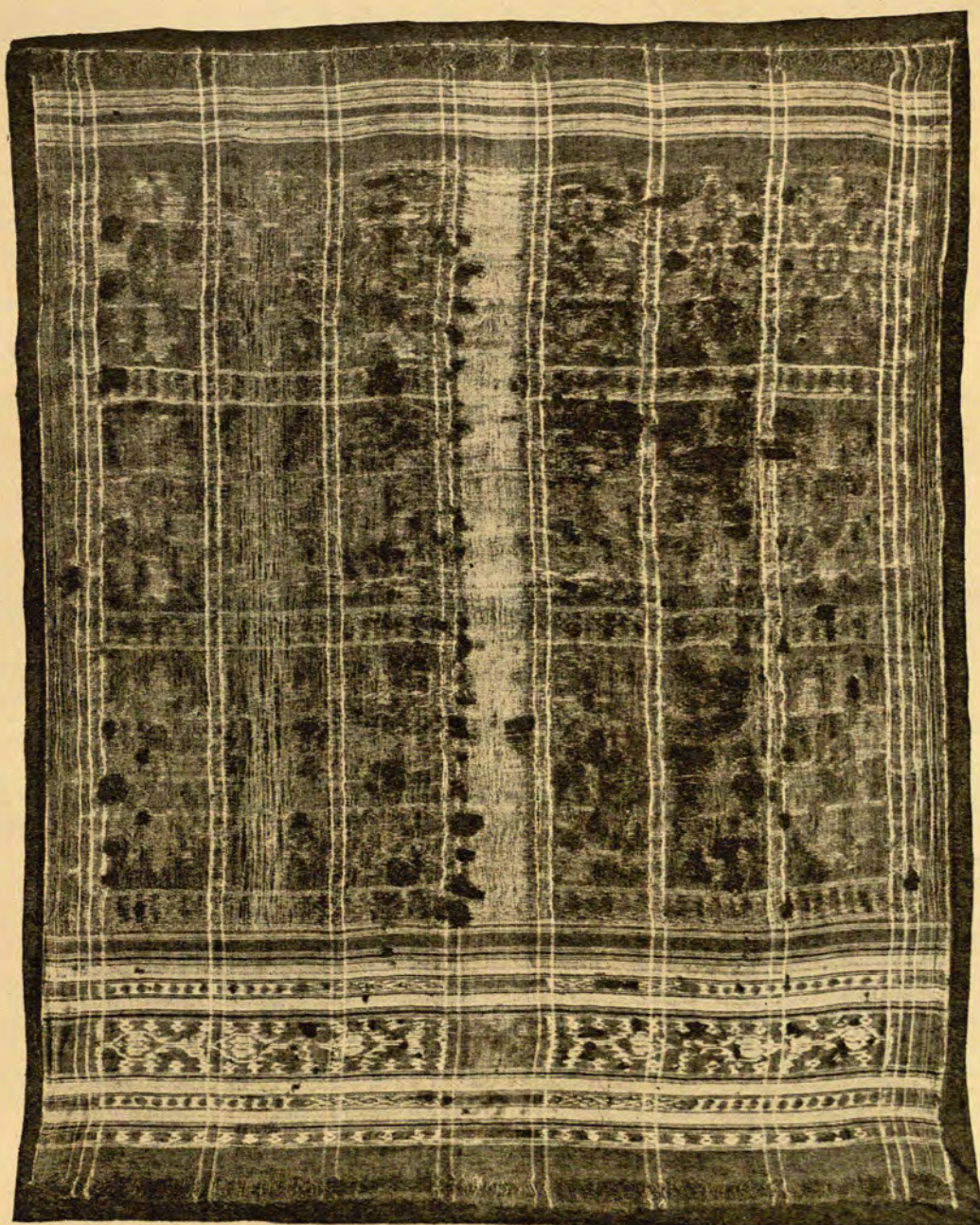
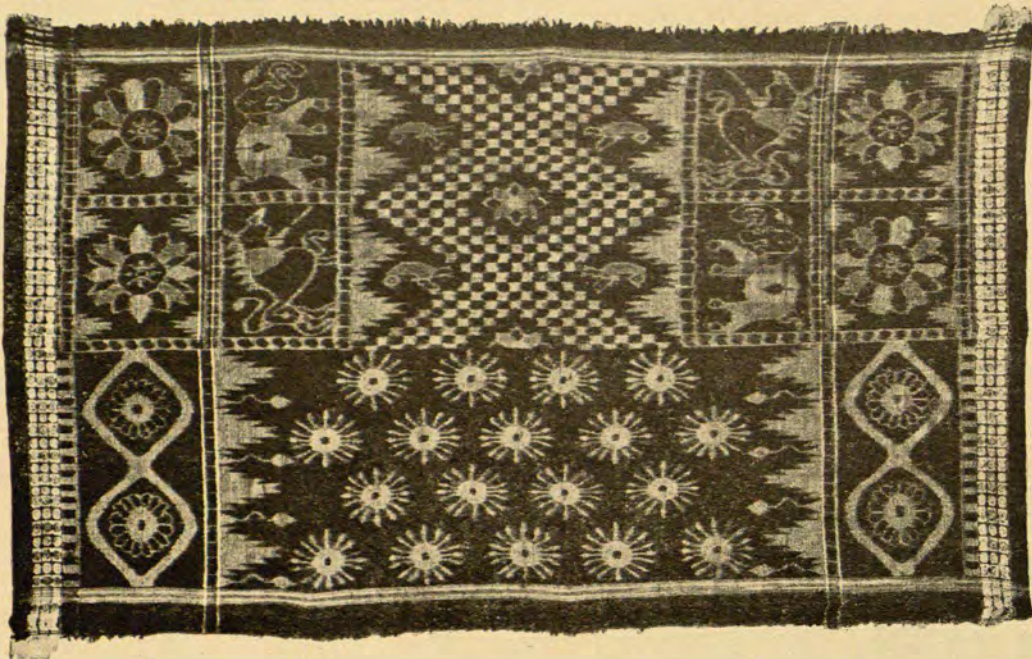


Plate 15 △
Silk Khandua
pattern sample,
Nuapatna area
Ca. 1850 A.D.
No. 2279

◁ Plate 16
Tassar khandua
pattern sample,
Nuapatna area.
Ca. 1900 A.D.
No. 2278



◁ Plate 17
Silk sample of motifs,
Nuapatna area.
Late 19th century.
No. 2275

Plate 18
Tassar Sadha
kumbha saree,
Nuapatna area.
Late 19th century.
No. 2270 ▽





Plate 19 : Silk Gitagobinda pheta sample, Nuapatna area. Early 20th century. No. 2274



◁ Plate 19a
Silk Gitagobindapheta, Puri,
woven in Nuapatna area.
Mid 20th century. No. 2418

Plate 20
Silk Souvenir for coronation of
George VI of England,
Nuapatna area, 1937. No. 2280

Plate 21
Cotton skirt border
Baghambari saree,
Bargarh, 1973. No. 2455

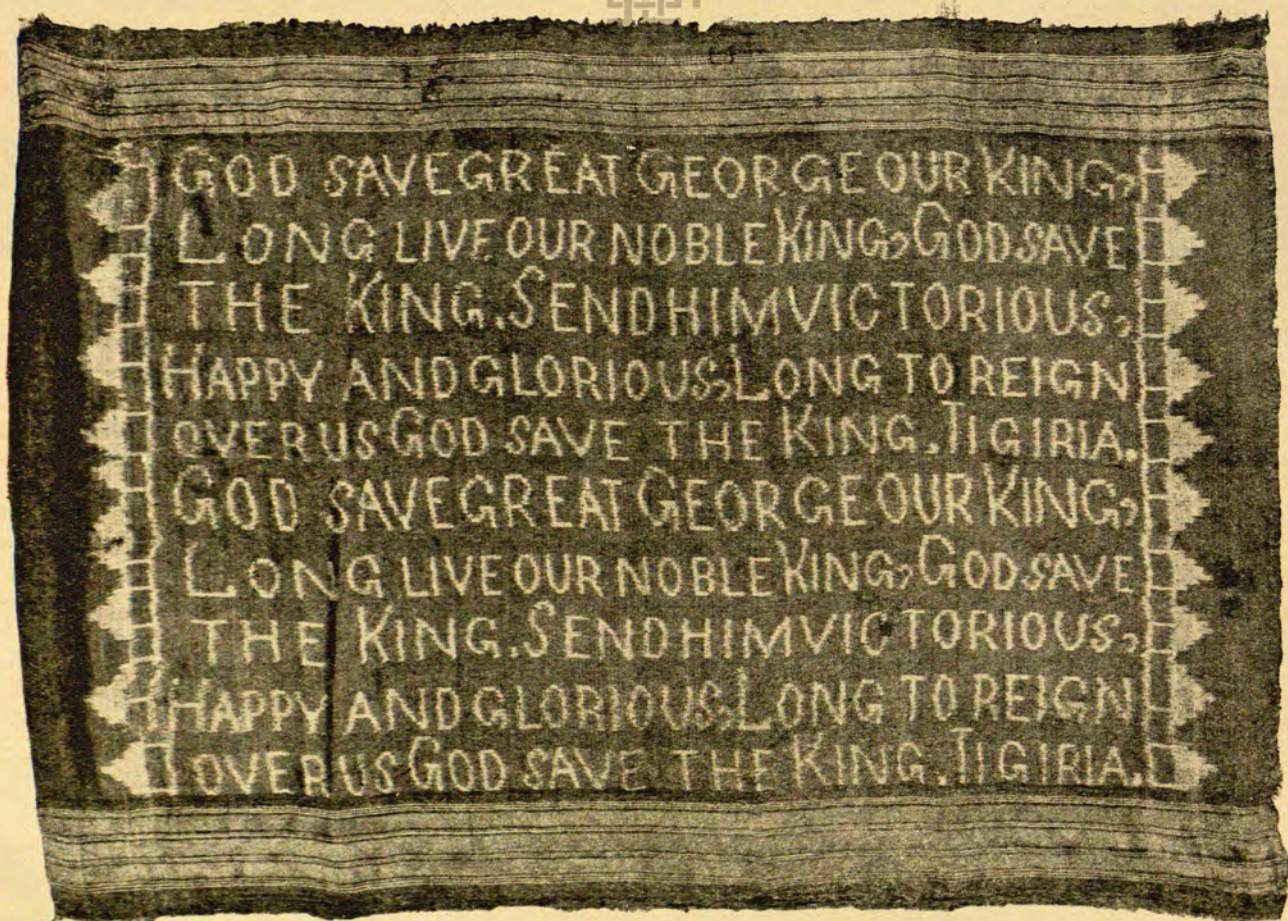
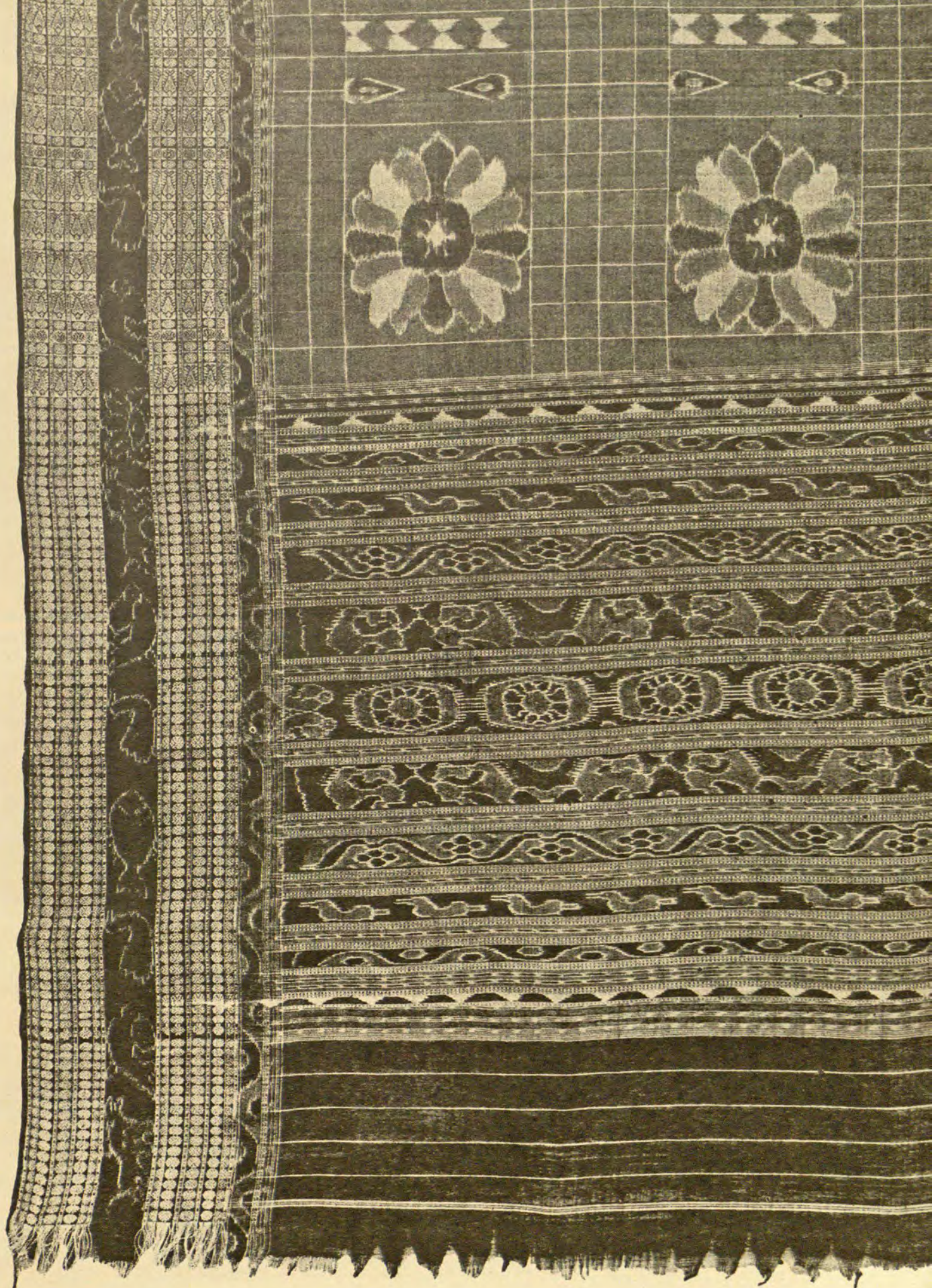


Plate 20



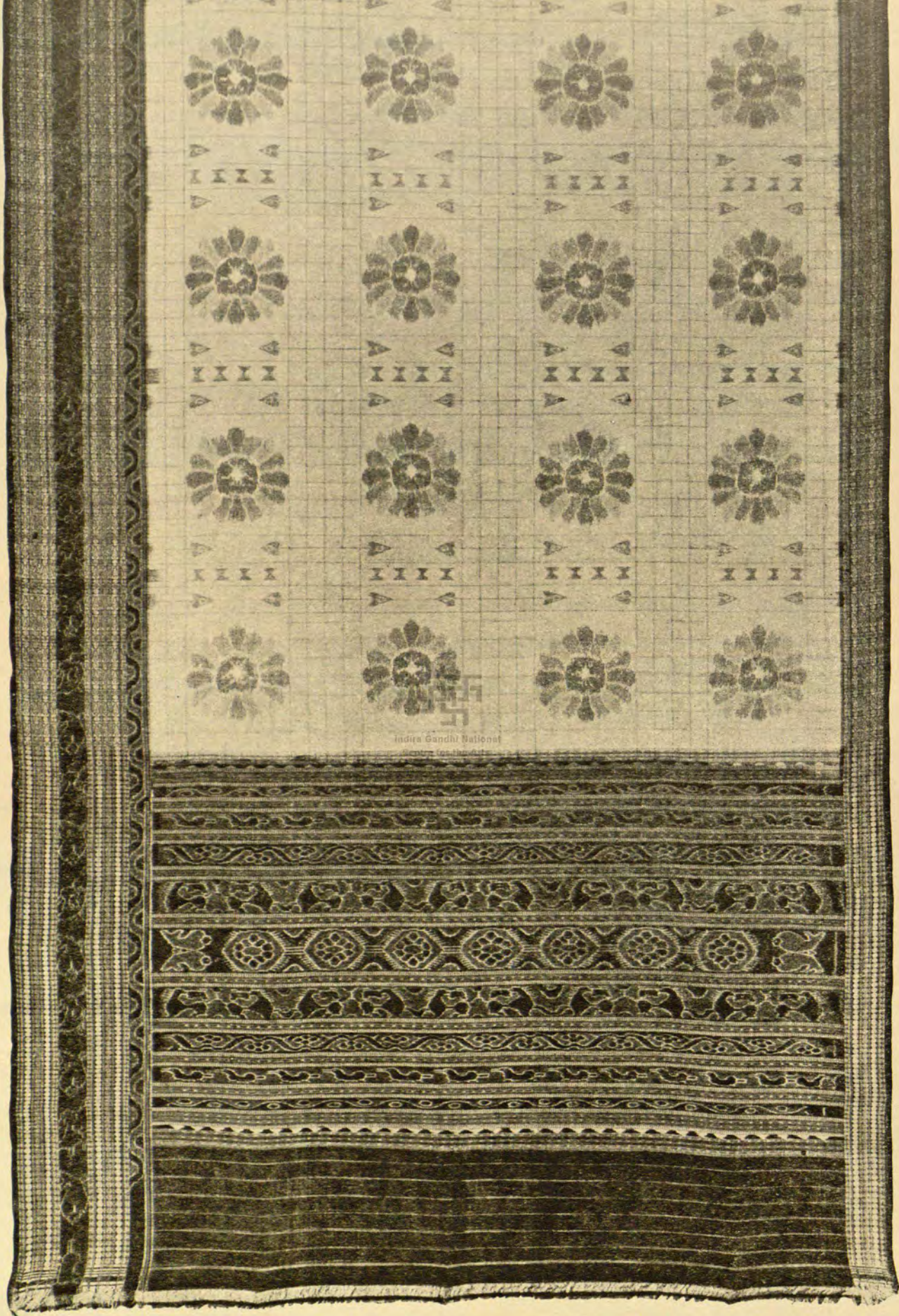


Plate 22 : Cotton skirt border Baghambari saree, Bargarh, 1973. No. 2451

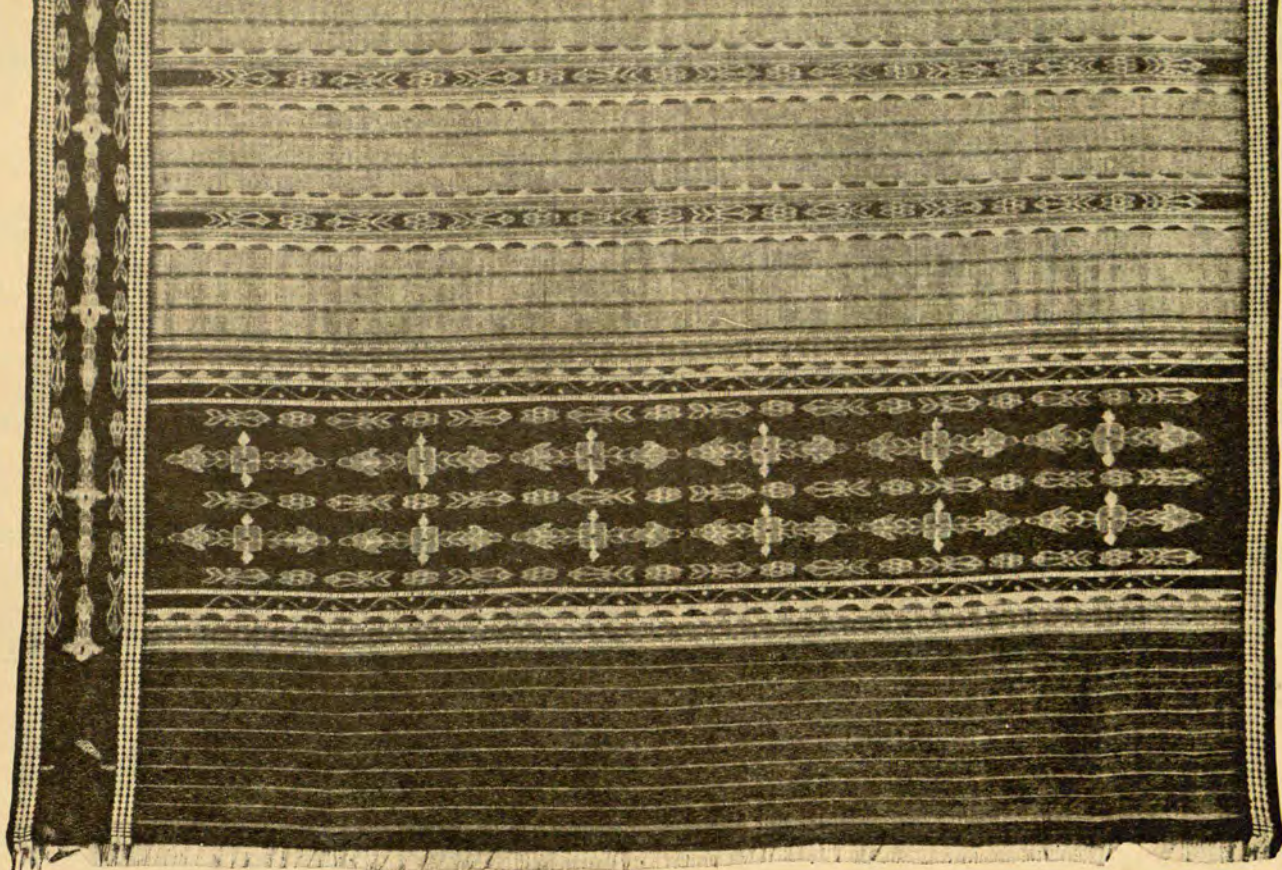
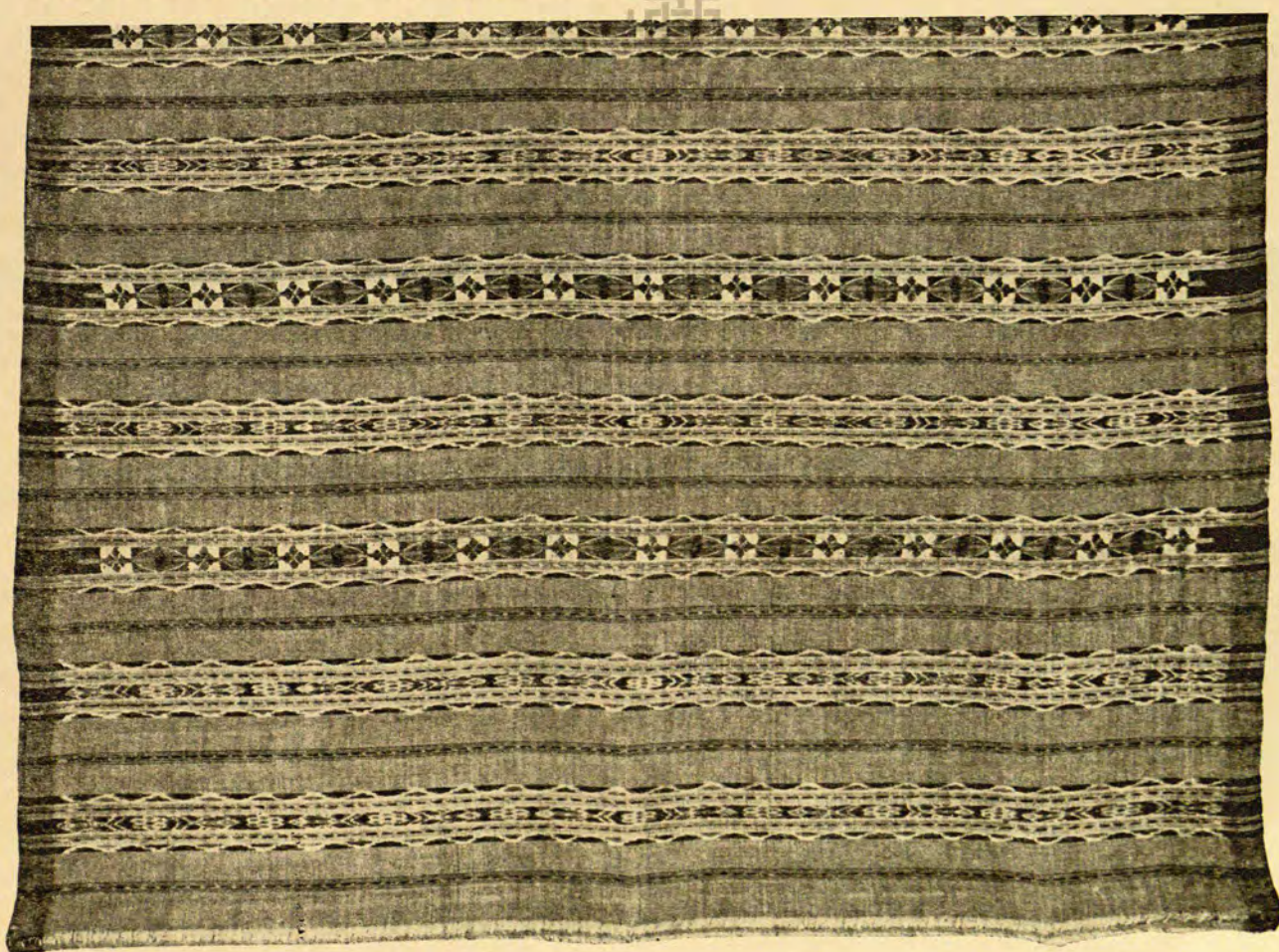
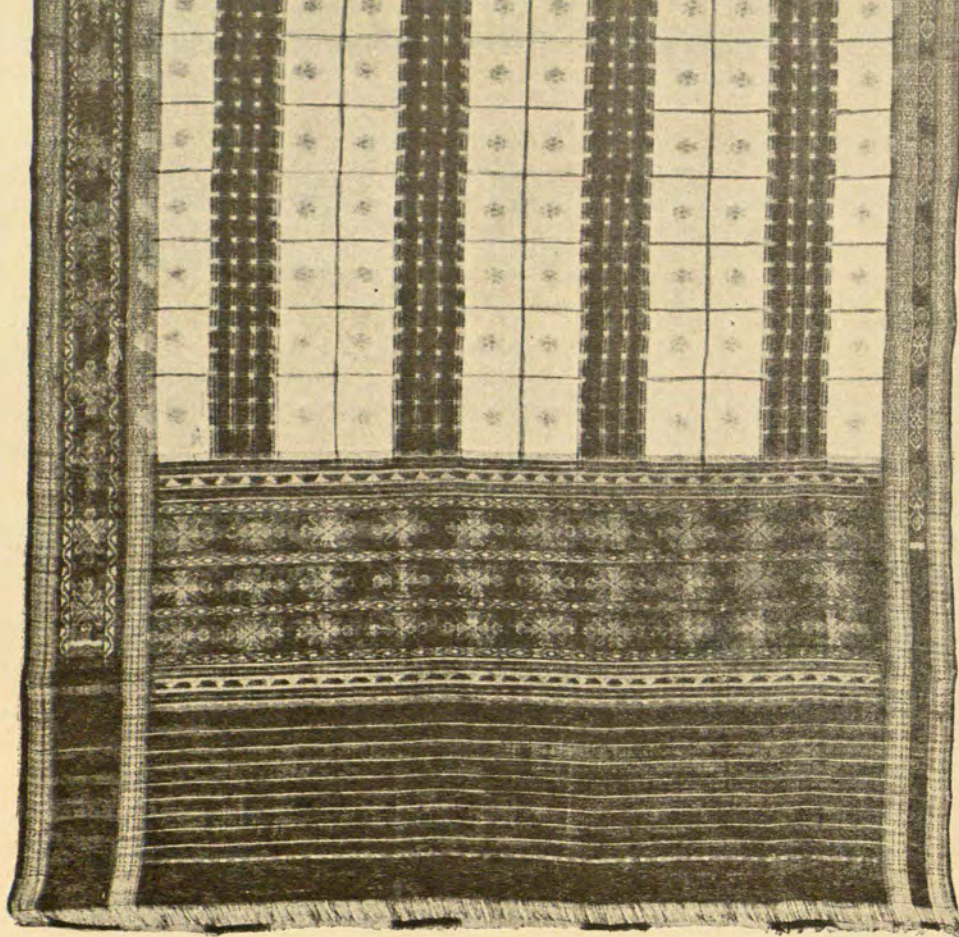


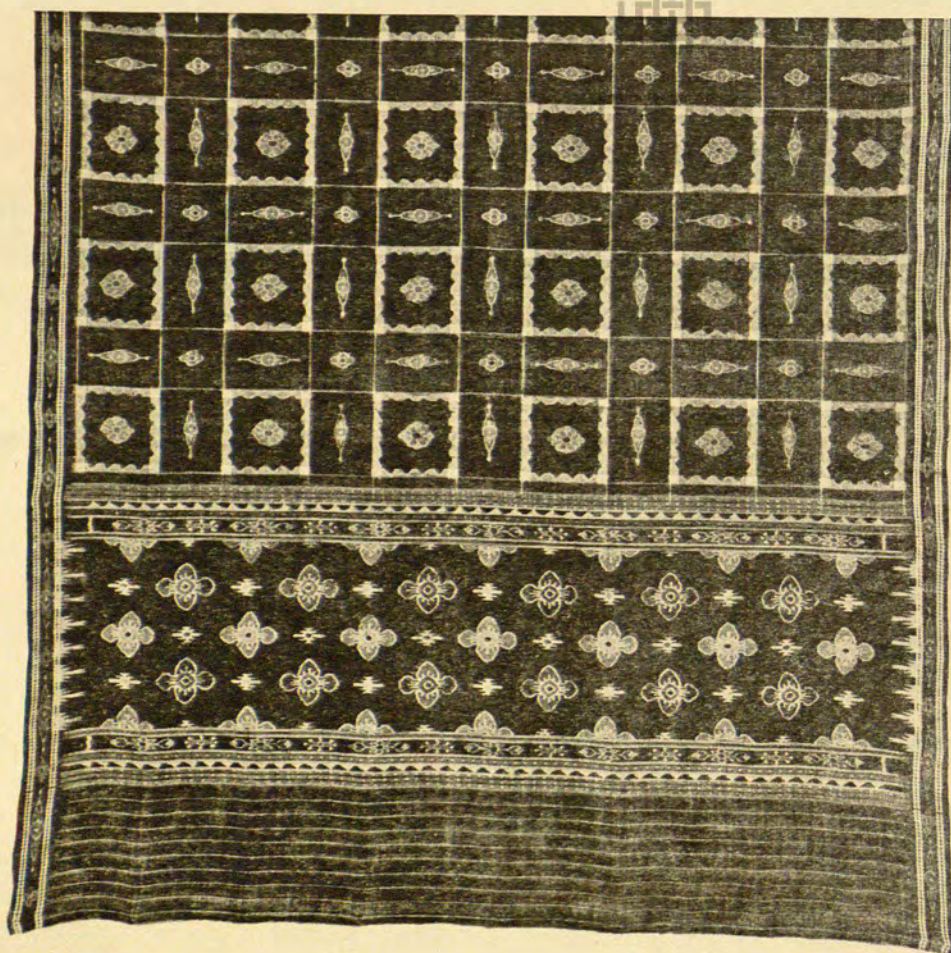
Plate 23 : Cotton skirt border saree, Bargarh, 1973. No. 2452 △

Plate 24 : Cotton stripe than saree, Bargarh, 1973. No. 2440 ▽





◁ Plate 25
Cotton skirt border
Bichitra saree,
Bargarh, 1973. No. 2446



◁ Plate 26
Cotton Padmatola saree,
Bargarh, 1973. No. 2441.

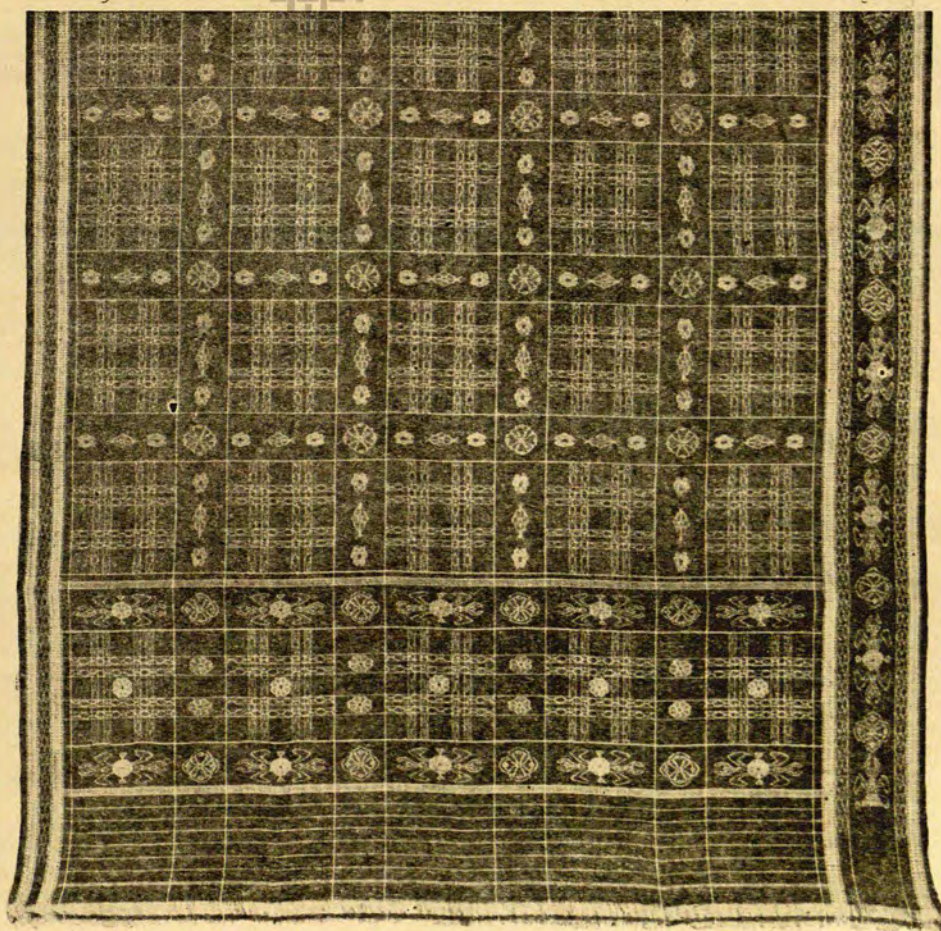
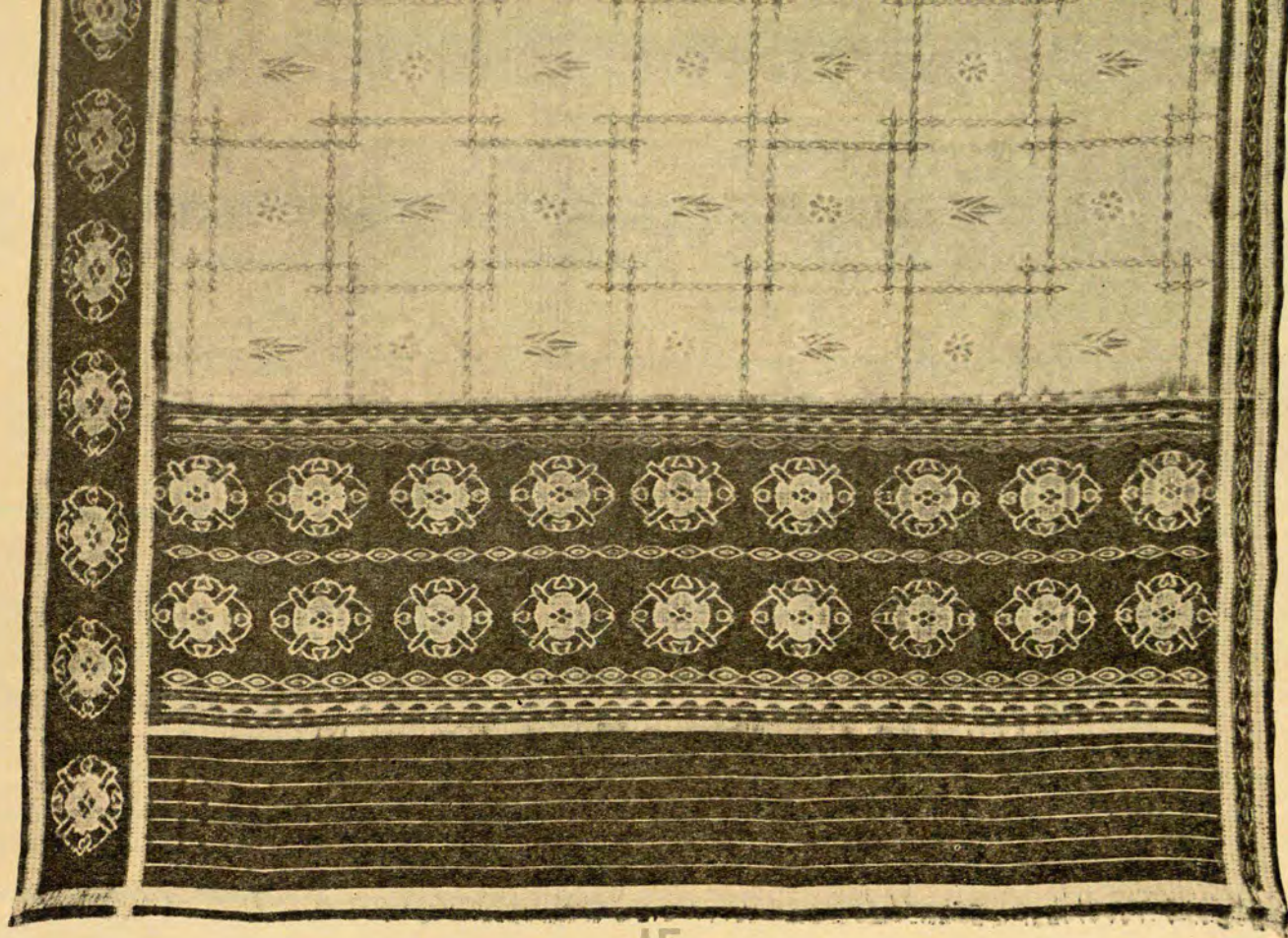
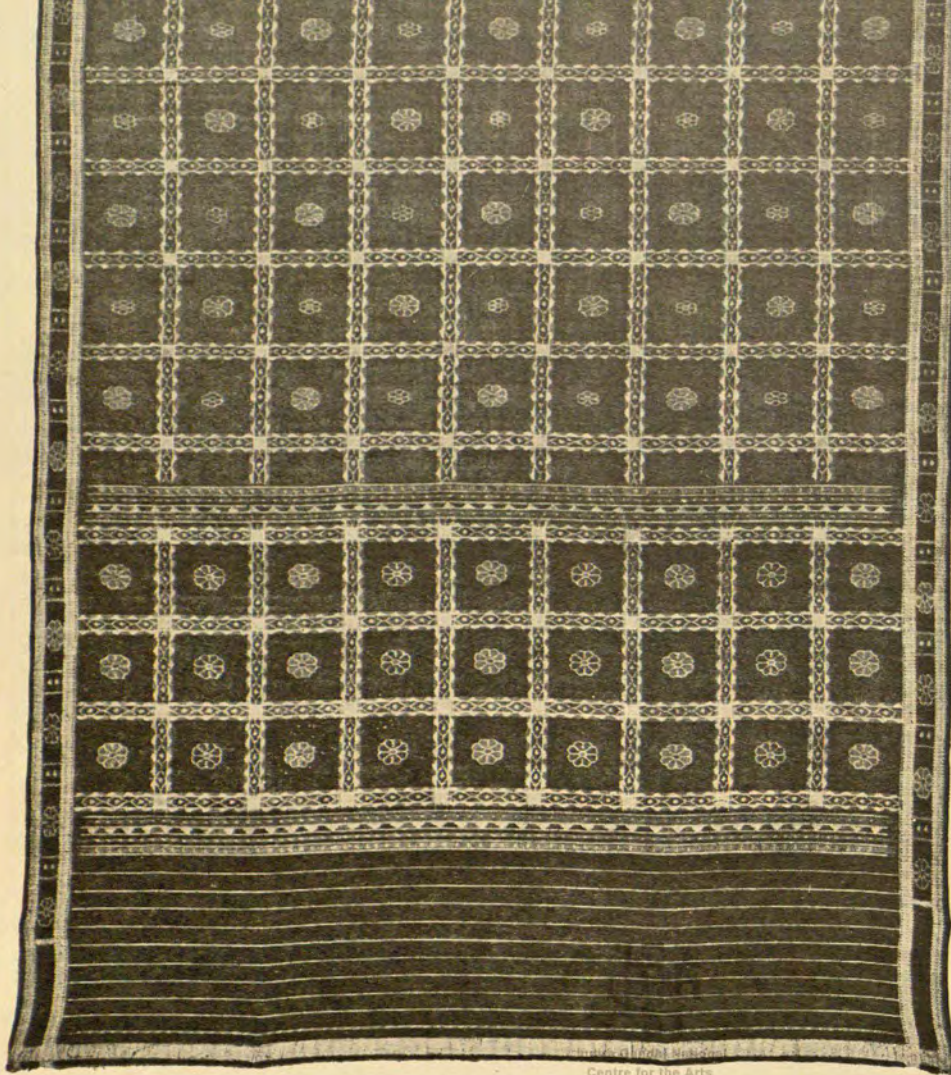


Plate 27 △
Cotton skirt border
Tapaswini saree
Bargarh, 1973.
No 2444

Plate 28 ▽
border Cotton skirt
Kalpataru saree,
Bargarh, 1973.
No. 2447



◁ Plate 29
Cotton Mathamani saree,
Bargarh, 1973. No. 2442

Plate 30
Cotton Chandraudiya
than saree,
Bargarh, 1973. No. 2449

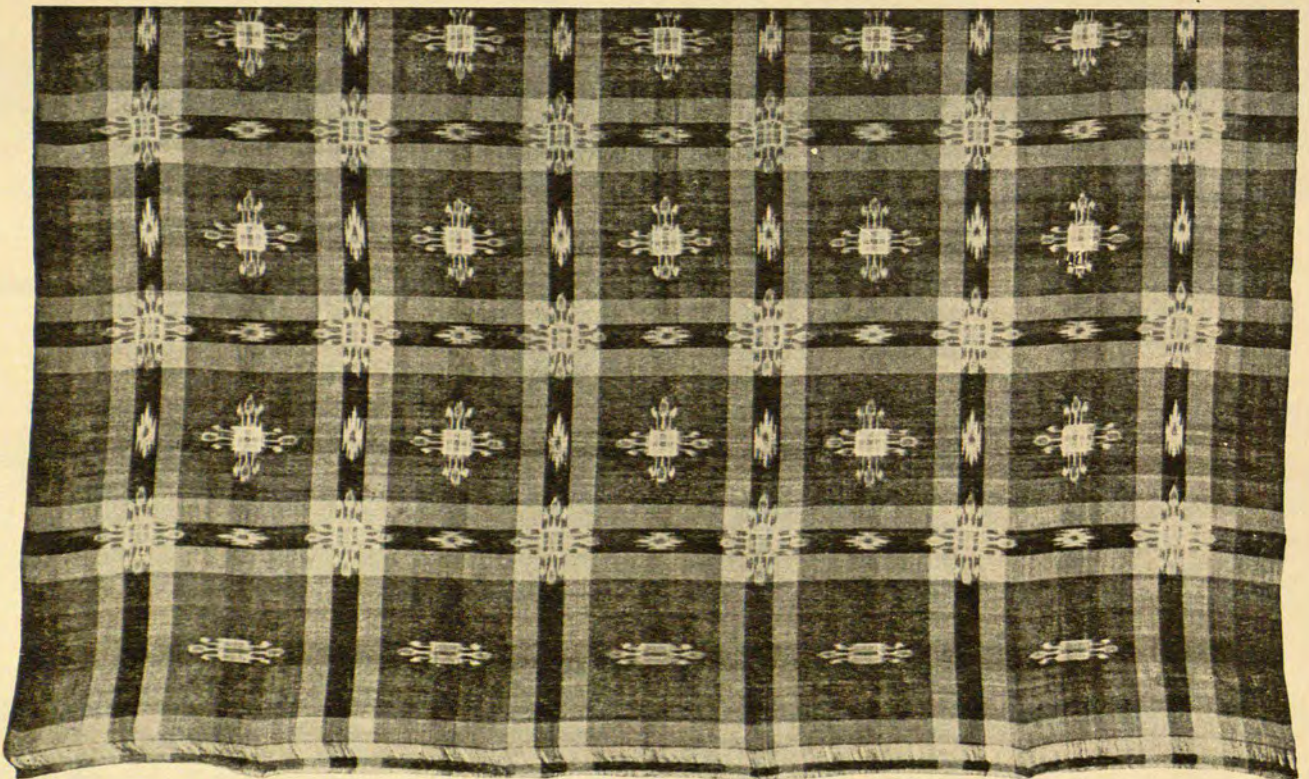
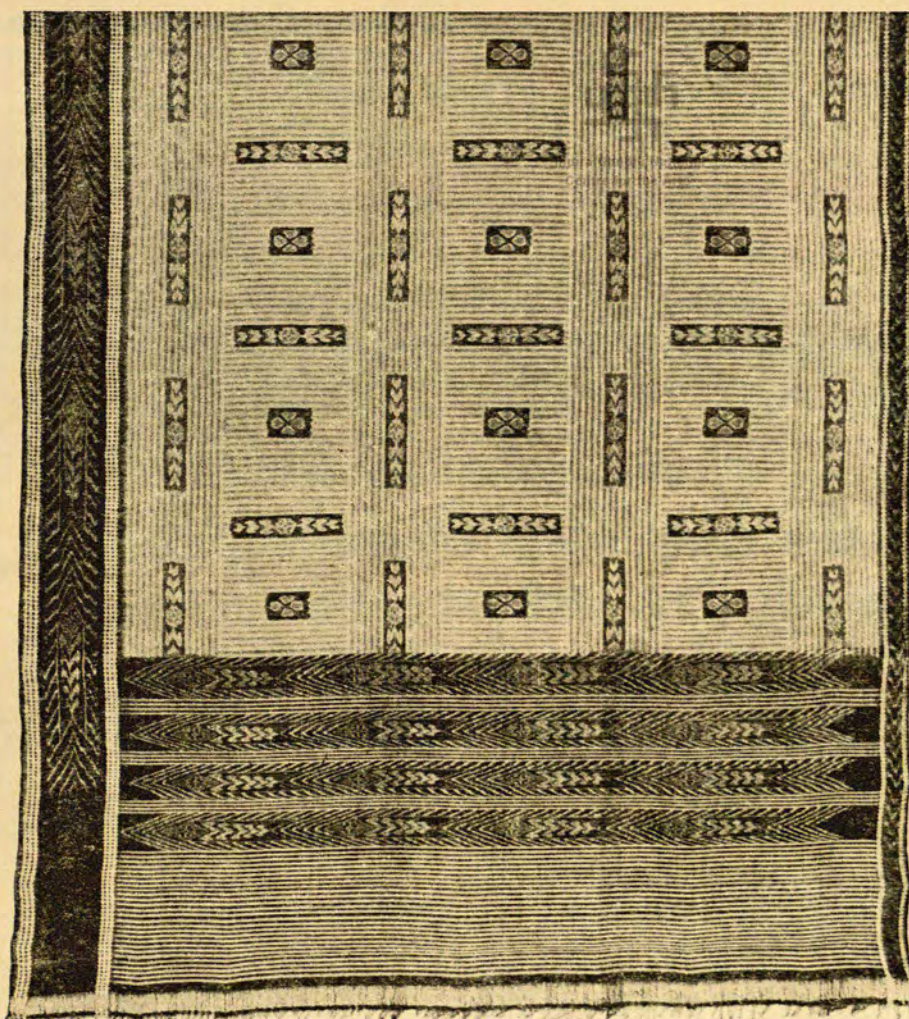
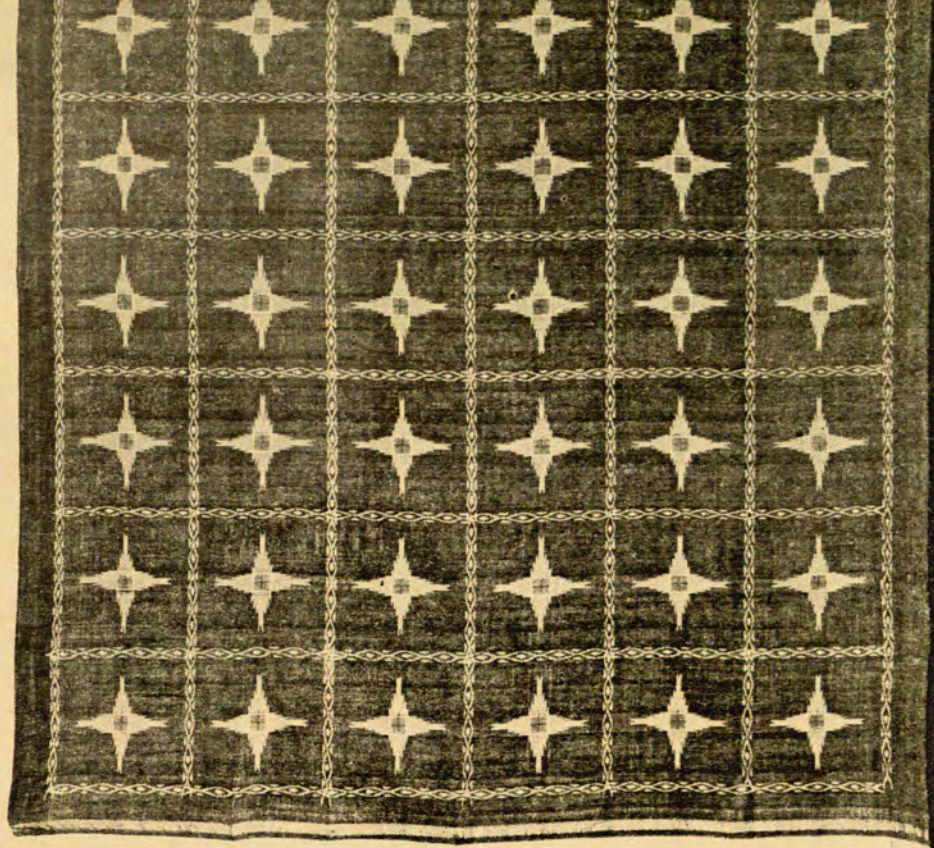


Plate 31 ▷
Cotton Asmantara than saree,
Bargarh, 1973. No. 2448



◁ Plate 32
Cotton skirt border
Rekha saree,
Bargarh, 1973. No. 2445

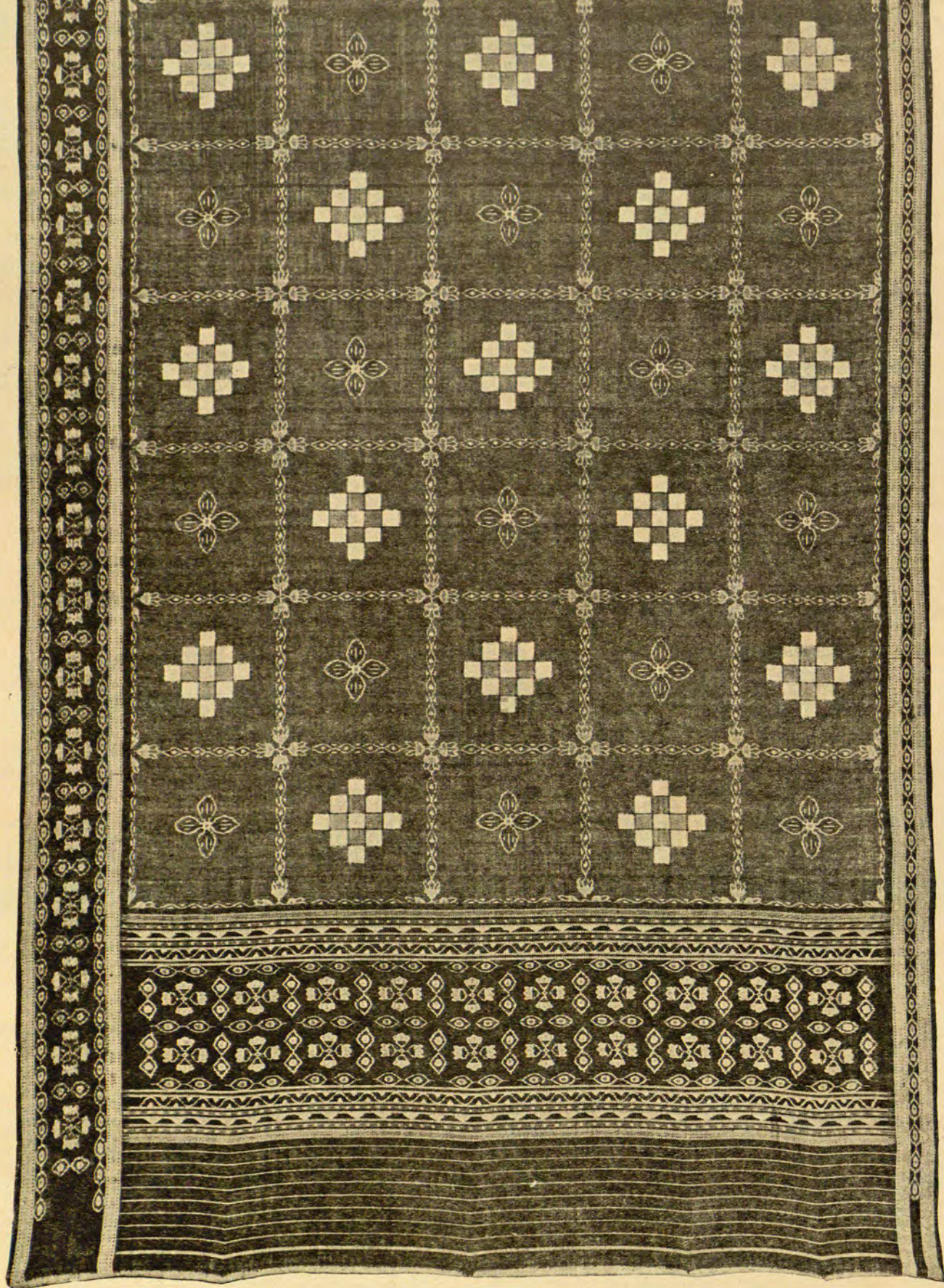


Plate 33 : Cotton skirt border Labanyabati saree, Bargarh, 1973. No. 2443

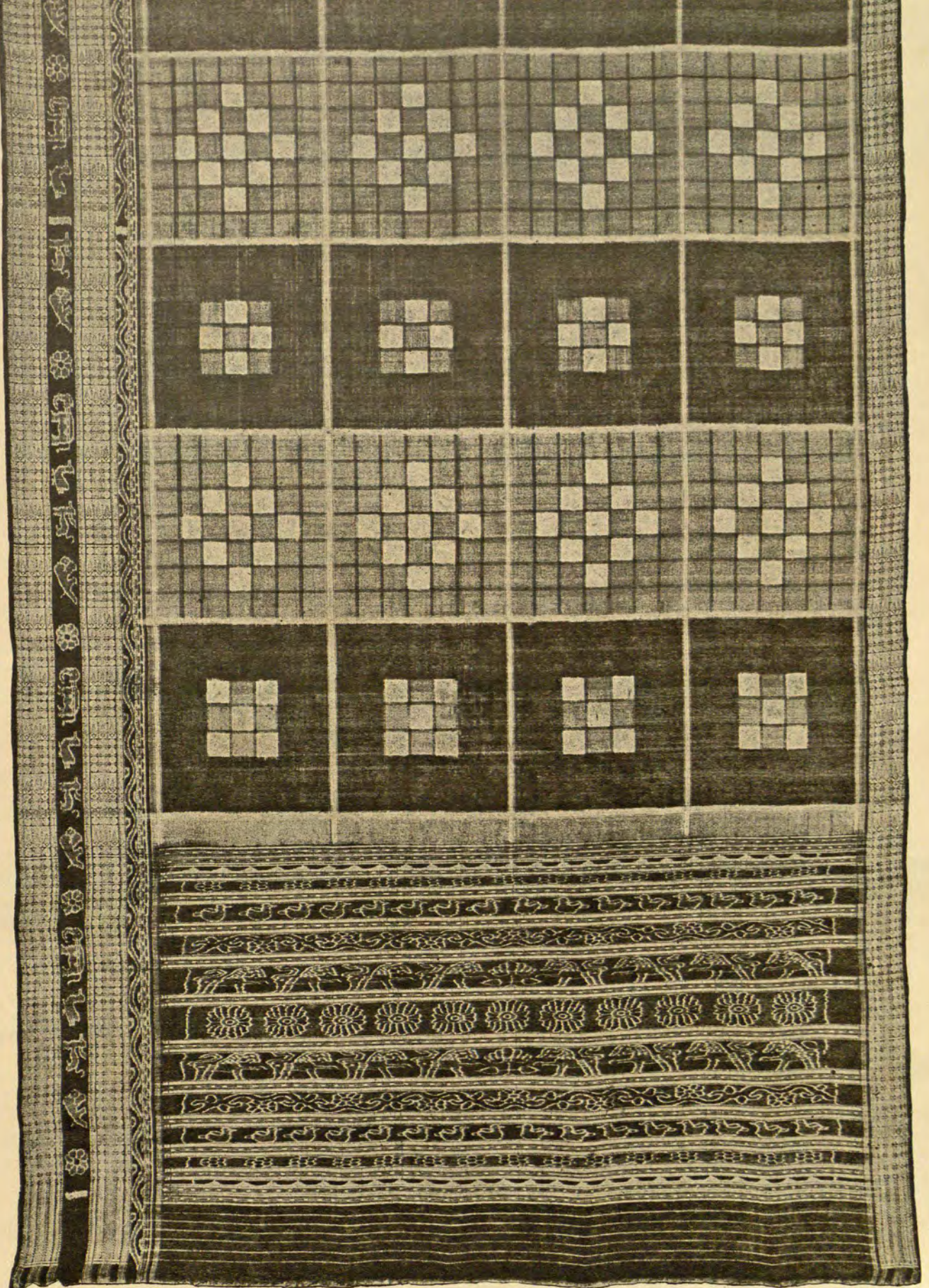


Plate 34 : Cotton skirt border Saktapar saree, Bargarh, 1973. No. 2454

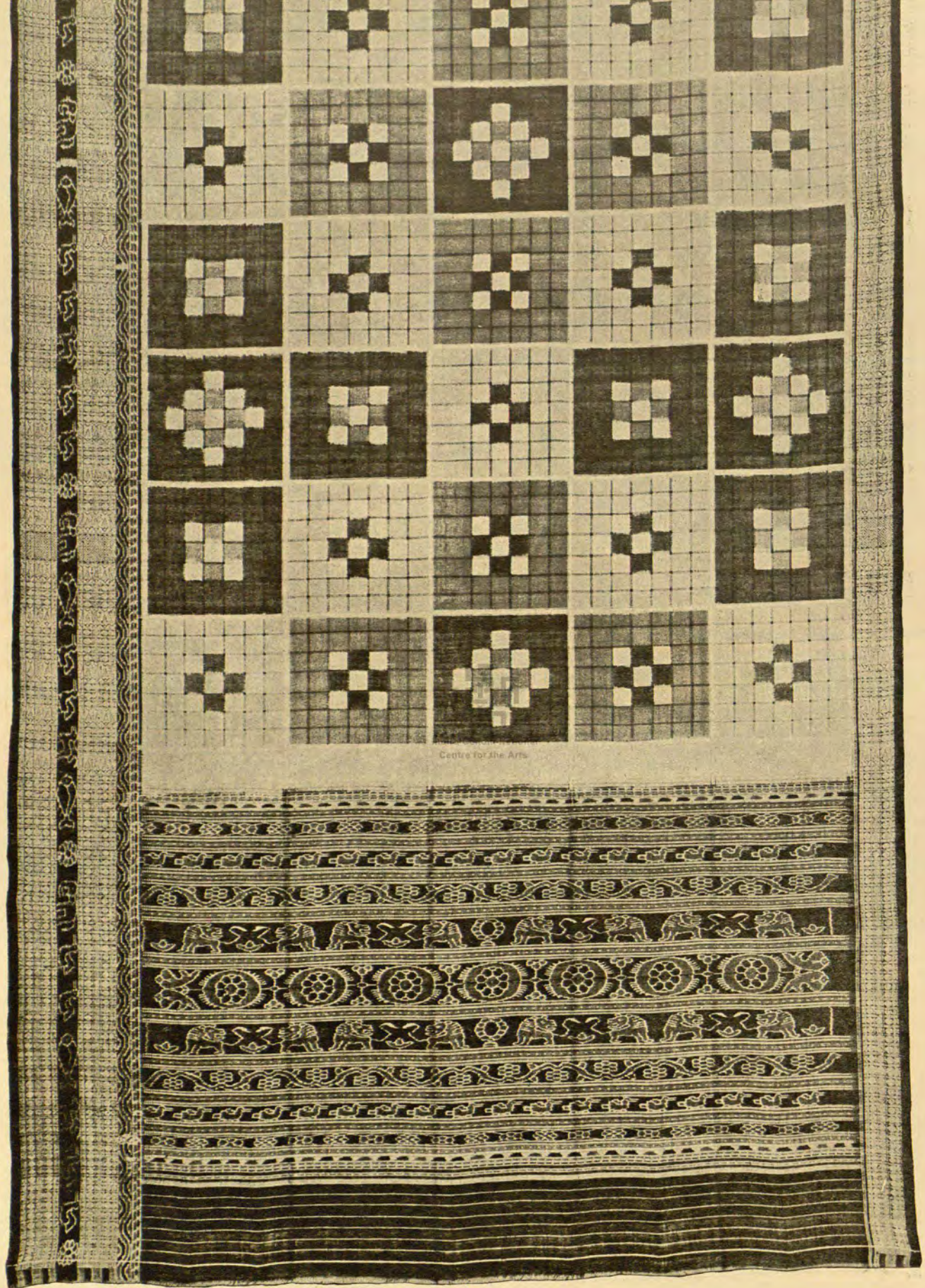
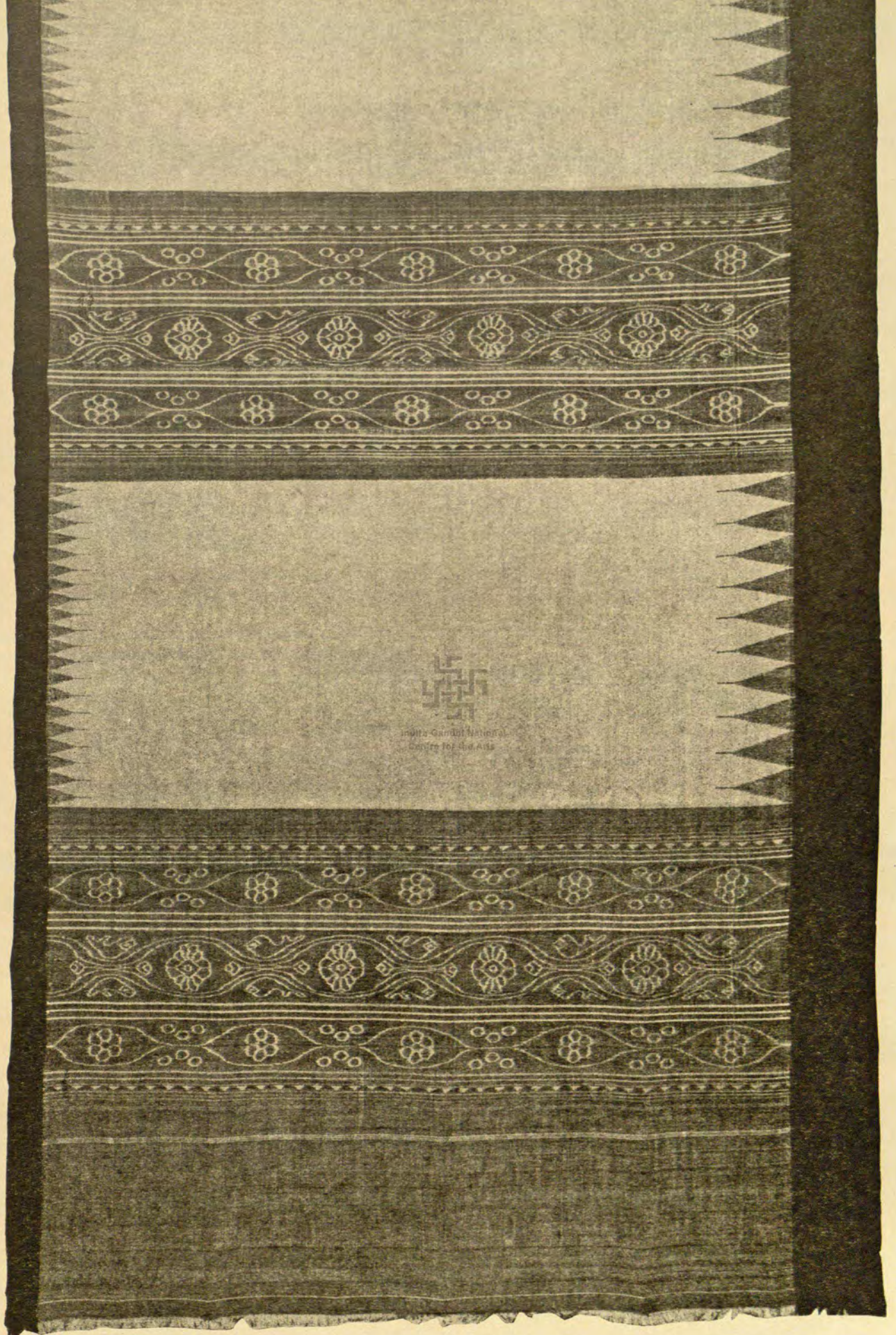
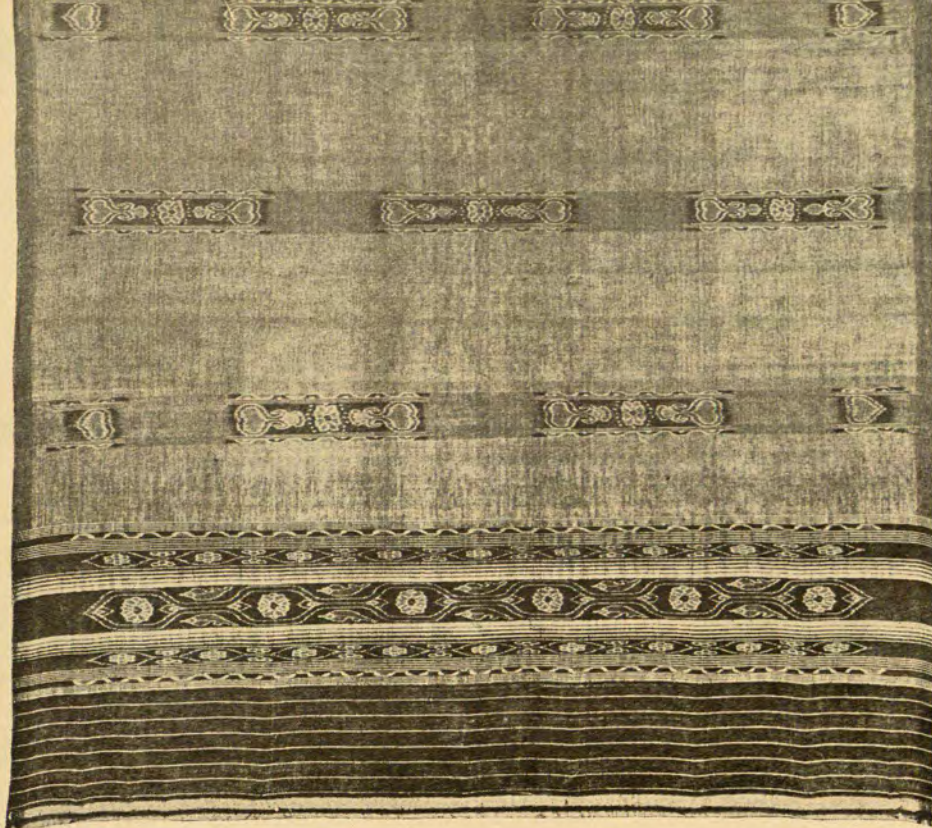


Plate 35 : Cotton skirt border Saktapar dega saree, Bargarh, 1973. No. 2453 △
 Plate 36 : Cotton Chhamuha saree, Sonepur, 1973. No. 2474 ▷







◁ Plate 38
Cotton saree,
Bargarh, 1973.
No. 2457



◁ Plate 37
Cotton skirt border
Gajalaxmi saree,
Bargarh, 1973.
No. 2439

Plate 39 ▷
Cotton coarse
domuha saree,
Bargarh, 1973.
No. 2456

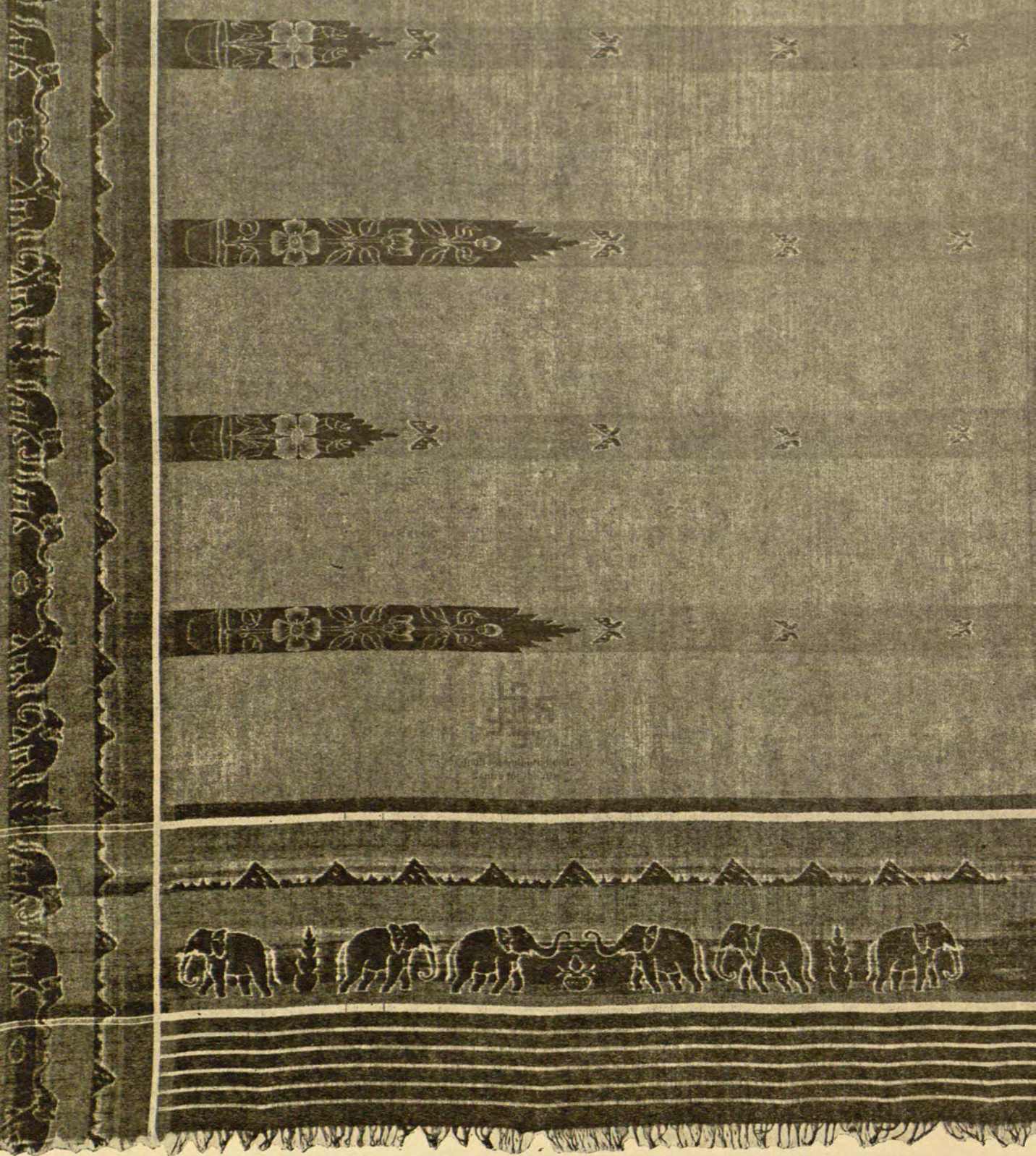
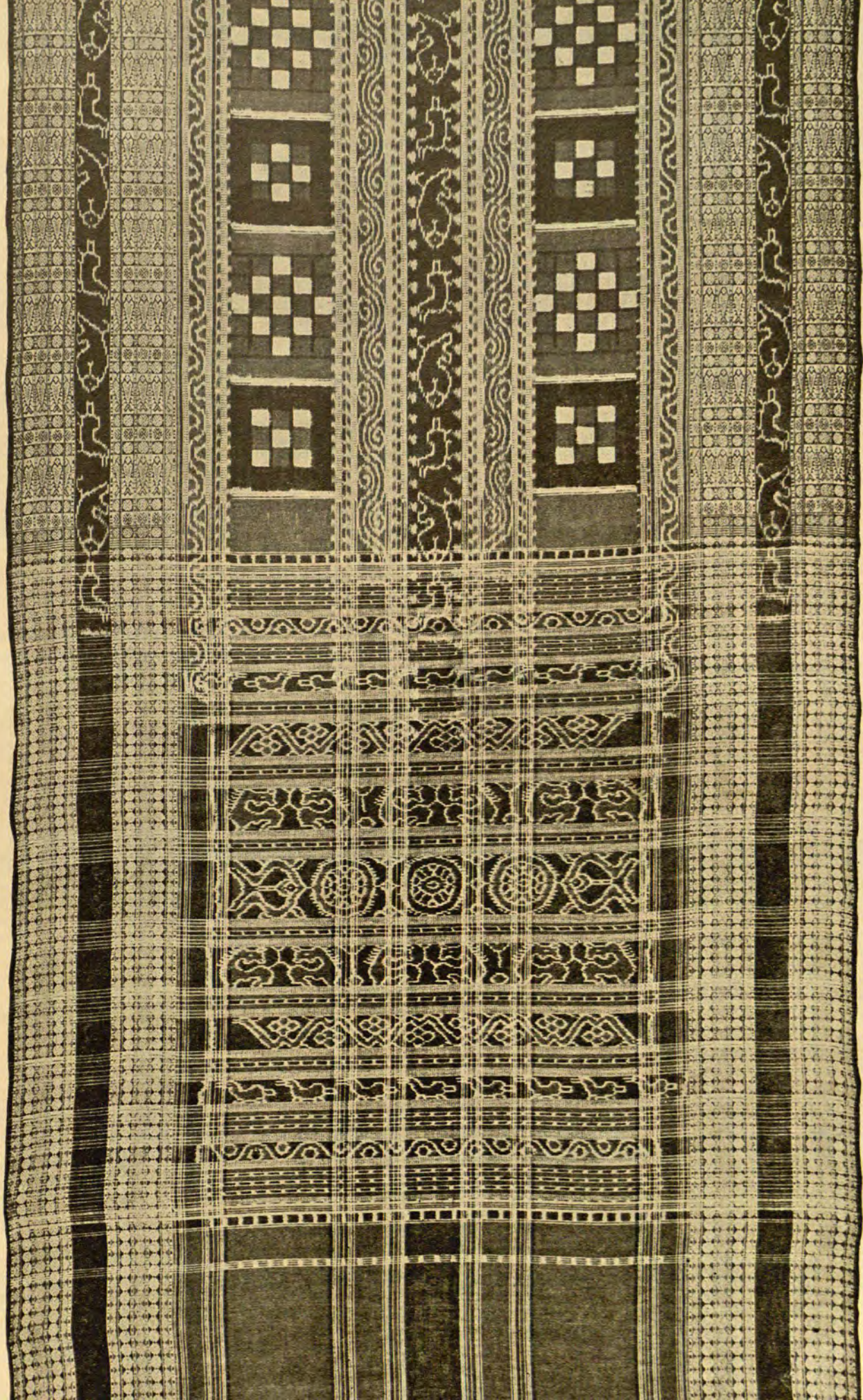


Plate 40 : Cotton skirt border saree, Barpali, 1973. No. 2472 △

Plate 41 : Cotton Saktapar saree, (Reproduction of old design), Bargarh, 1973 (woven in 1960, place of acquisition-Bhubaneswar). No. 2420 ▷



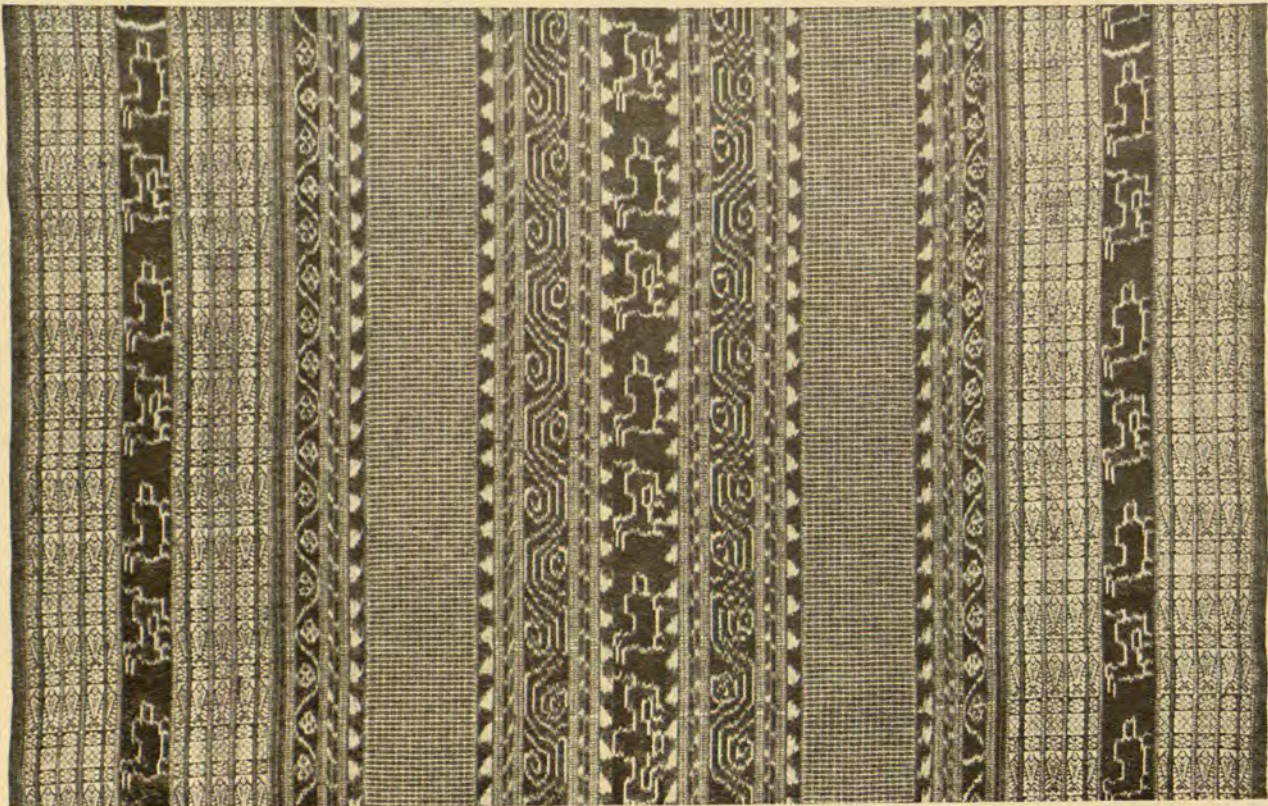
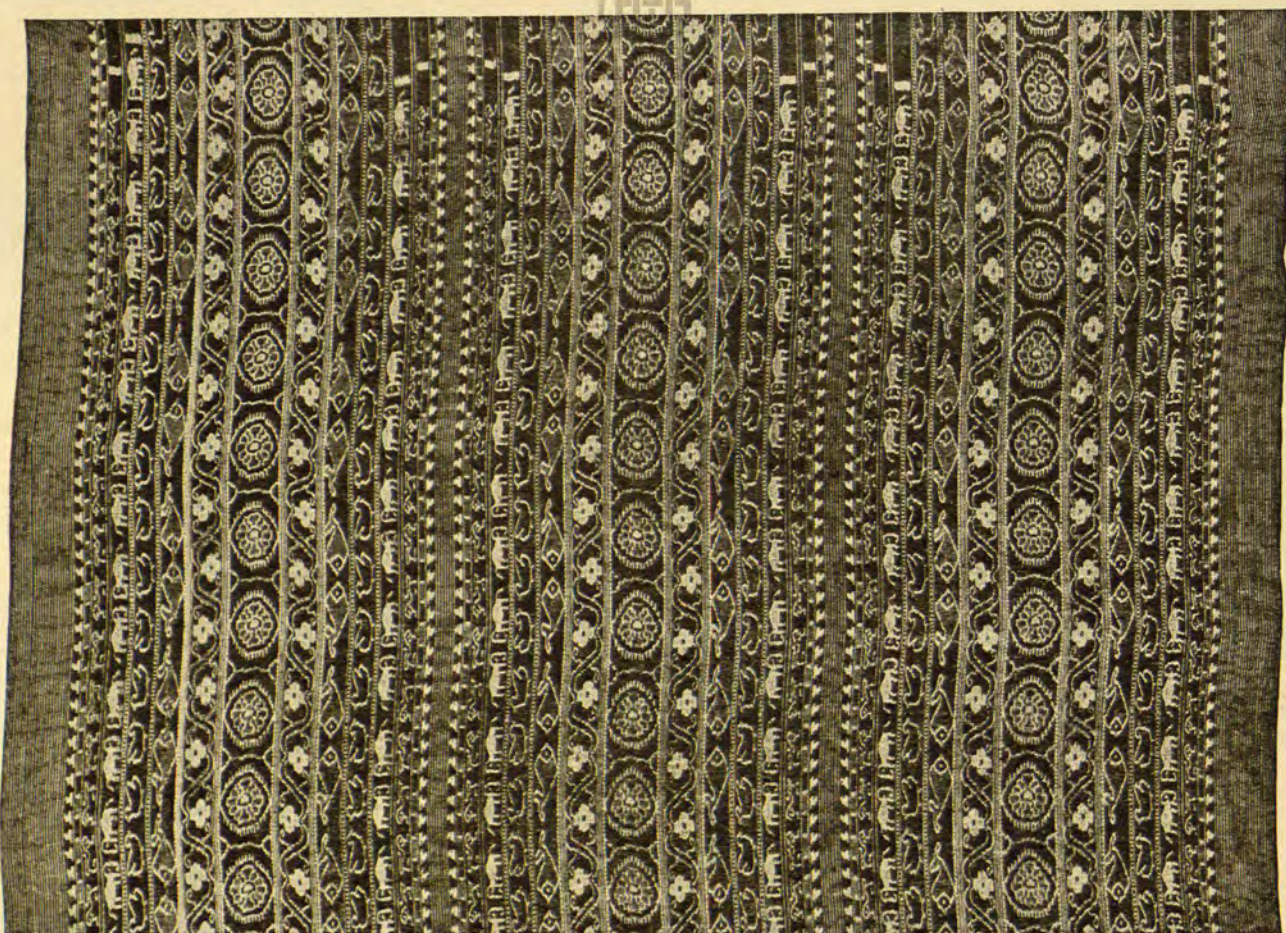


Plate 42 : Cotton Bichitrapar than material, (Reproduced from old design of Bichitrapar saree).
Bargarh, 1973 (woven in 1960, place of acquisition-Bhubaneswar). No. 2419 △

Plate 43 : Cotton fine dress than material, (a cut sample piece), Sonepur, 1973, (woven in 1972,
place of acquisition-Bhubaneswar). No. 2422 ▽



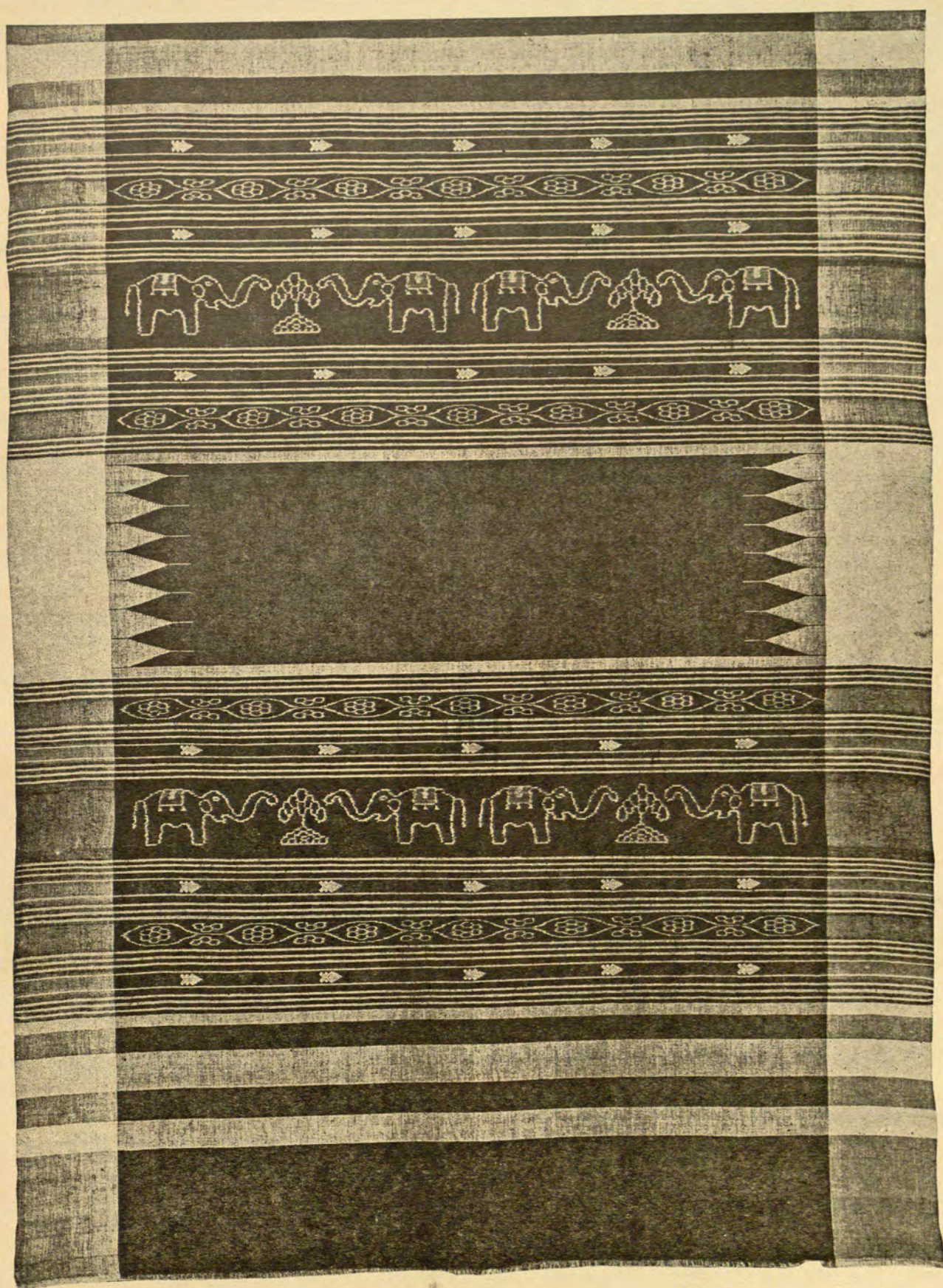
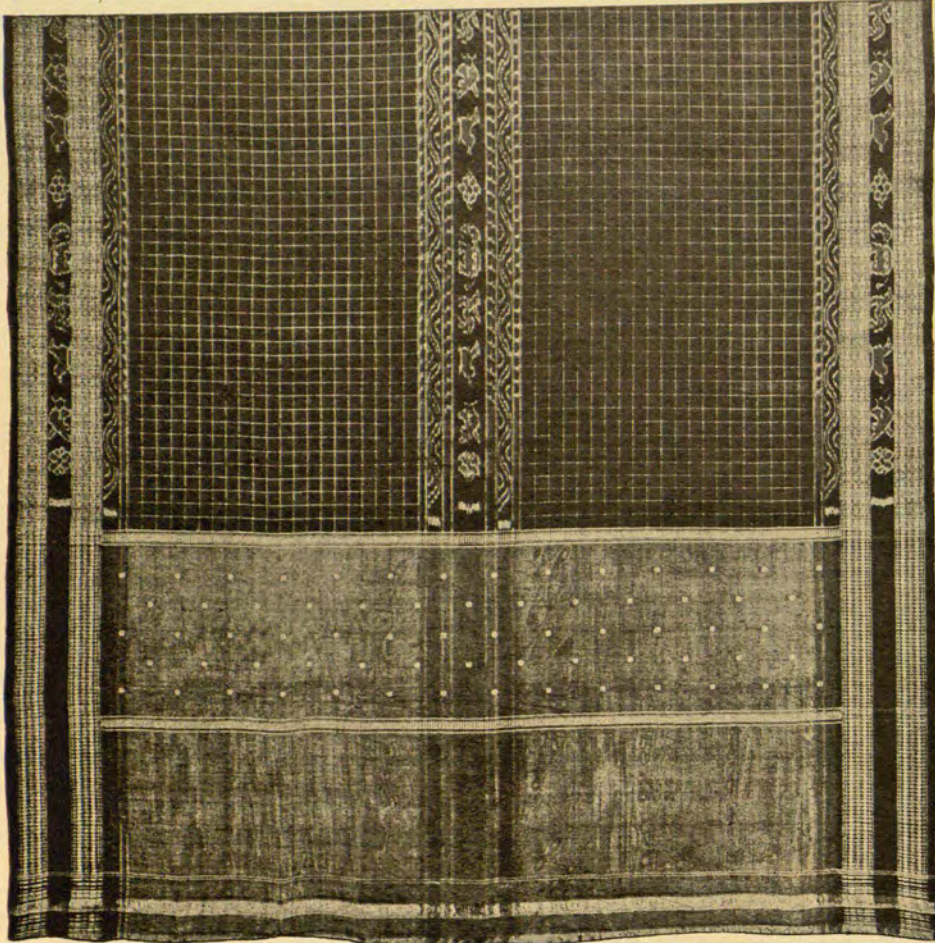


Plate 44 : Cotton Bed cover, Barpali, 1973 (woven in 1972, place of acquisition-Bhubaneswar). No. 2424



◁ Plate 45
Silk saree, Sonapur,
1973 (woven in 1966,
place of acquisition,
Bhubaneswar).
No. 2421

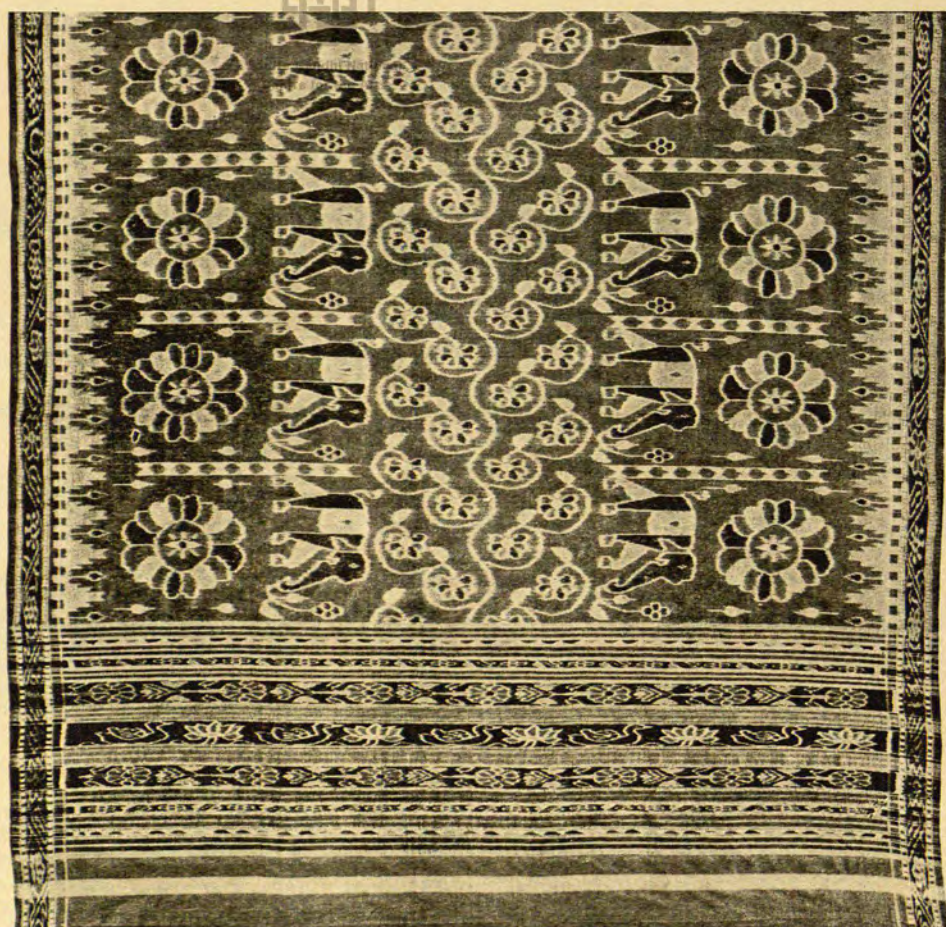


Plate 46 ▷
Silk Muktajhari
khandua saree,
Nuapatna, 1973.
No. 2435

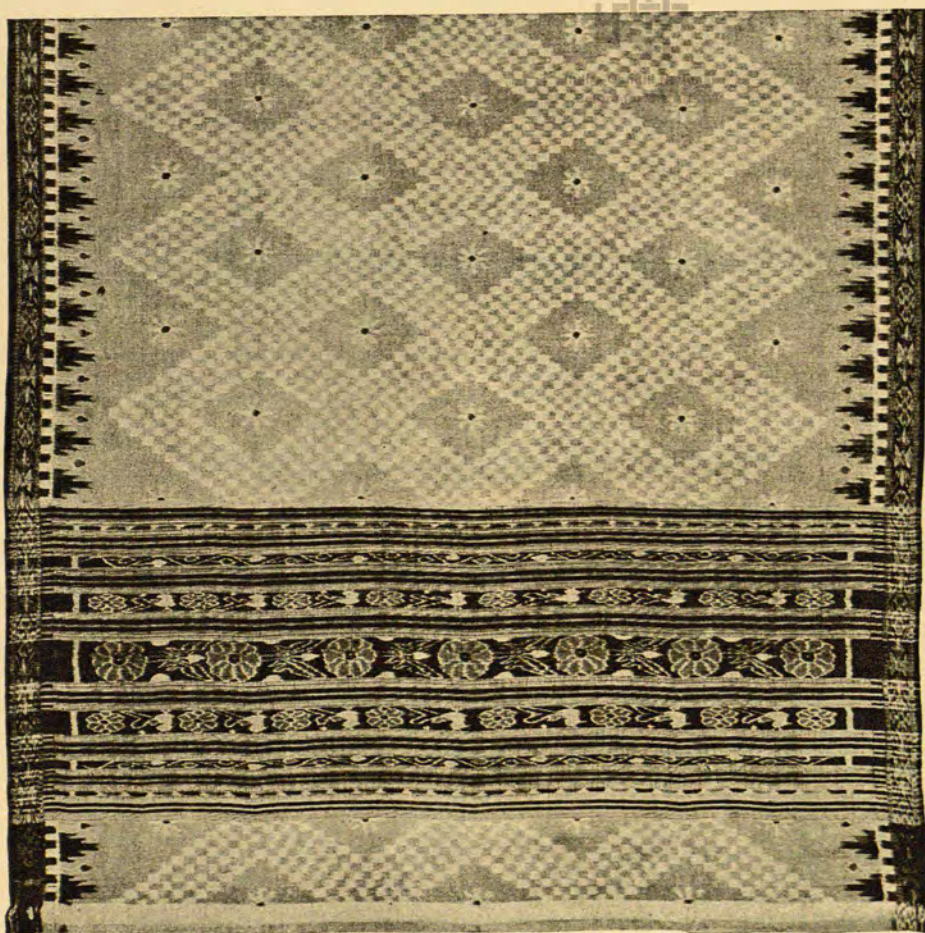
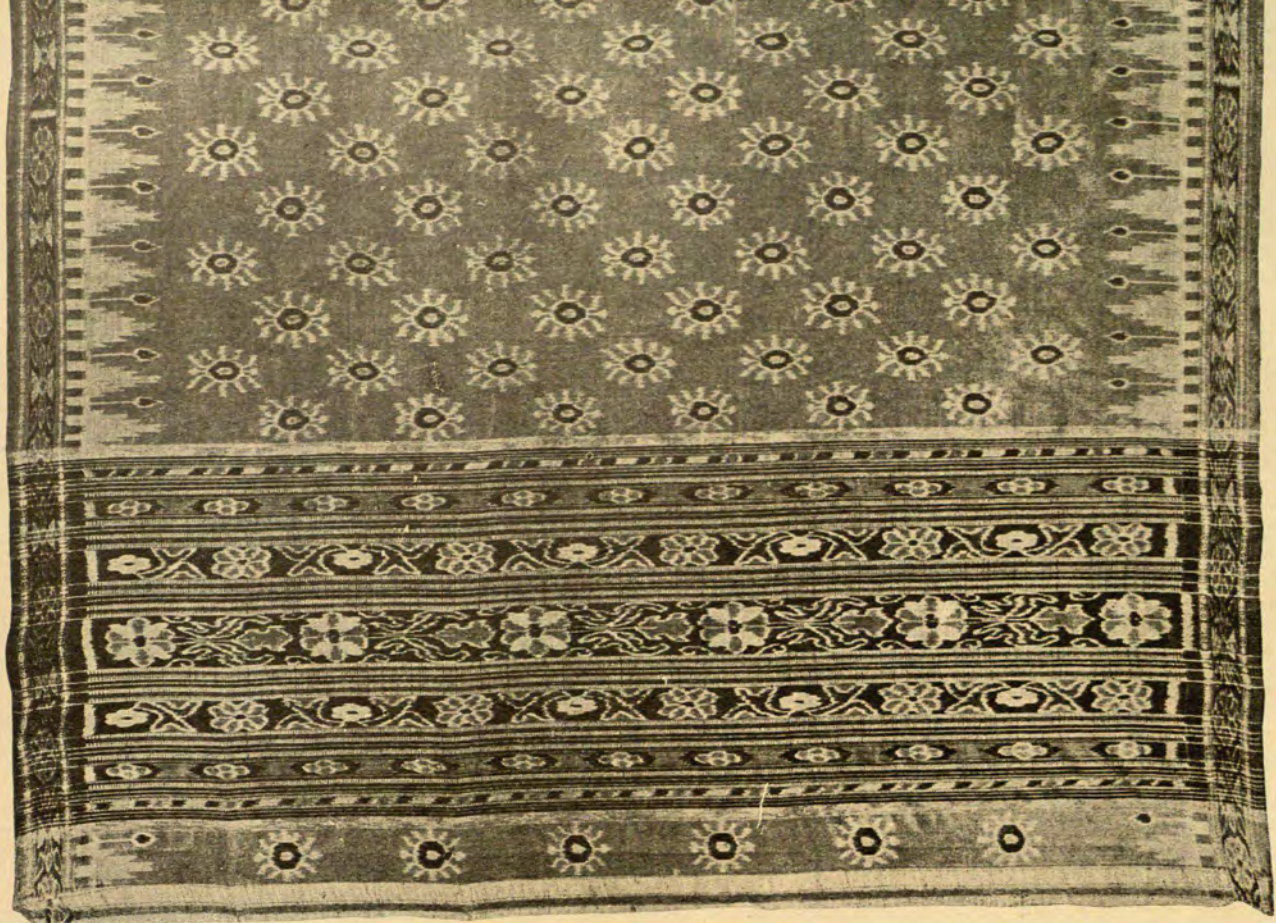
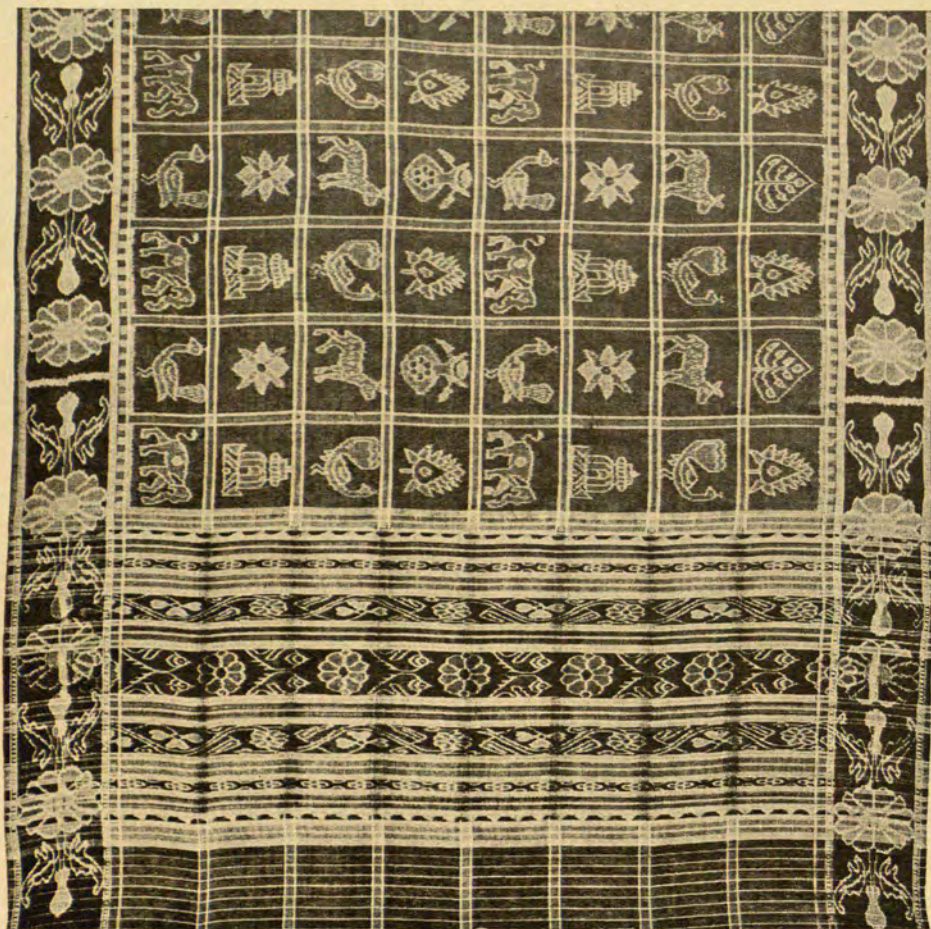


Plate 47 $\triangle$
Silk Nakshatrabhusana
Saree,
Nuapatna, 1973
No. 2438

∇ Plate 48
Silk Tarabali saree,
Nuapatna, 1973.
No. 2432



◁ Plate 49
Silk Athkothari saree,
Nuapatna 1973.
No. 2427



◁ Plate 50
Silk Nakothari saree,
Nuapatna, 1973.
No. 2428

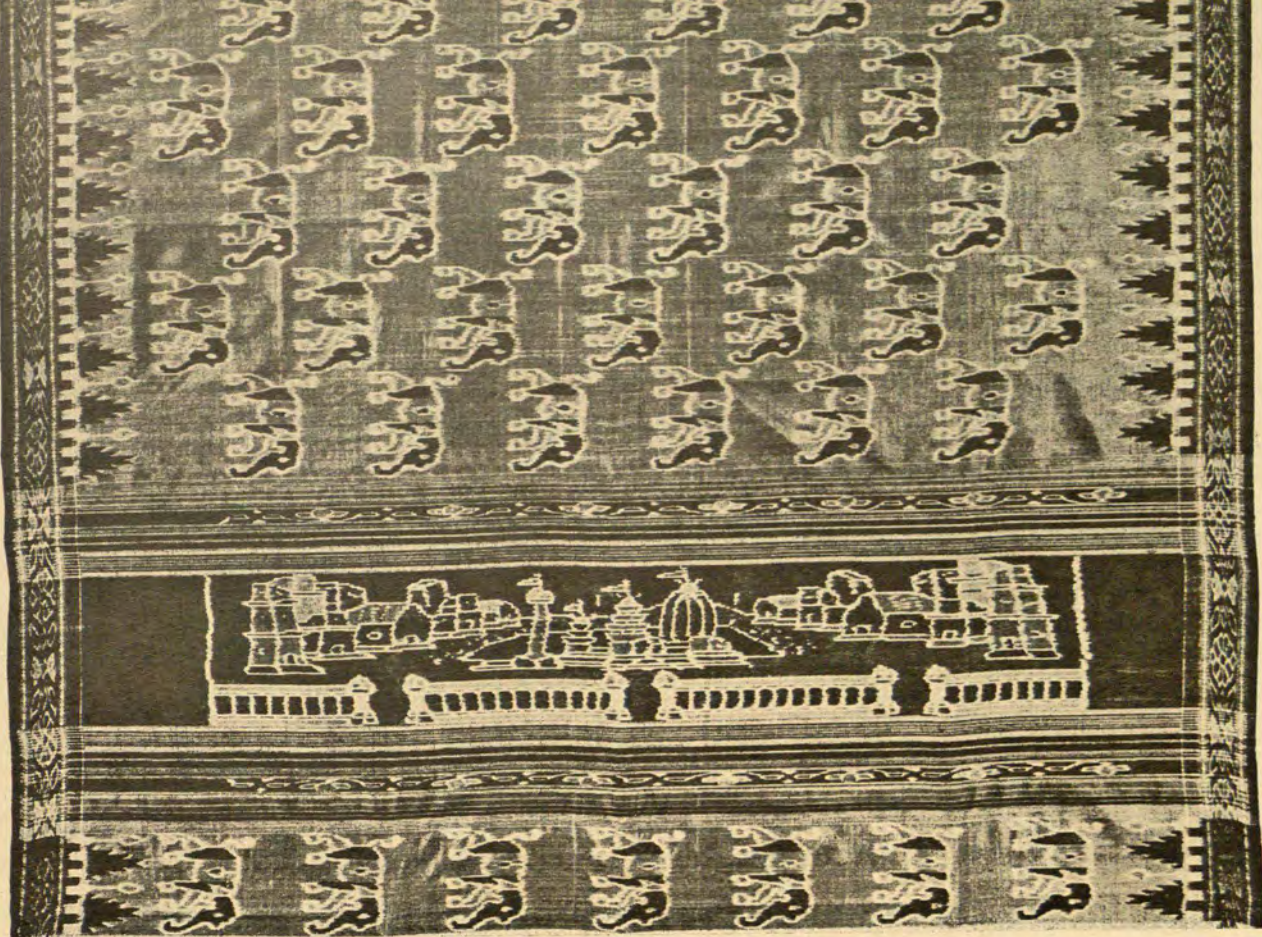
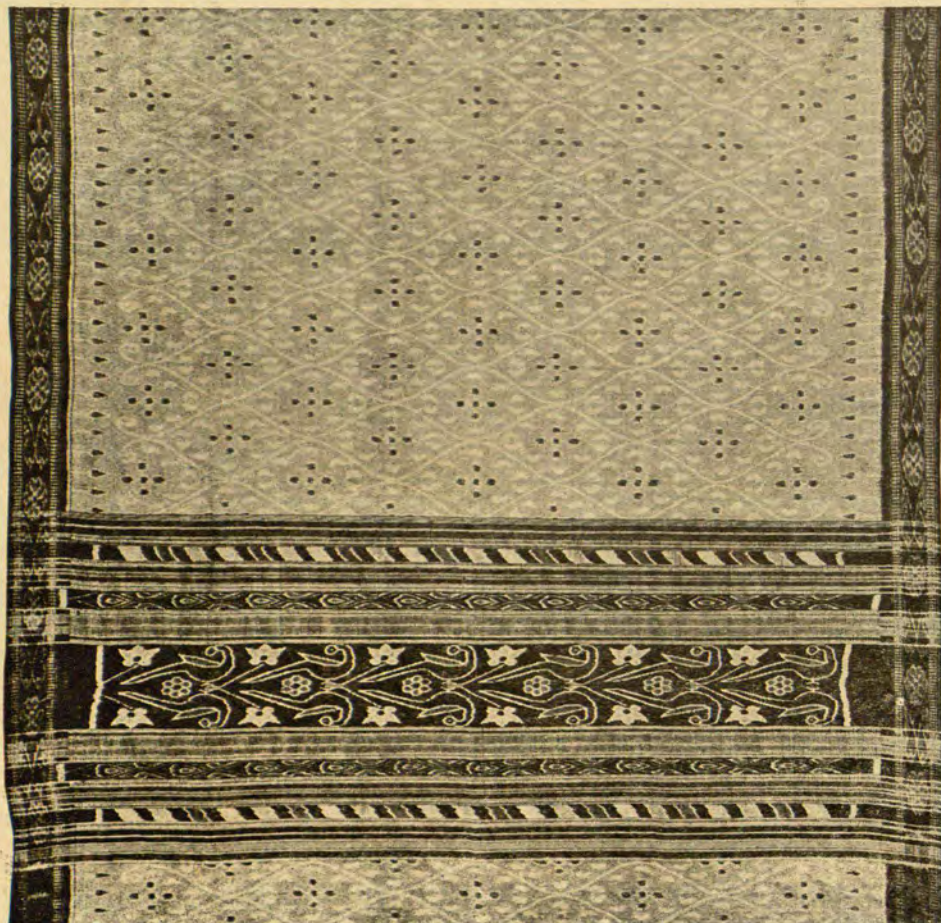


Plate 51 △
Silk Hati saree,
Nuapatna, 1973.
No. 2434

◁ Plate 52
Silk saree.
Nuapatna, 1973.
No. 2436

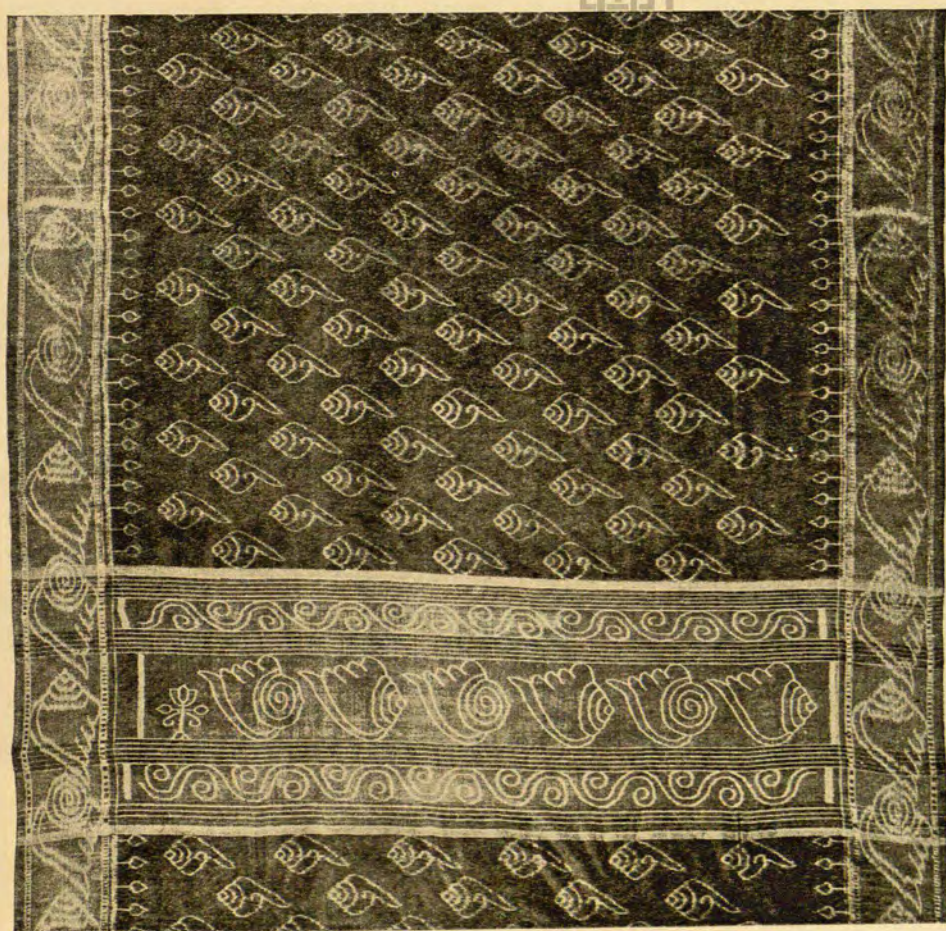
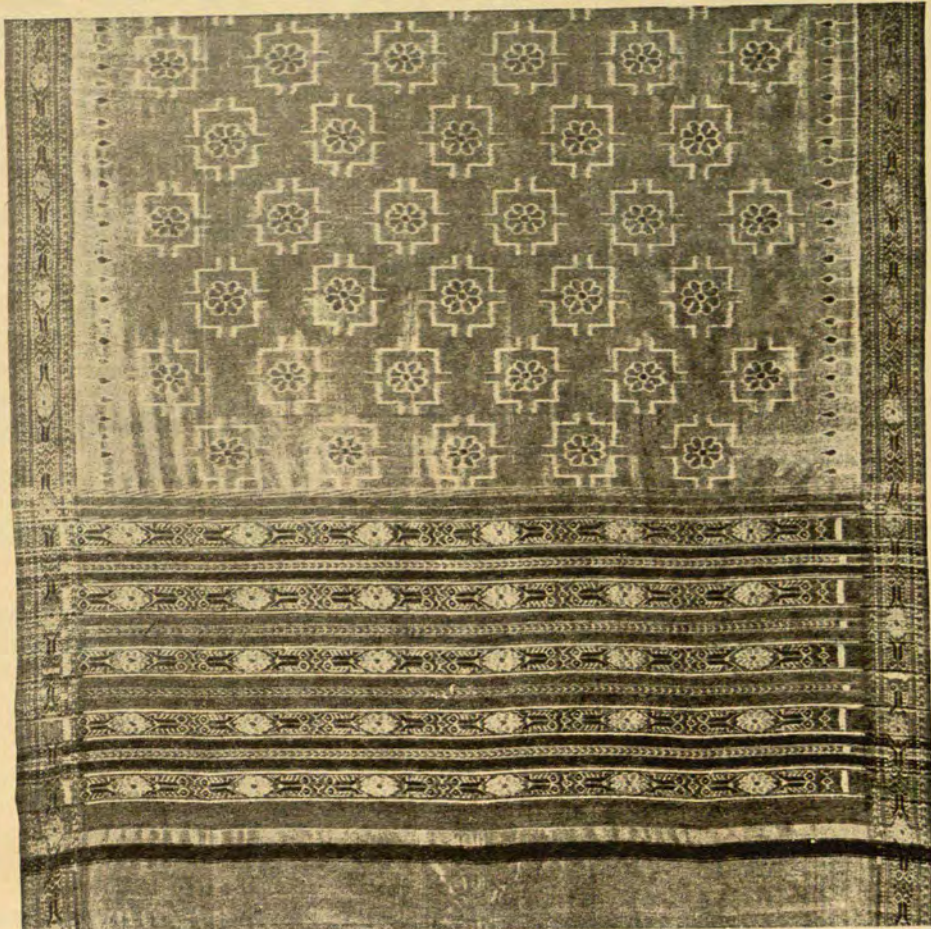


◁ Plate 53
Silk Chungudiadali
saree,
Nuapatna, 1973.
No. 2429



Plate 54 ▷
Silk Ganthiadali saree,
Nuapatna, 1973.
No. 2430

Plate 55 ▷
Silk Kunjiphulabedi
saree, Nuapatna, 1973.
No. 2431



◁ Plate 56
Silk Sankha saree,
Nuapatna, 1973.
No. 2437



Plate 57

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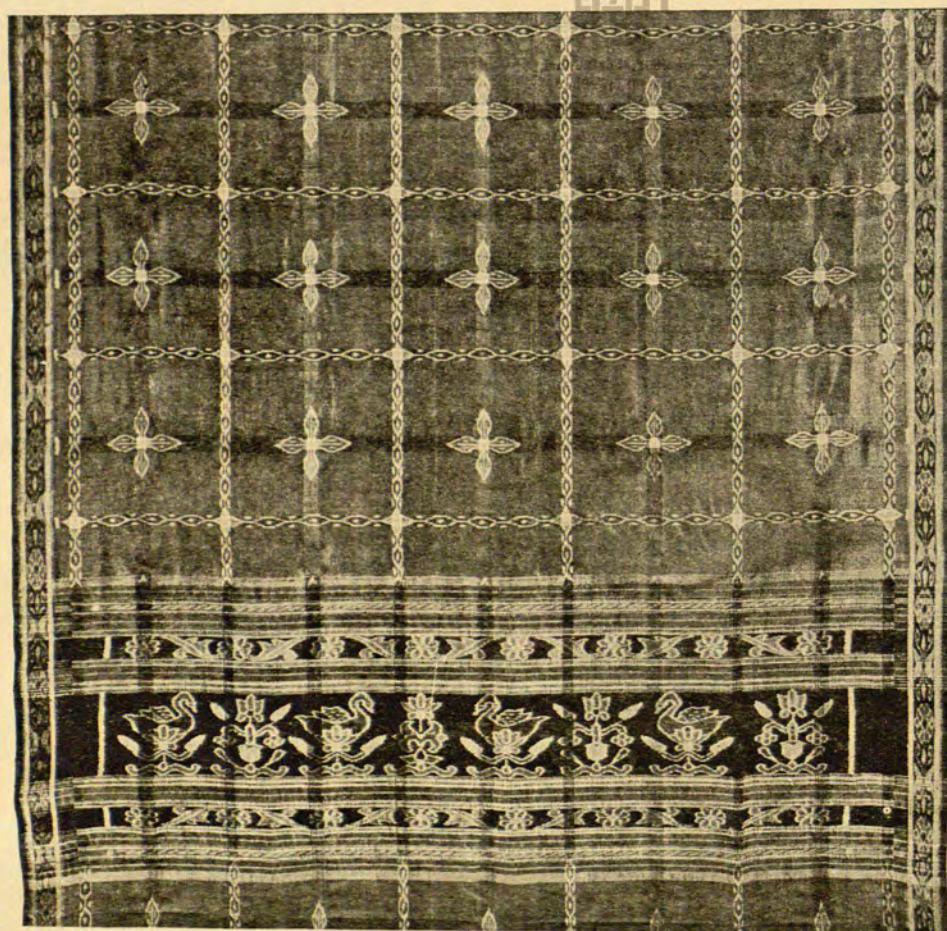


Plate 57
Silk Dipavali saree,
Nuapatna, 1973.
No. 2425

Plate 58
Silk Chowka saree,
Nuapatna, 1973.
No. 2433

Plate 59
Tassar bandha saree,
Nuapatna, 1973.
No. 2426

Plate 60
Cotton Khandua saree,
Muktanagar, 1973.
No. 2473



Plate 59

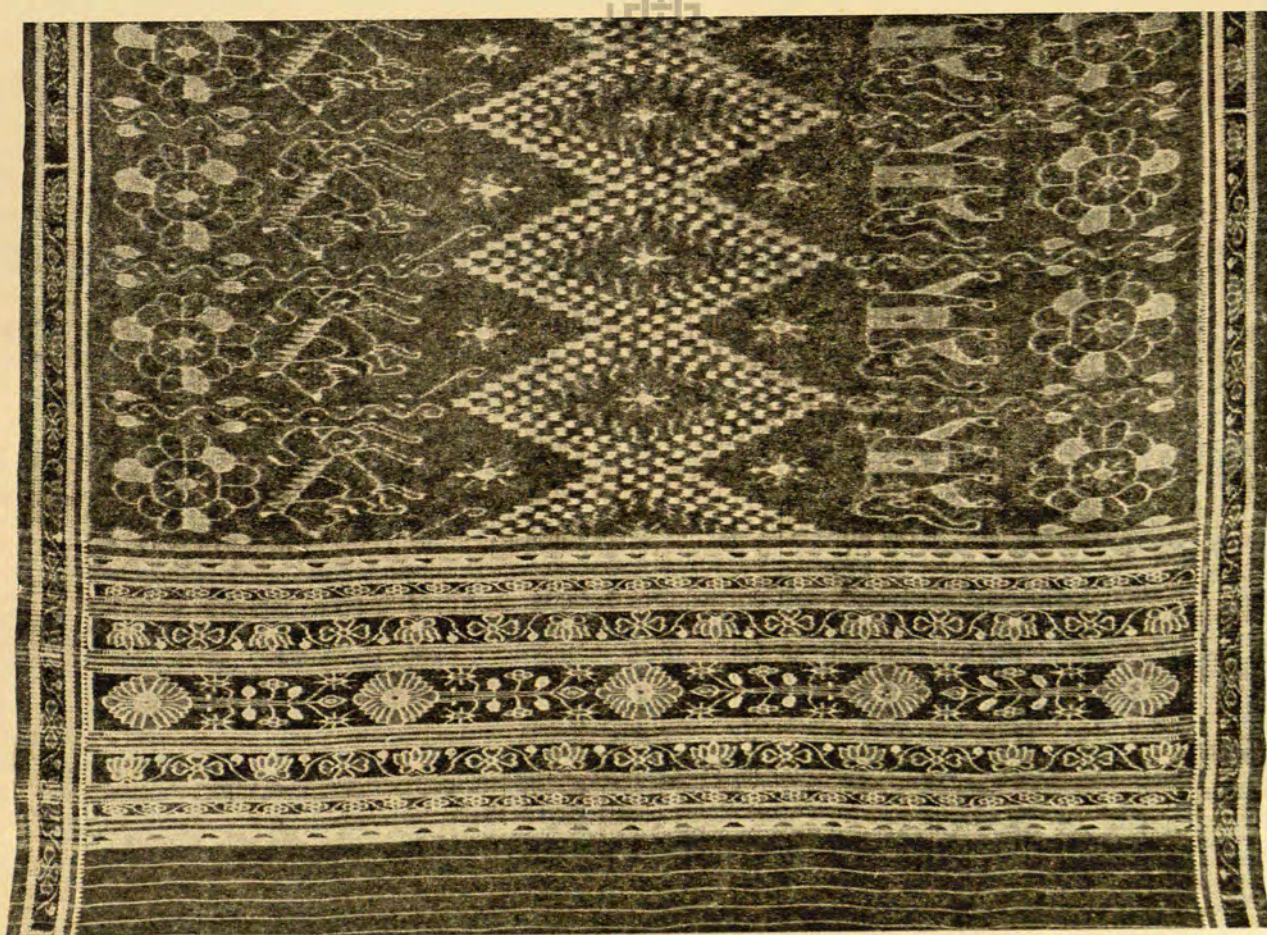


Plate 60

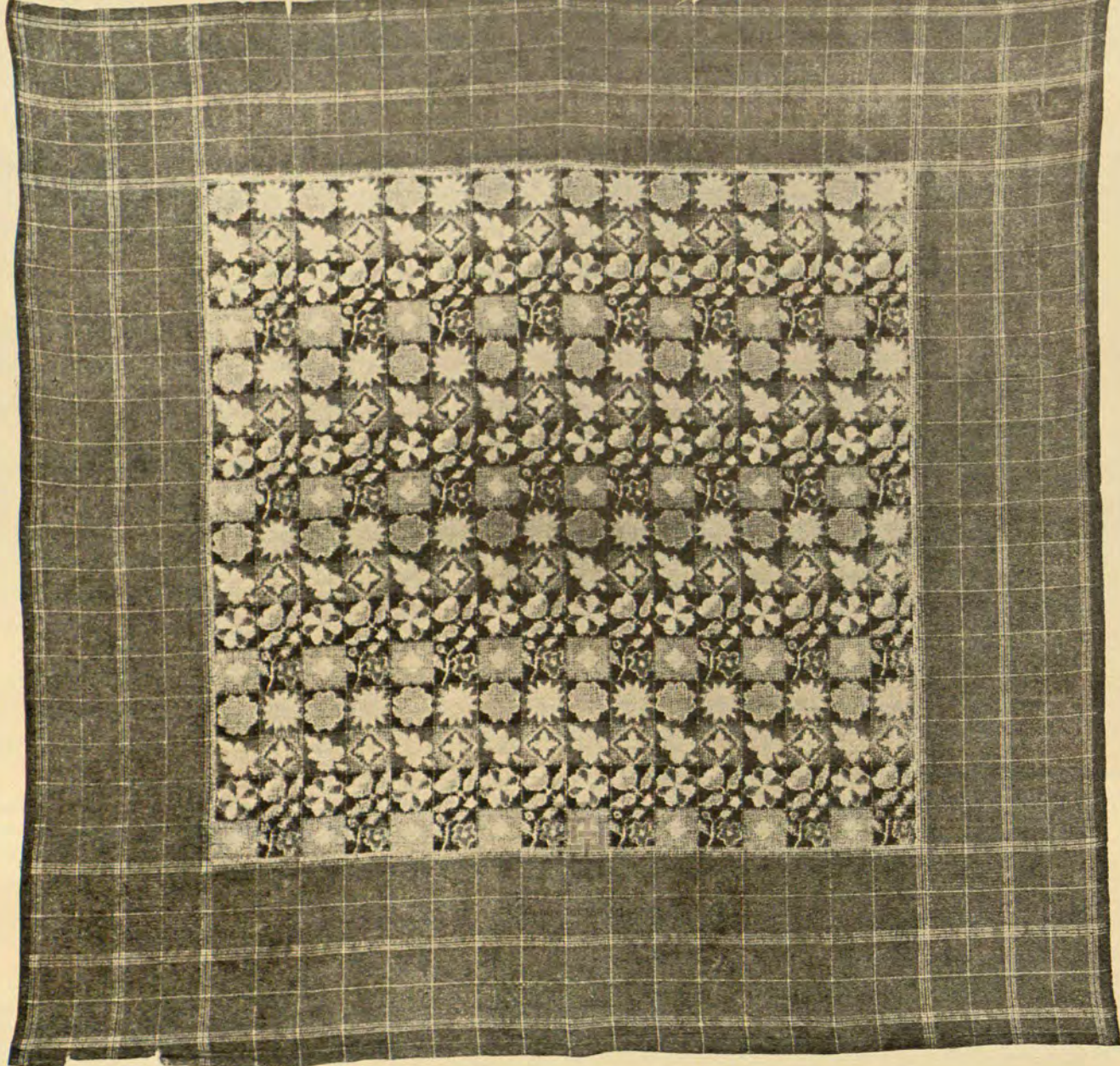


Plate 61

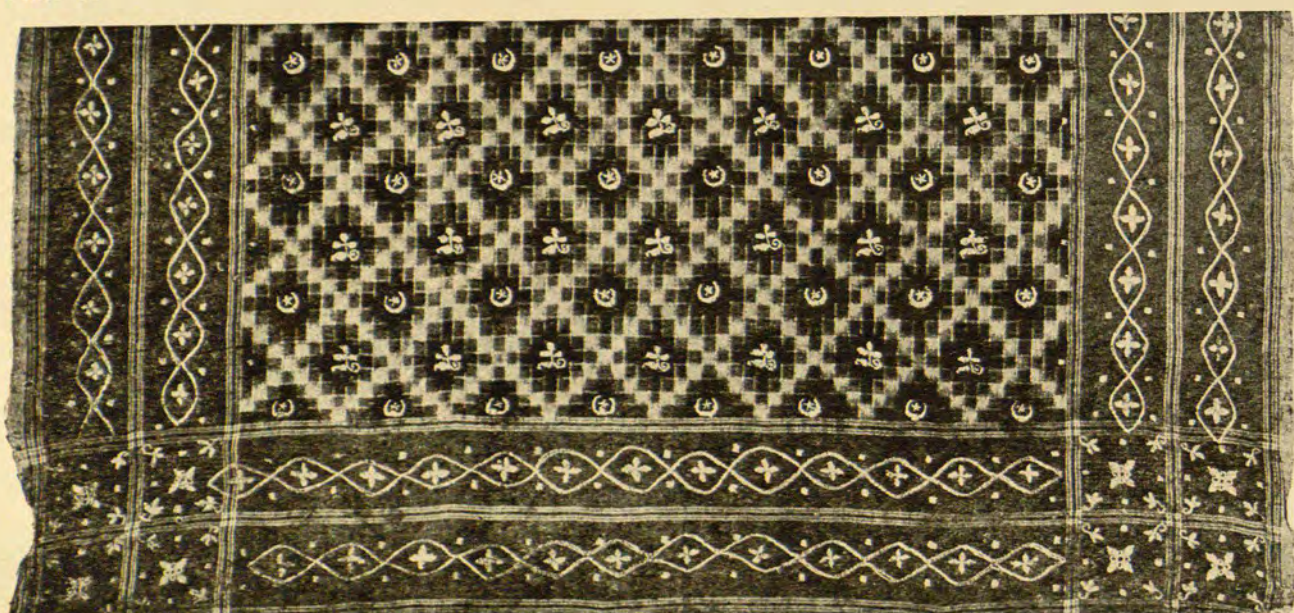


Plate 62

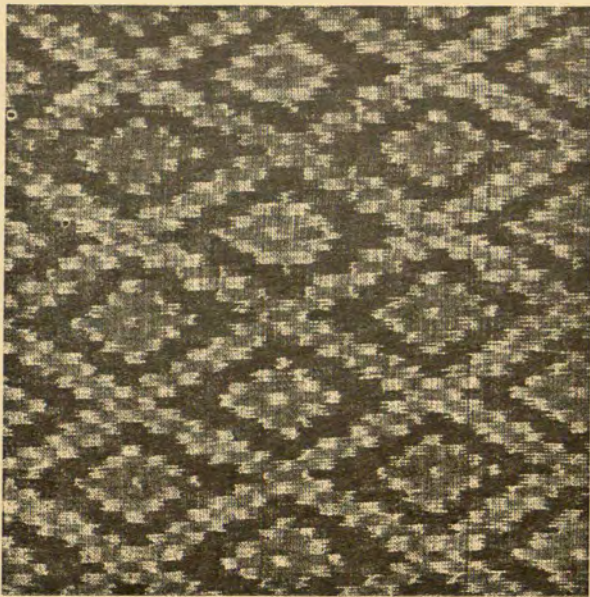


Plate 63

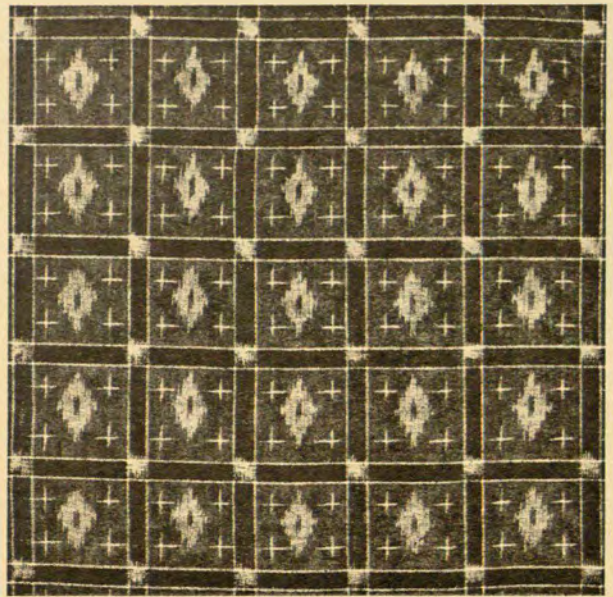


Plate 64



Plate 65

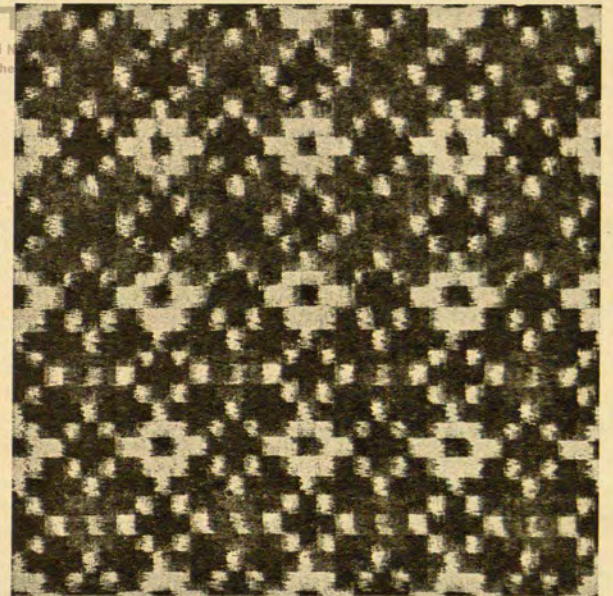


Plate 66

Plate 61 : Cotton Telia rumal (chowka), Chirala 1973 (woven in Ca. 1930). No. 2461

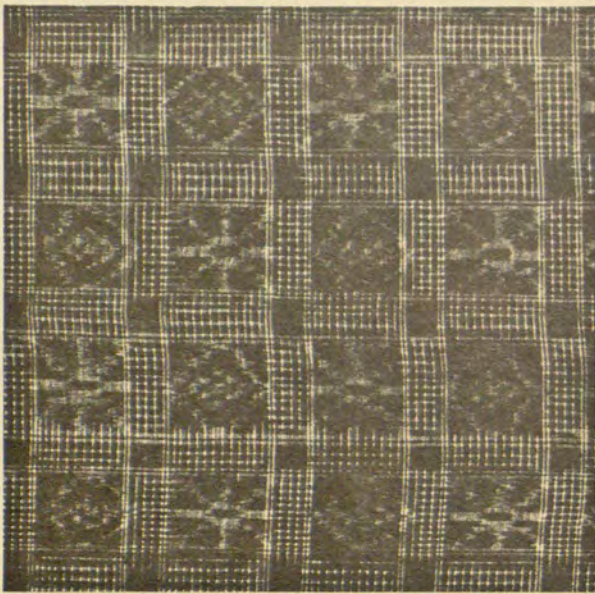
Plate 62 : Cotton Dopatta saree (coarse), Hyderabad, 1973 (woven in Ca. 1900 A.D.) No. 2462

Plate 63 : Cotton Pakachekram laider rumal, Pochampalli. Ca. 1950 A.D. No. 568

Plate 64 : Cotton Nilu paka batani rumal. Pochampalli, Ca. 1950 A.D. No. 571

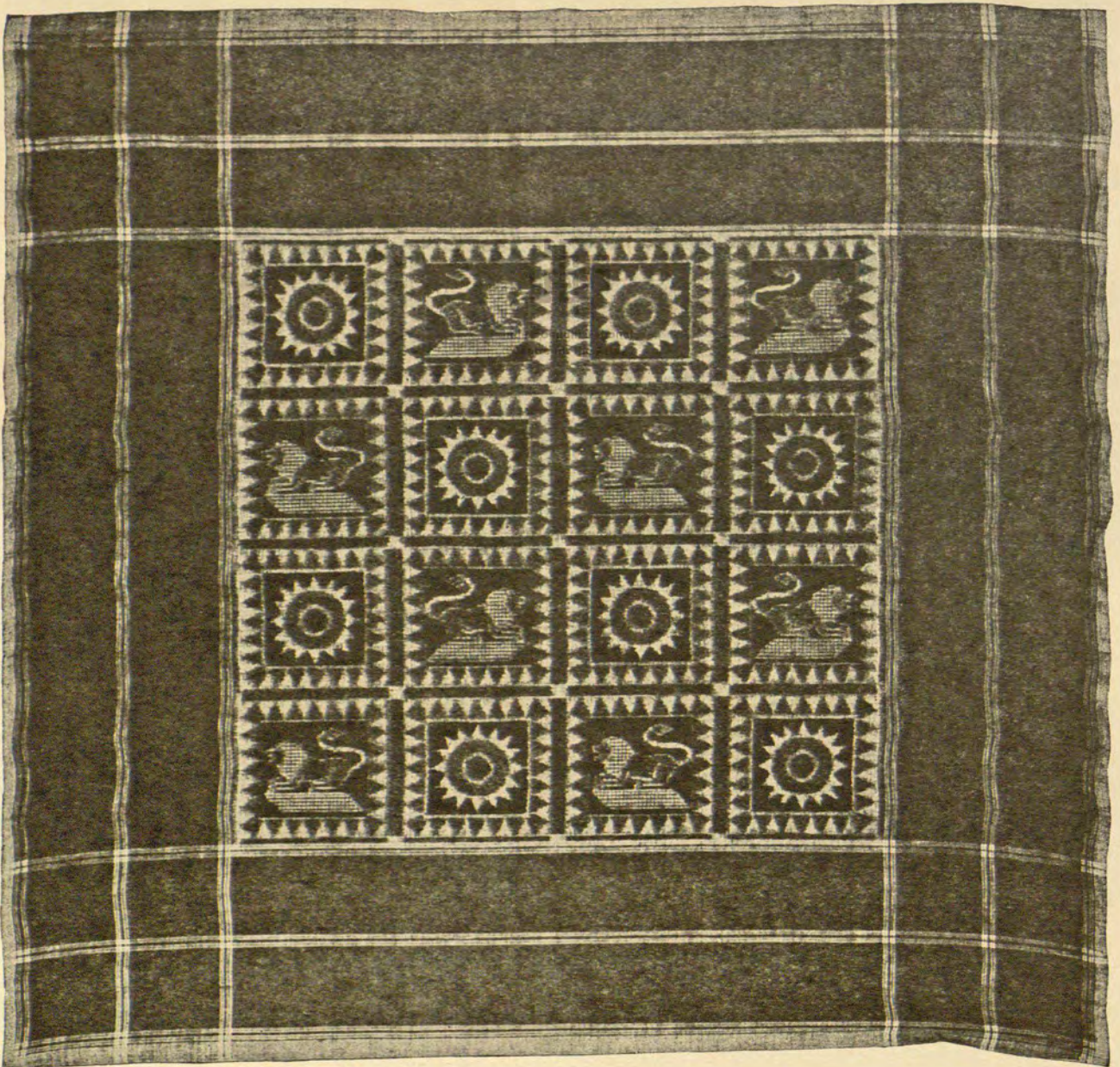
Plate 65 : Cotton Peddapadgu rumal, Pochampalli, Ca. 1950 A.D. No. 575

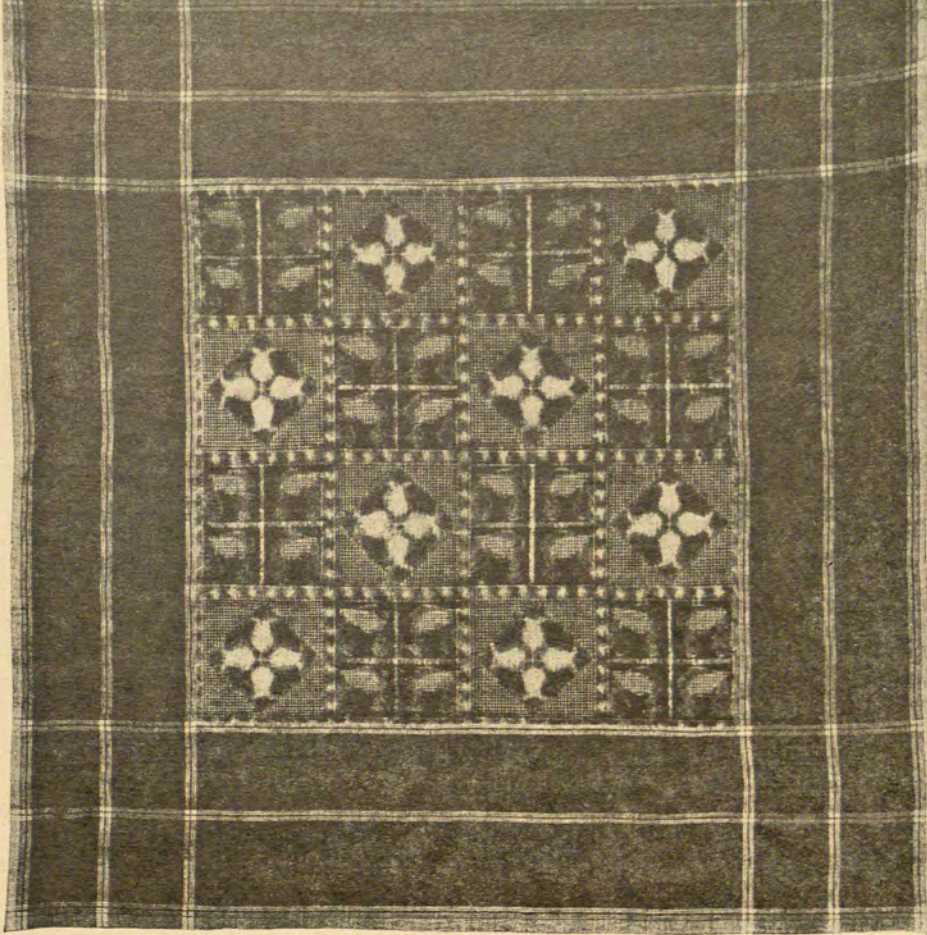
Plate 66 : Cotton Pagdu bandhu rumal, Pochampalli, Ca. 1950 A.D. No. 576



◁ Plate 67
Cotton Tanbel burra rumal,
Pochampalli, Ca. 1950 A. D. No. 577

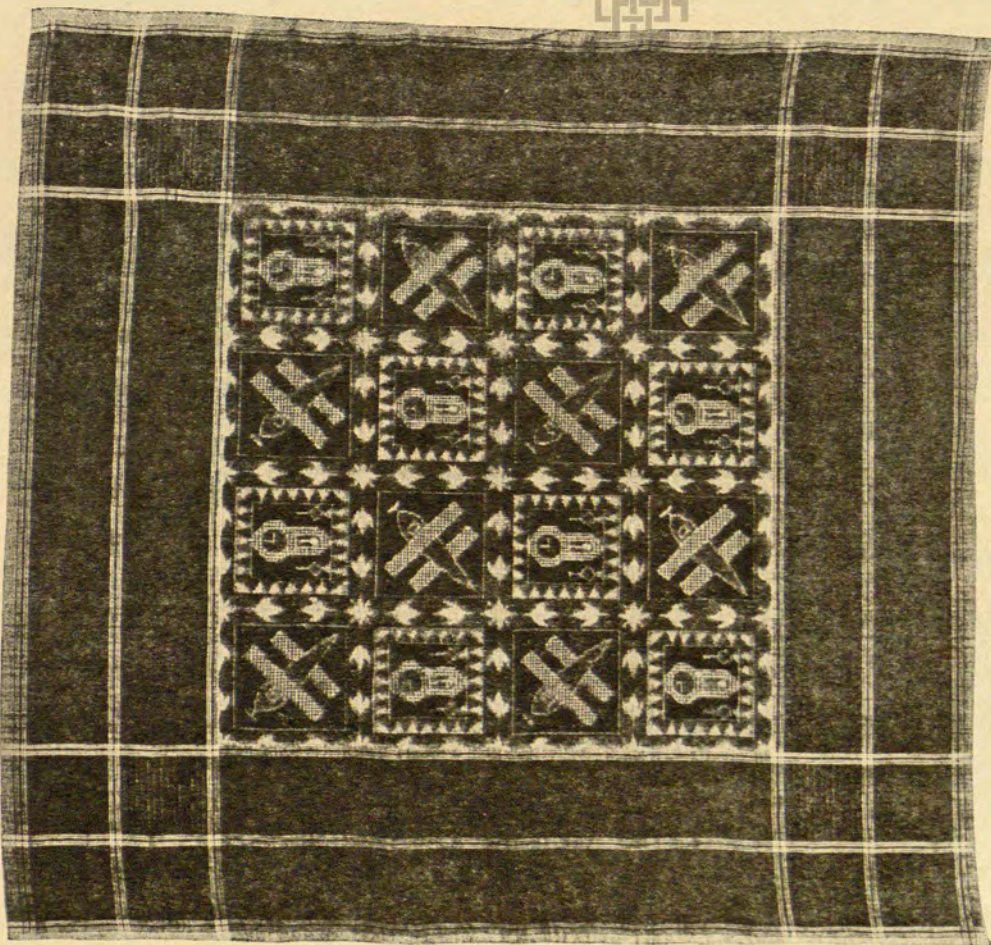
Plate 68 ▽
Cotton Telia rumal, Chirala, Ca. 1950 A. D. No. 615





◁ Plate 69
Cotton Telia rumal,
Chirala
Ca. 1950 A.D. No. 614

Plate 70 ▽
Cotton Telia rumal,
Chirala, Ca. 1950 A.D.
No. 611



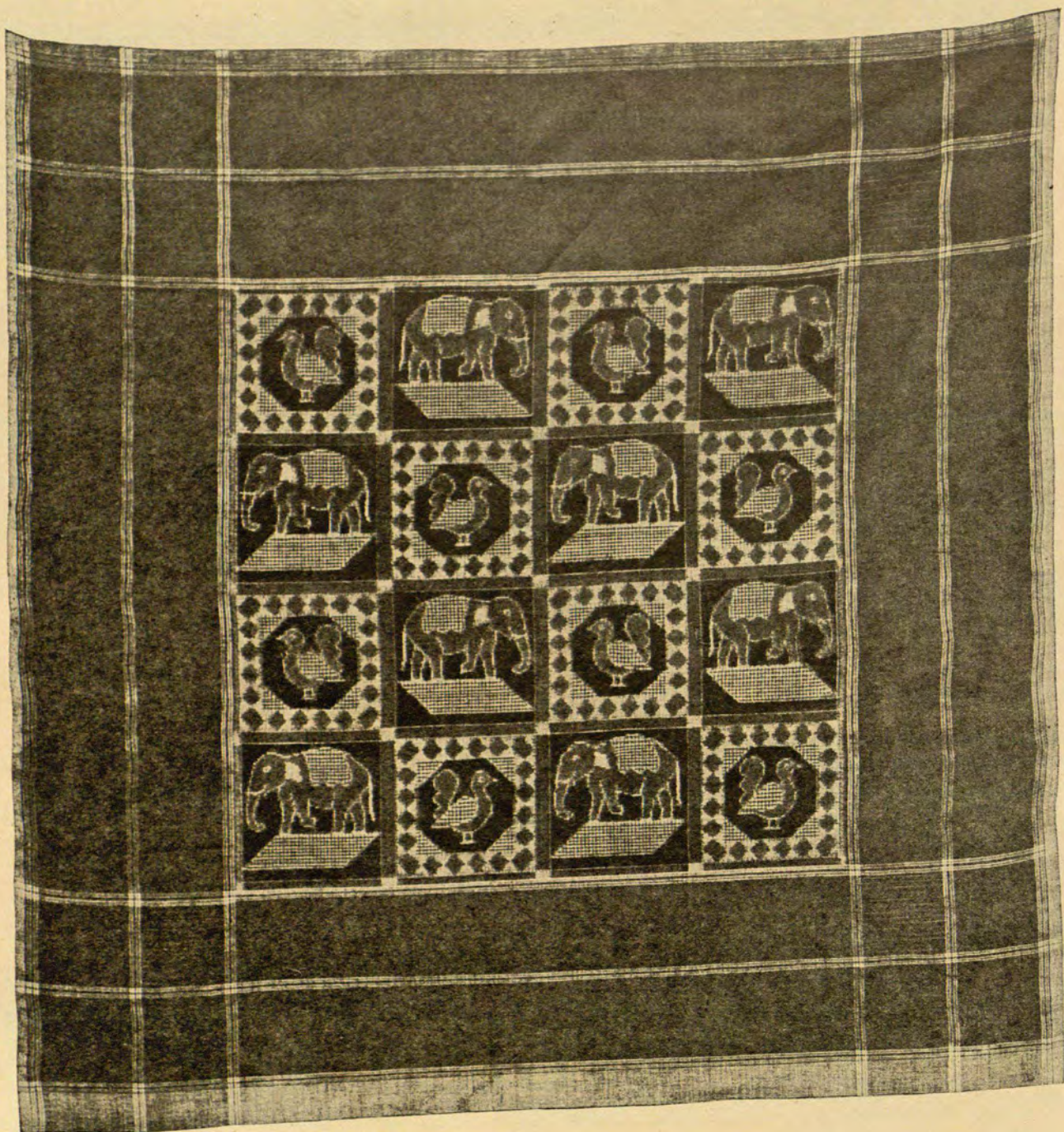


Plate 71 : Cotton Telia rumal, Chirala, Ca. 1950A.D. No. 613, $\triangle$
 Plate 72 : Cotton Telia rumal (Chowka), Chirala, 1973. No. 2458
 Plate 73 : Cotton Telia rumal (Chowka), Chirala, 1973. No. 2459

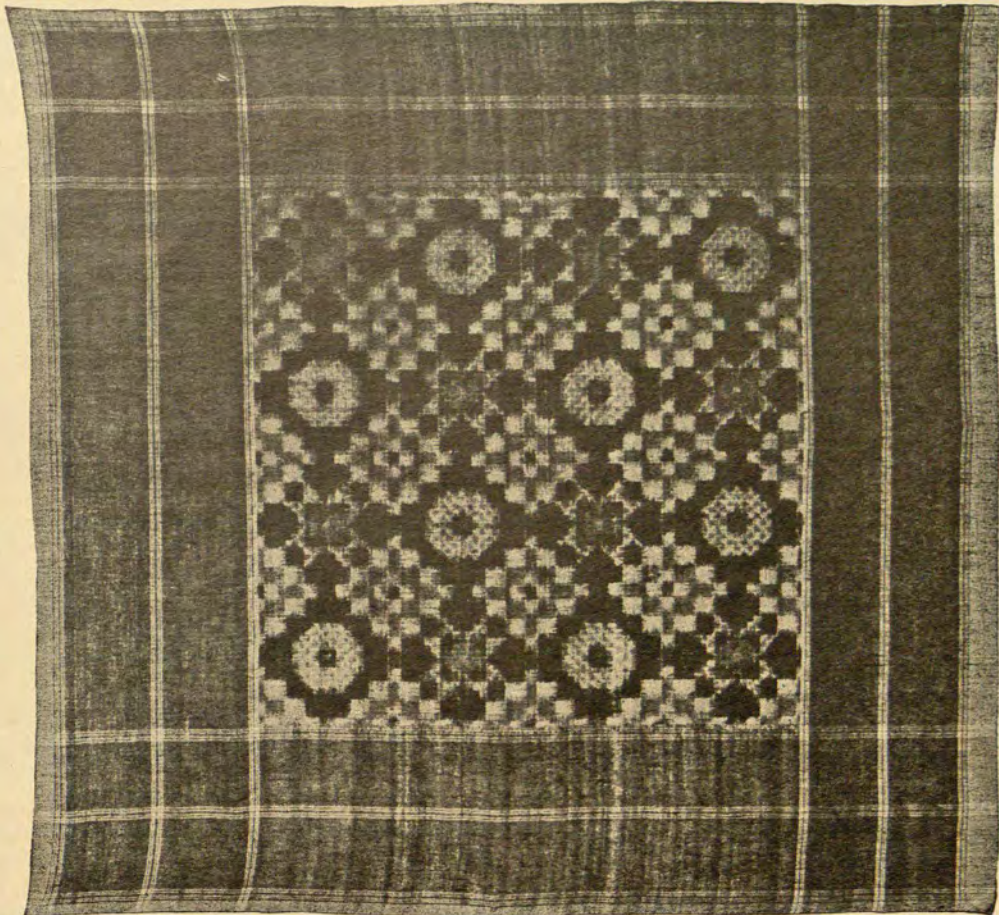


Plate 72



Plate 73

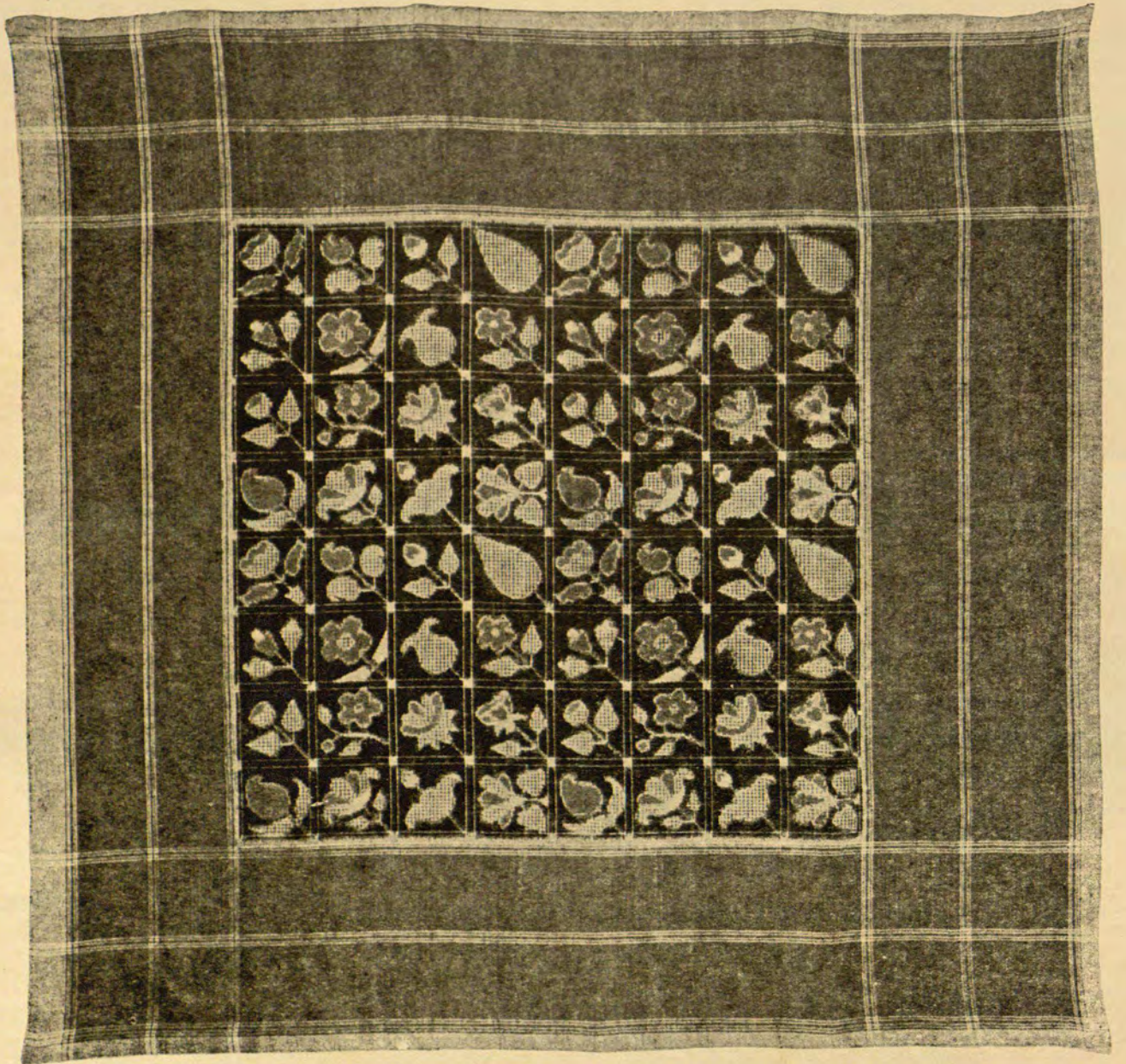
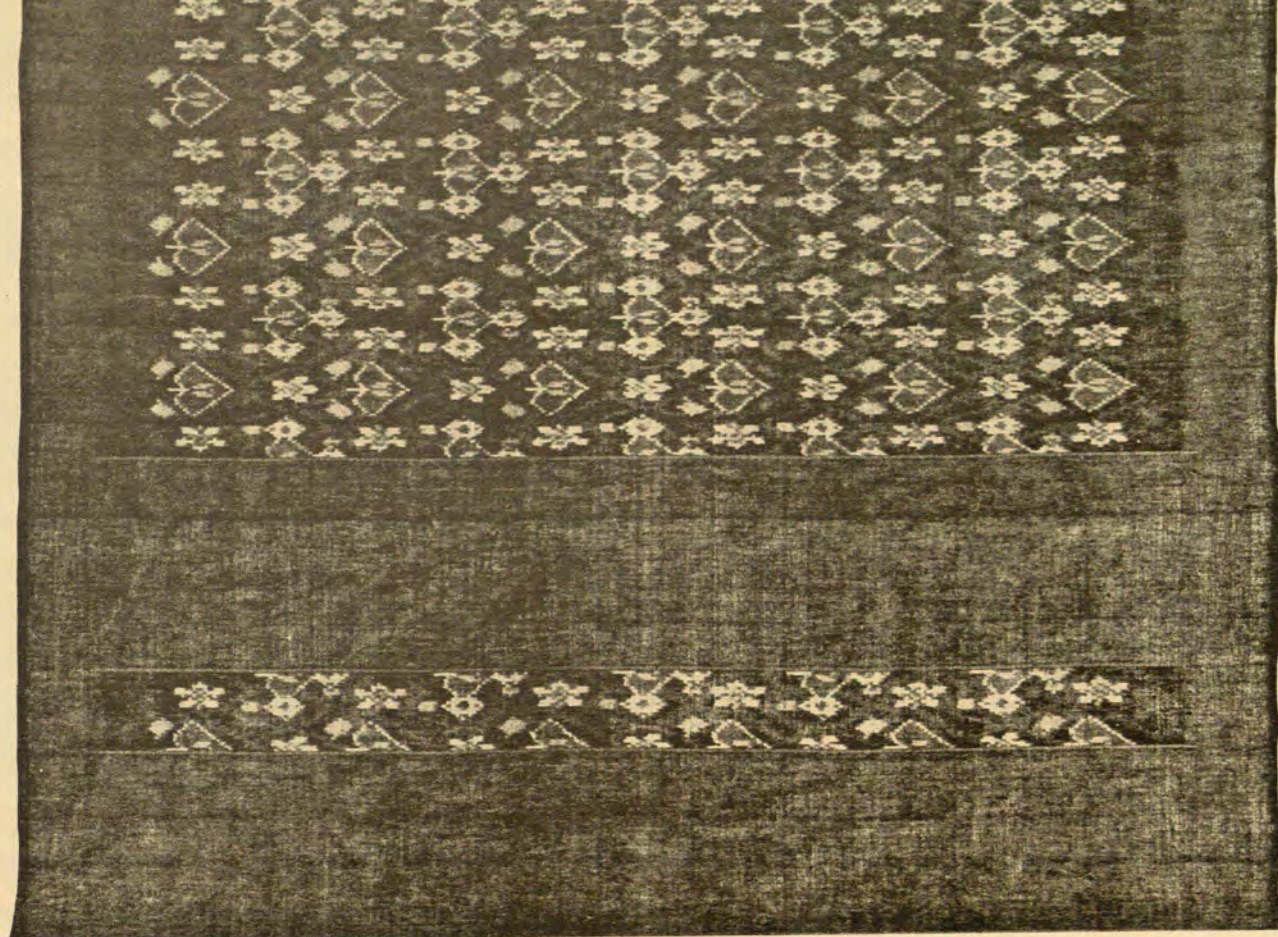


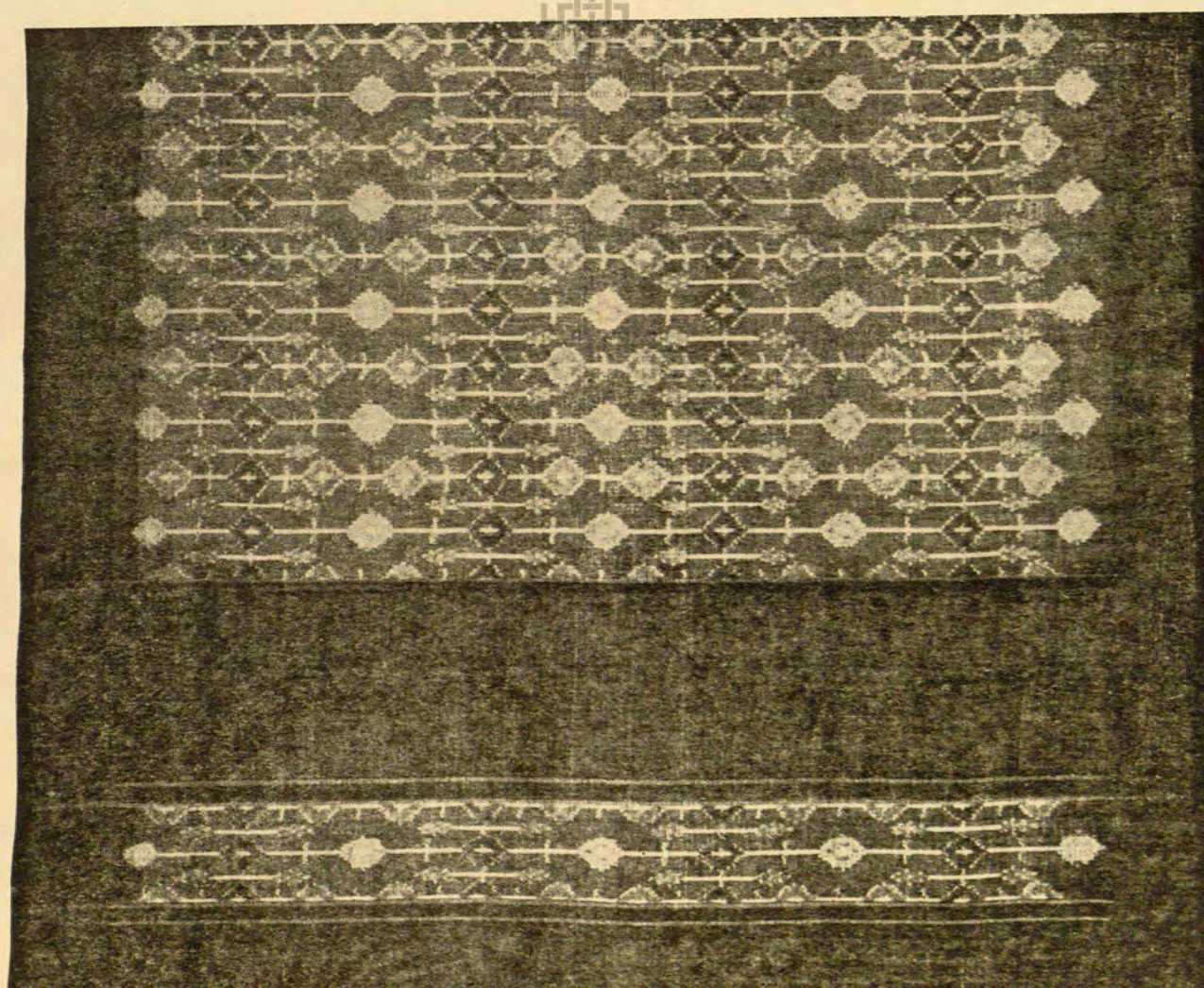
Plate 74 : Cotton Telia rumal (chowka), Chirala, 1973. No. 2460 △

Plate 75 : Cotton Gunj saree, Pochampalli, 1973. No. 2469 (above right)

Plate 76 : Cotton Koyateega saree, Pochampalli, 1973. No. 2471 (below right)



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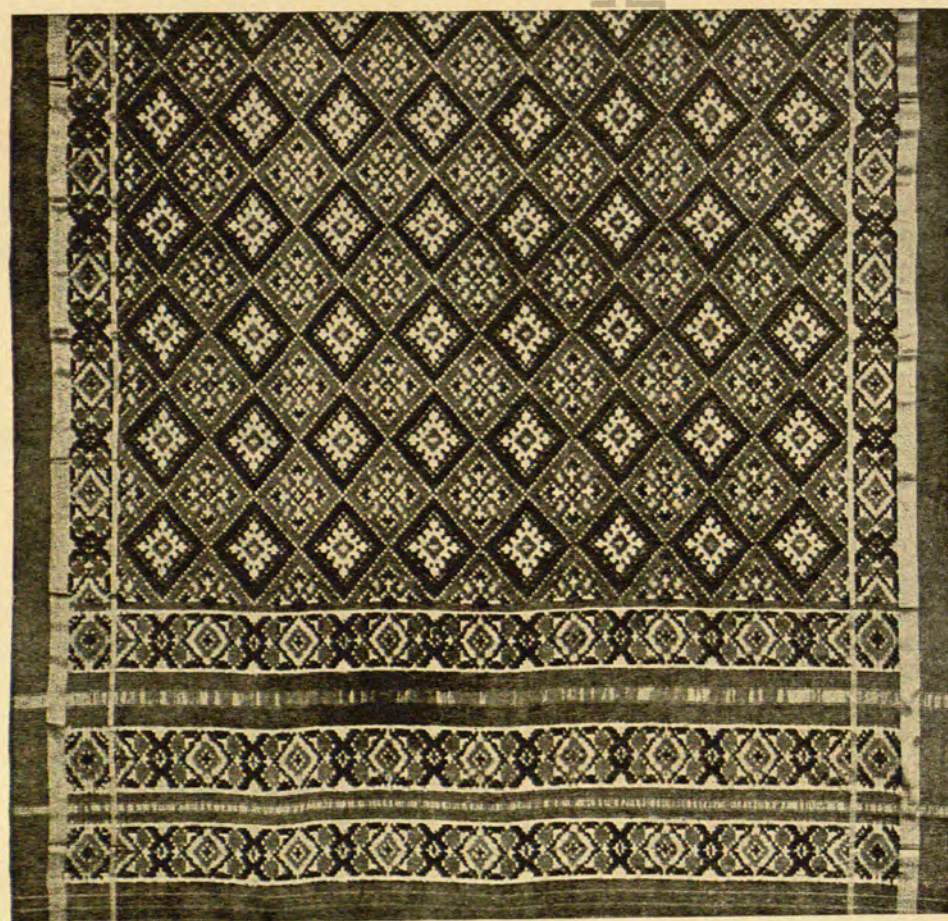
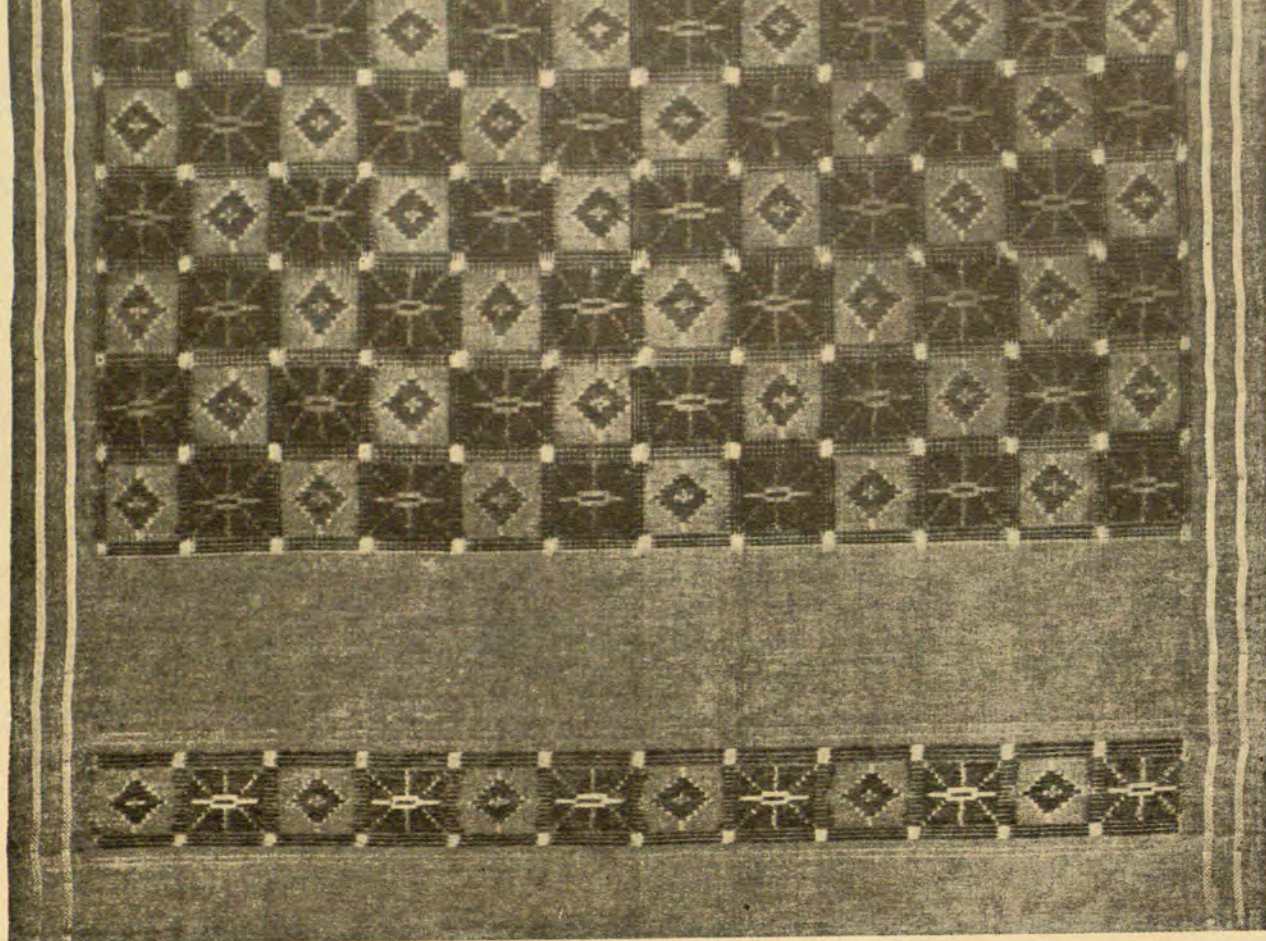
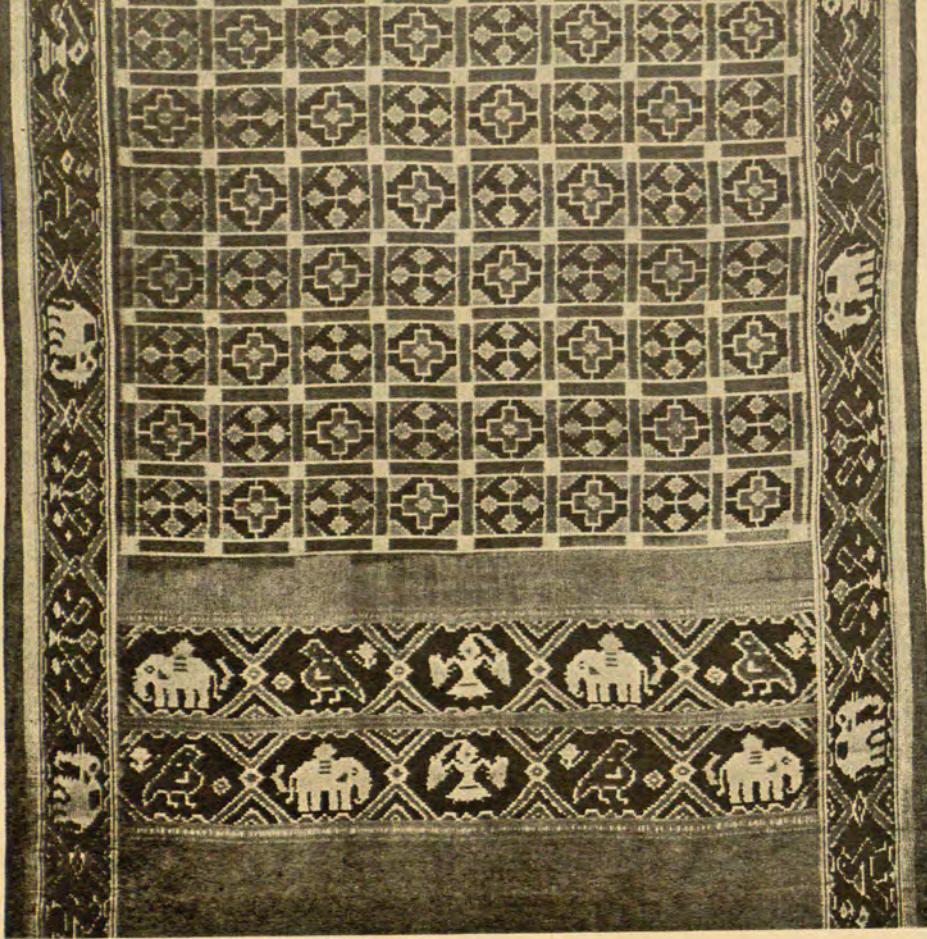


Plate 77 △
Cotton Tabelu
burra saree,
Pochampalli, 1973.
No. 2468

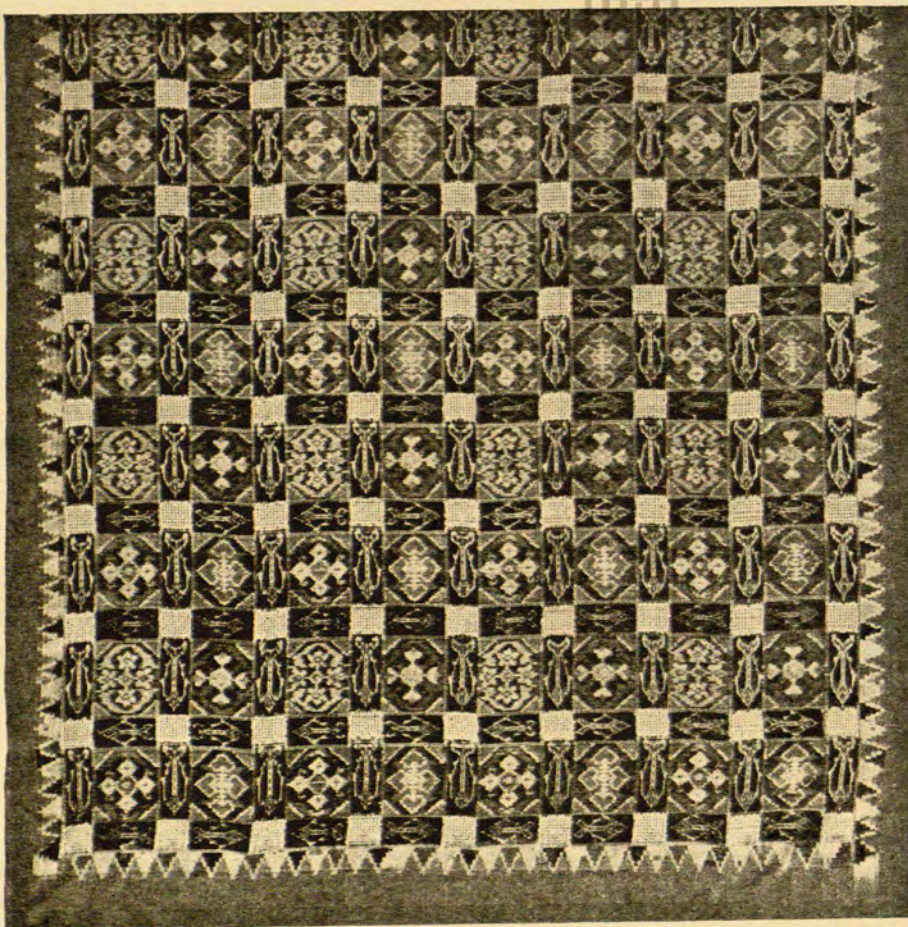
◁ Plate 78
Silk saree,
Pochampalli, 1973.
No. 2463,



Plate 79 : Silk Karabby saree, Pochampalli, 1973. No. 2466



◁ Plate 80
Silk Jaggubatani saree,
Pochampalli, 1973.
No. 2467



◁ Plate 81
Silk Fish Chowkdy saree
Pochampalli, 1973.
No. 2464

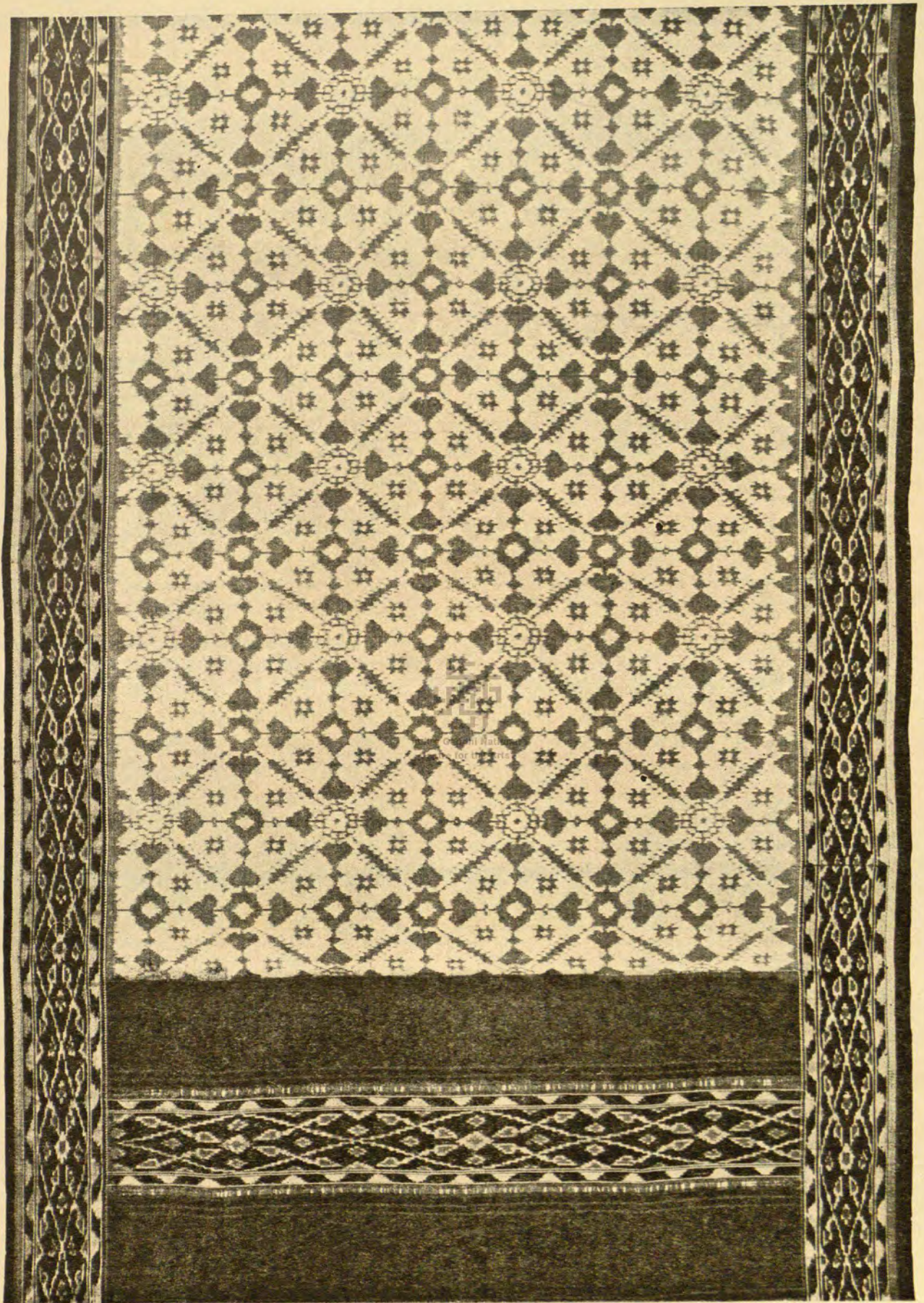


Plate 82 : Silk Pan patola saree Pochampalli, 1973. No. 2465



Plate 83



Plate 84

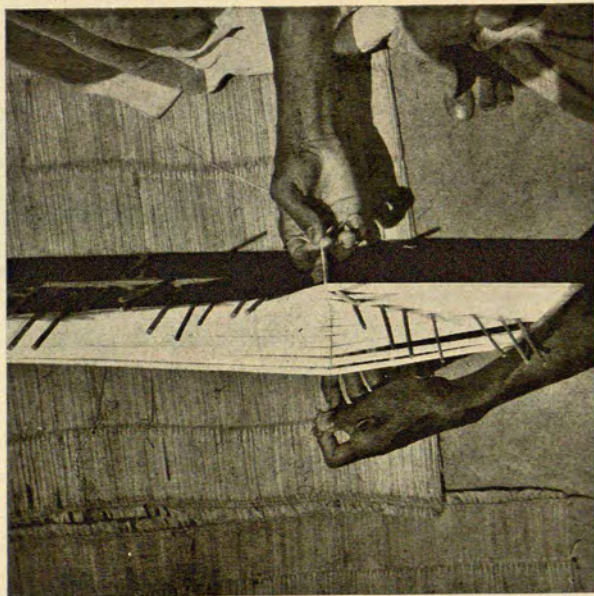


Plate 85

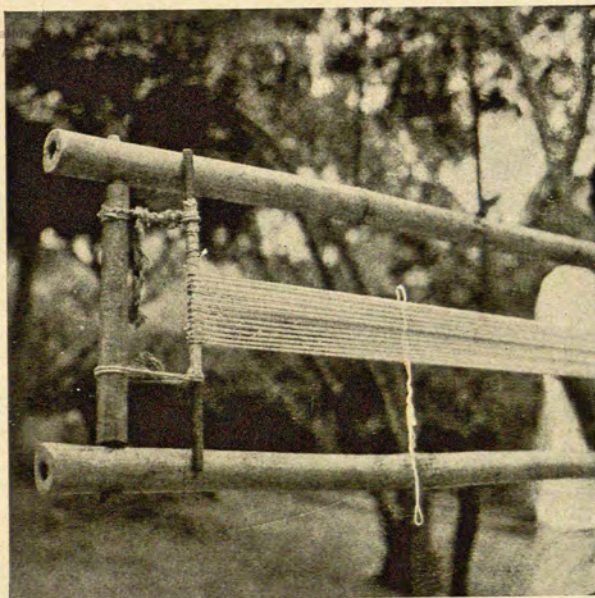


Plate 85 A

Plate 83 : Unwinding yarn, hank to latai, Village Tope, Bargarh area.
 Plate 84 : Preparation of weft and leasing, Village Tope, Bargarh area.
 Plate 85 : Lease of yarn for tying weft, Village Tope, Bargarh area.
 Plate 85A : Lease of yarn for tying weft, Village Tope, Bargarh area.



Plate 86 ▷
Preparation of warp,
Village Tope, Bargarh area.

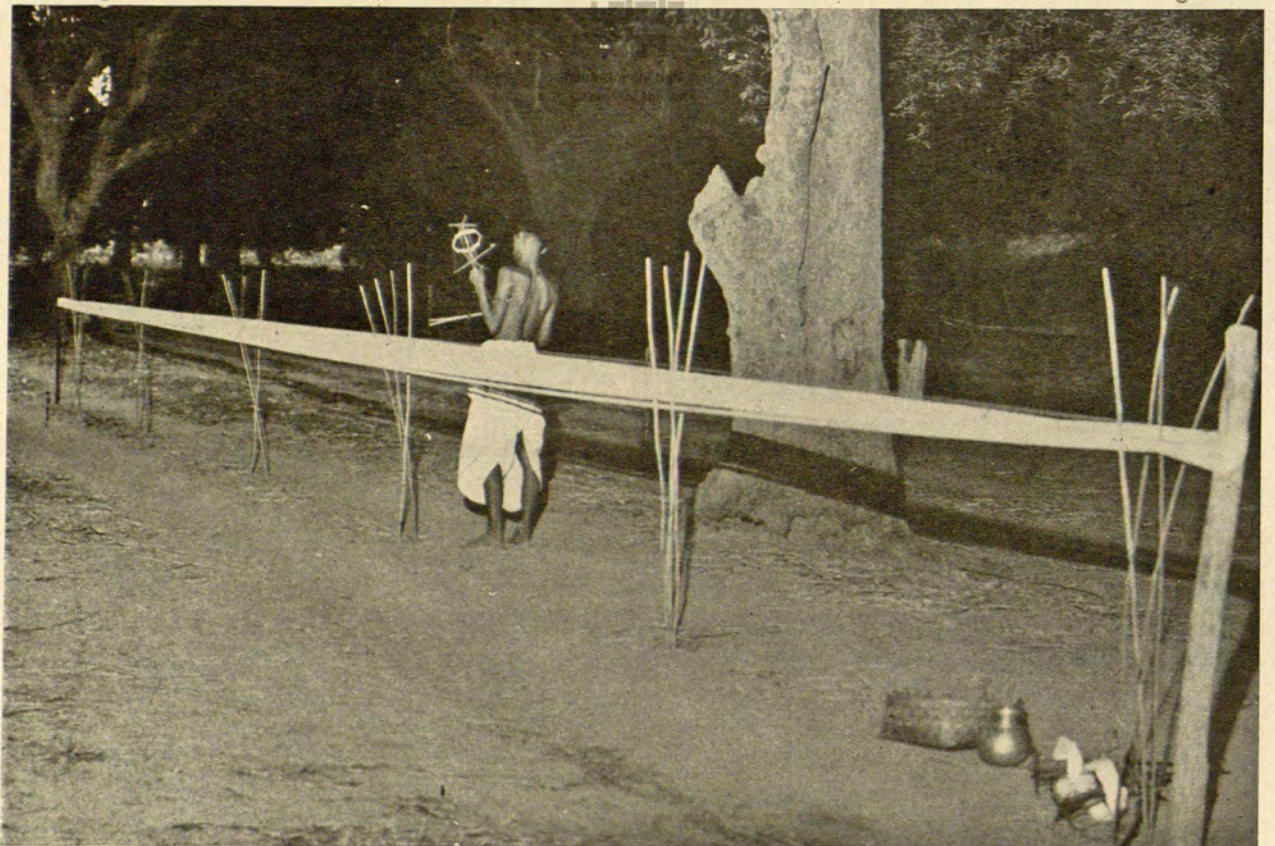


Plate 87 : Preparation of warp, Village Nuapatna. △

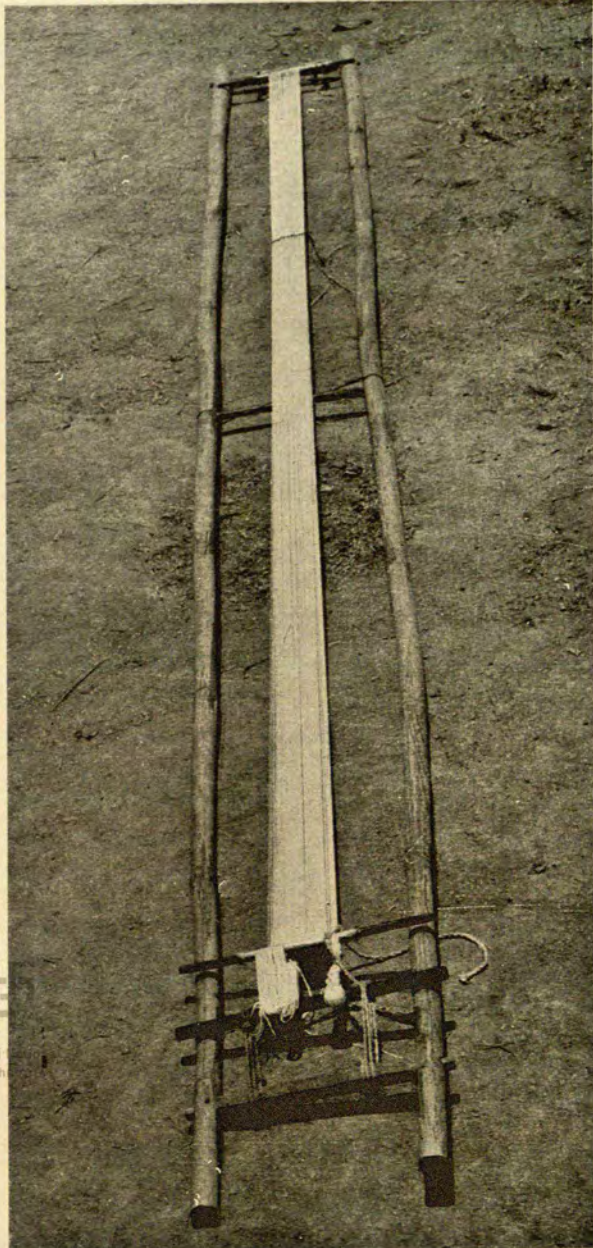
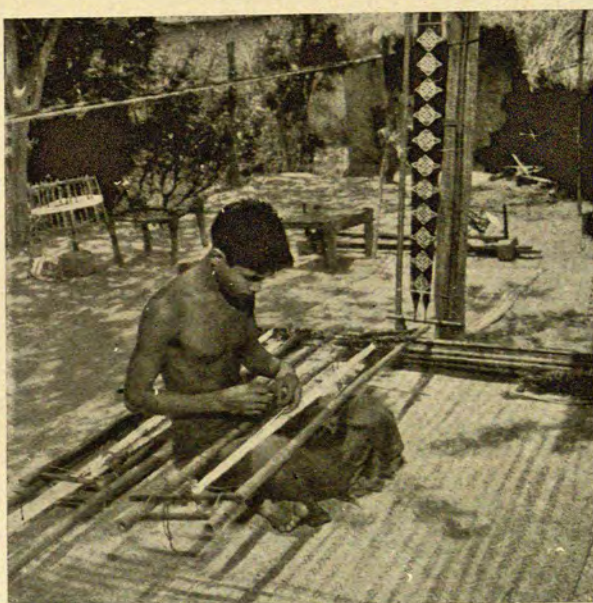


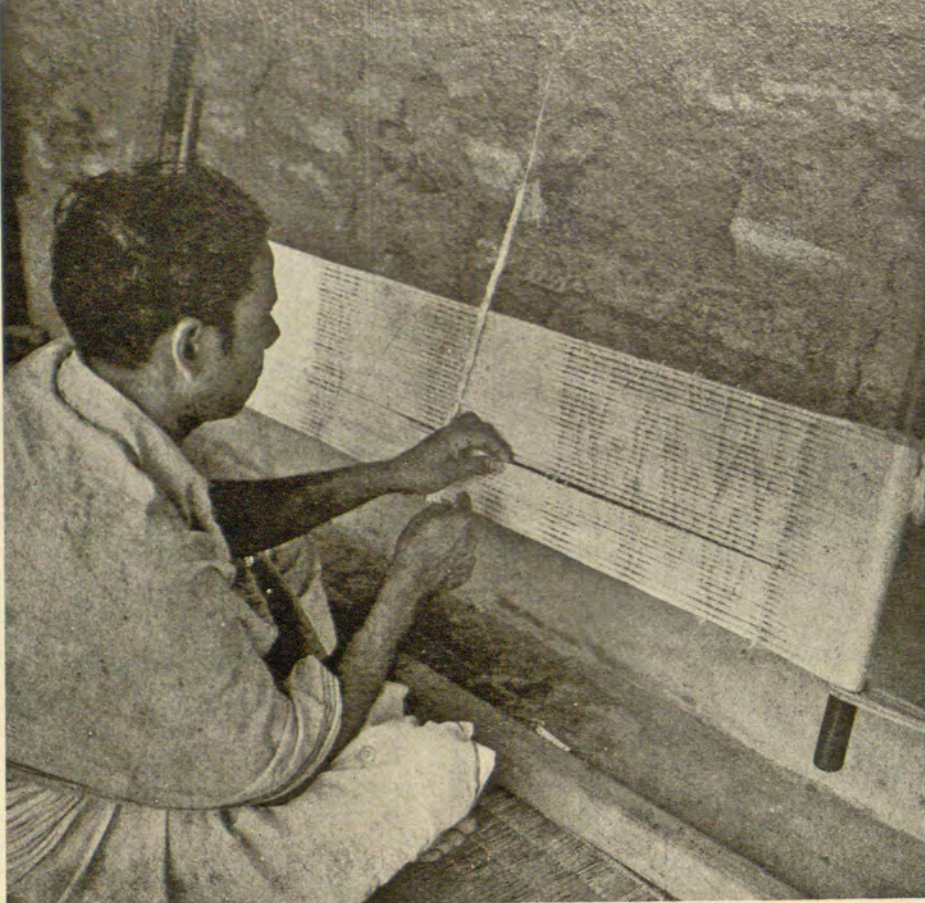
Plate 88 (above Left)
Setting right lease of warp before folding,
Village Tope, Bargarh area.

Plate 89 (below Left)
Folding of warp for tying, Village Tope,
Bargarh area.

Plate 90 (above right)
Folded warp for tying, Village Tope, Bargarh area.

Plate 91 (below right)
Tying of weft, Village Tope, Bargarh area.





◁ Plate 92
Tying of weft, Village
Muktanagar, Nuapatna area.

Plate 93
Tying of weft, Village
Muktanagar, Nuapatna area.

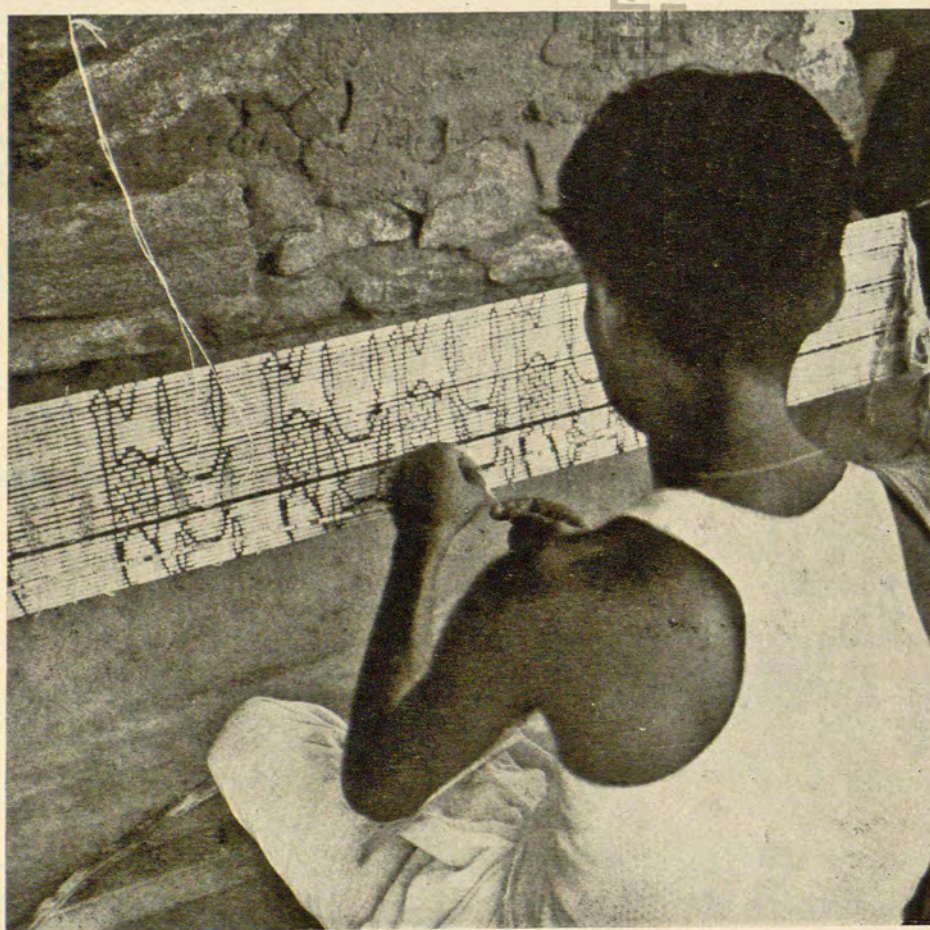


Plate 94 (facing page, above left)
Dyeing of tied yarn,
Village Nuapatna.

Plate 95 (facing page, above right)
Dyeing of tied yarn,
Village Nuapatna.

Plate 96 (facing page, below left)
Dyeing of tied yarn,
Village Nuapatna.

Plate 97 (facing page, below right)
Examining tied and
dyed yarn, Village
Nuapatna.

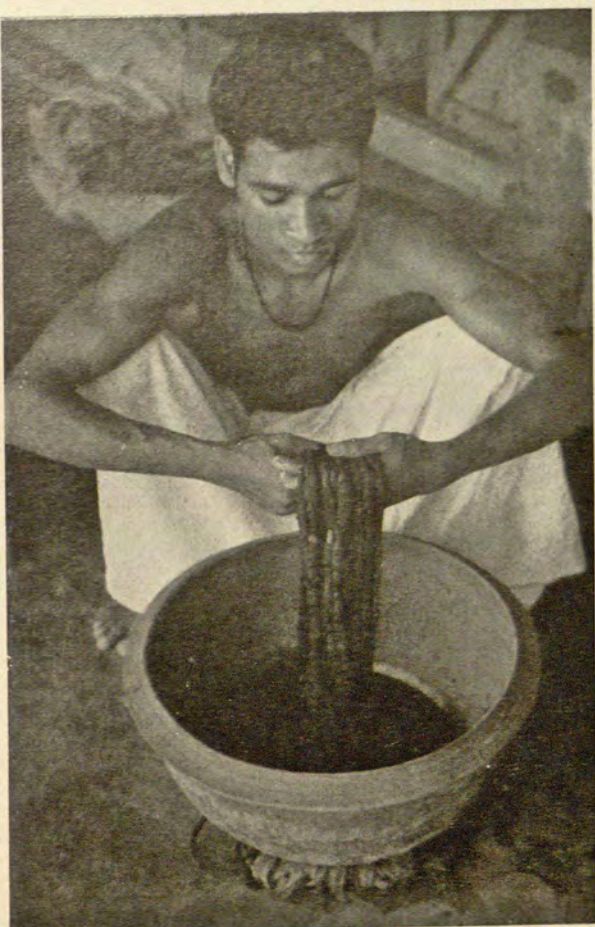


Plate 98▷
Use of hydroextractor
for drying of yarn,
Bargarh.

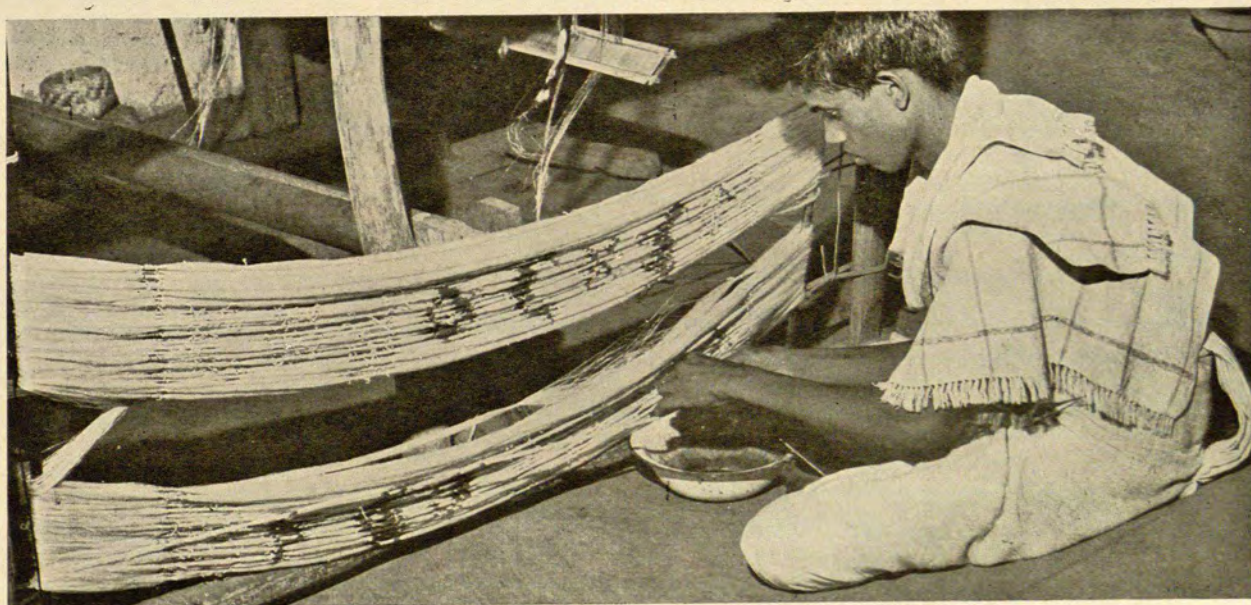
Plate 99
Dyeing of untied yarn,
Bargarh. ▽



Plate 100
Dyeing of untied yarn, Bargarh.

Plate 101 (below)
Drying of tied yarn, Village
Nuapatna.

Plate 102 (bottom)
Dyeing small spots by brush,
Village Nuapatna.



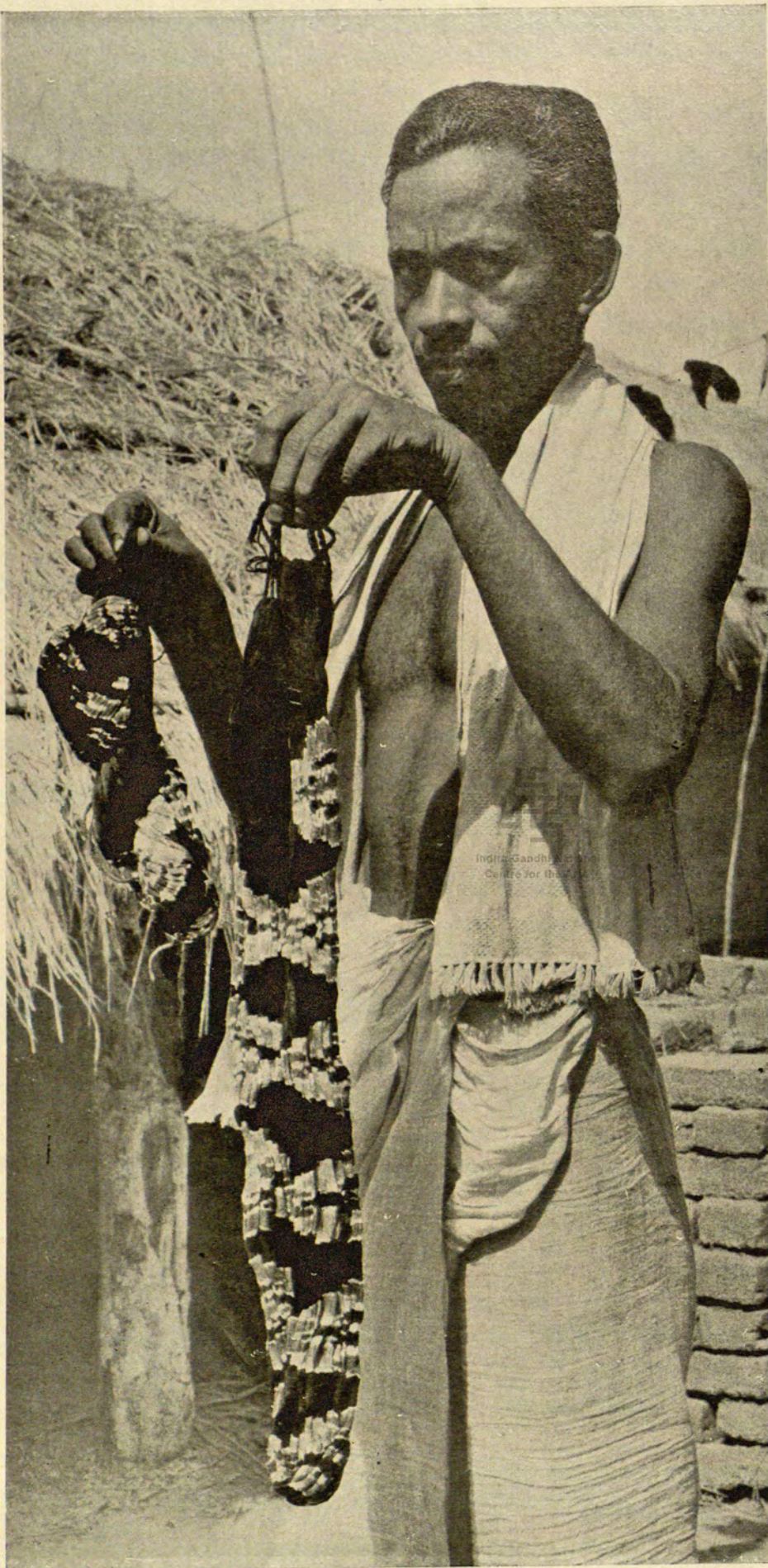


Plate 103
Tied and dyed yarn,
Village Tope, Bargarh area.

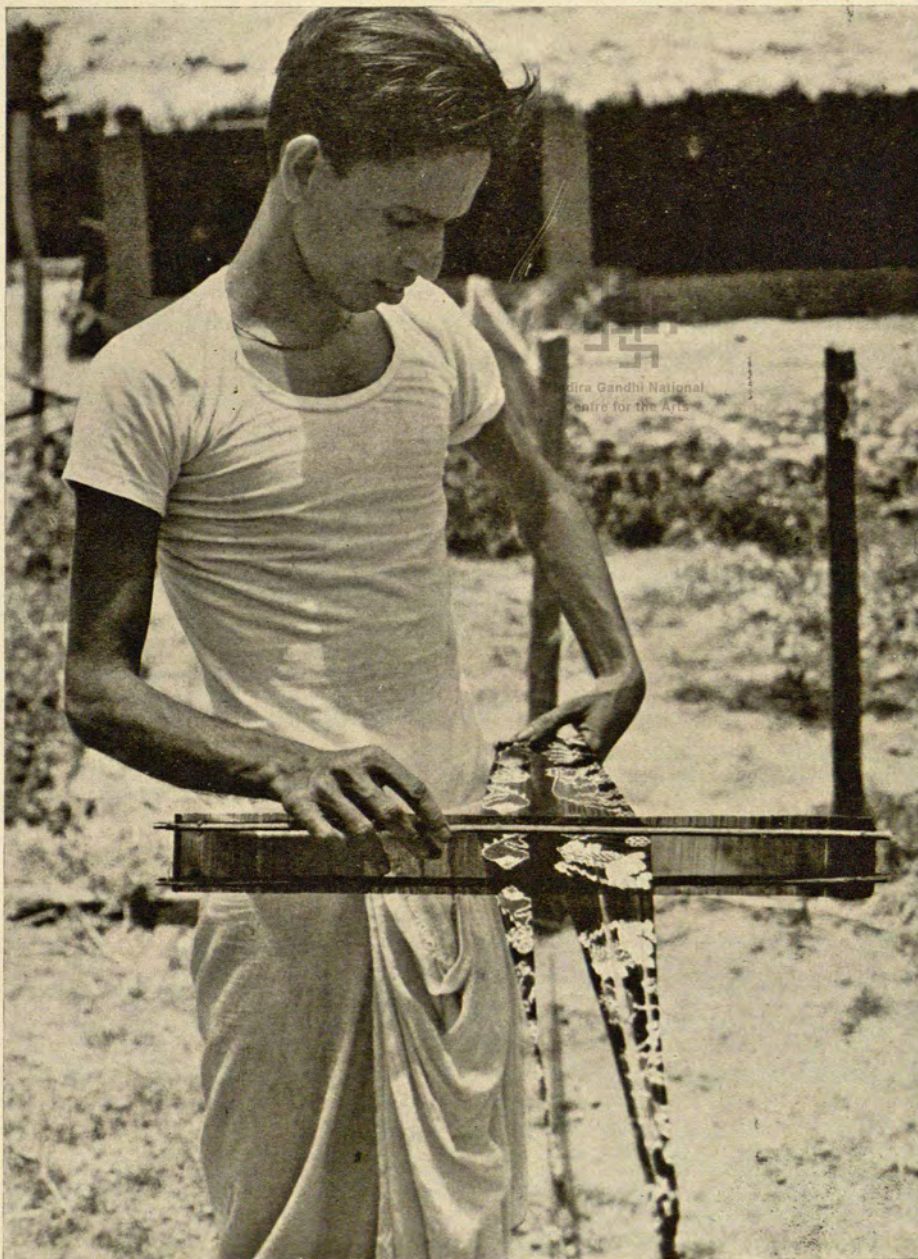
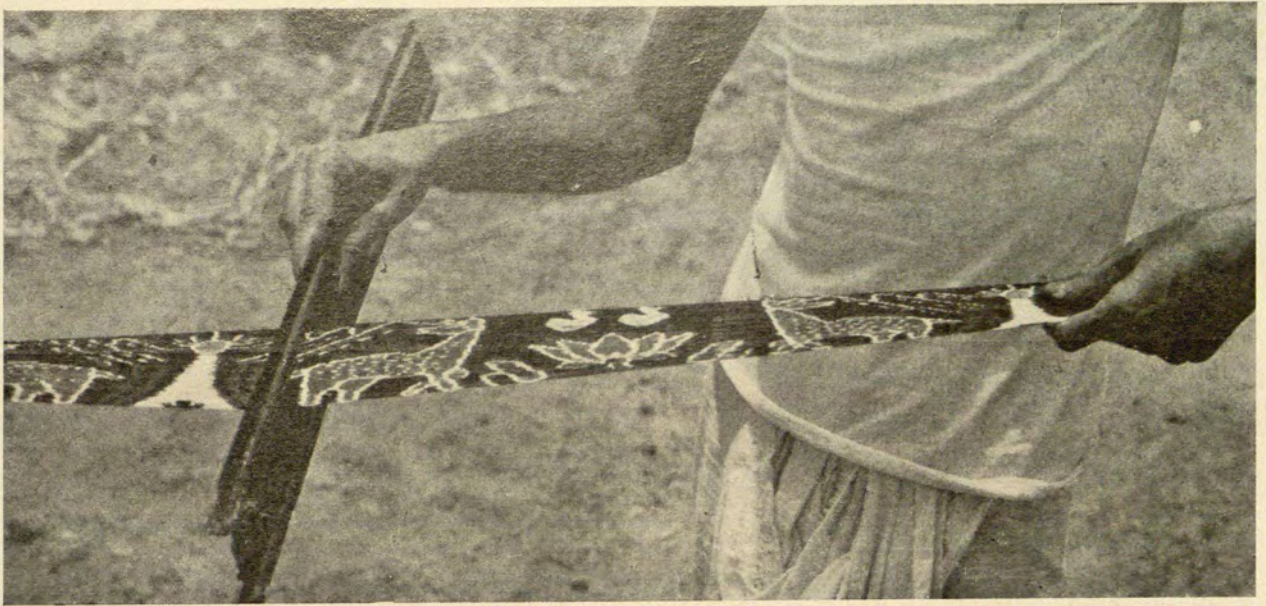


Plate 104 △
Tied and dyed yarn,
Village Muktanagar,
Nuapatna area.

◁ Plate 105
Tied and dyed yarn,
Village Muktanagar,
Nuapatna area.



Plate 106 : Tied and Dyed yarn, Village Muktanagar, Nuapatna area. △
Plate 107 : Stock of tied and dyed yarn, Bargarh. ▷





Plate 108



Plate 109

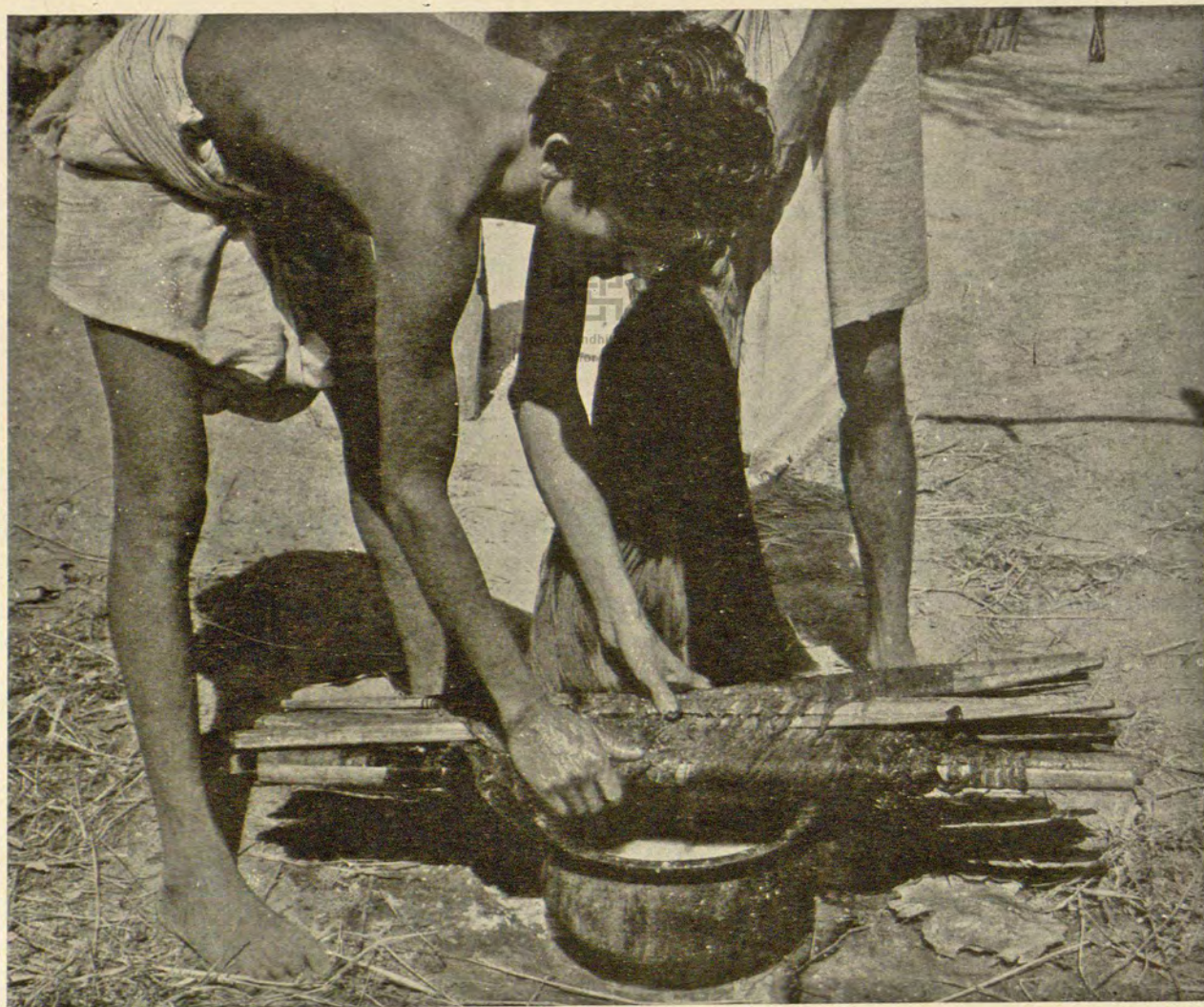


Plate 110

Plate 108 : Old earthen pot for vegetable dyeing preserved, Village Nuapatna.
 Plate 109 : Winding of tied and dyed yarn on to pirn, Village Nuapatna.
 Plate 110 : Sizing of warp, Barpali, Bargarh area.



◁ Plate 111

Brushing after sizing, Barpali, Bargarh area.

Plate 112

Weaving of cotton tie and dye saree
Village, Jhilminda, Bargarh area. ▽

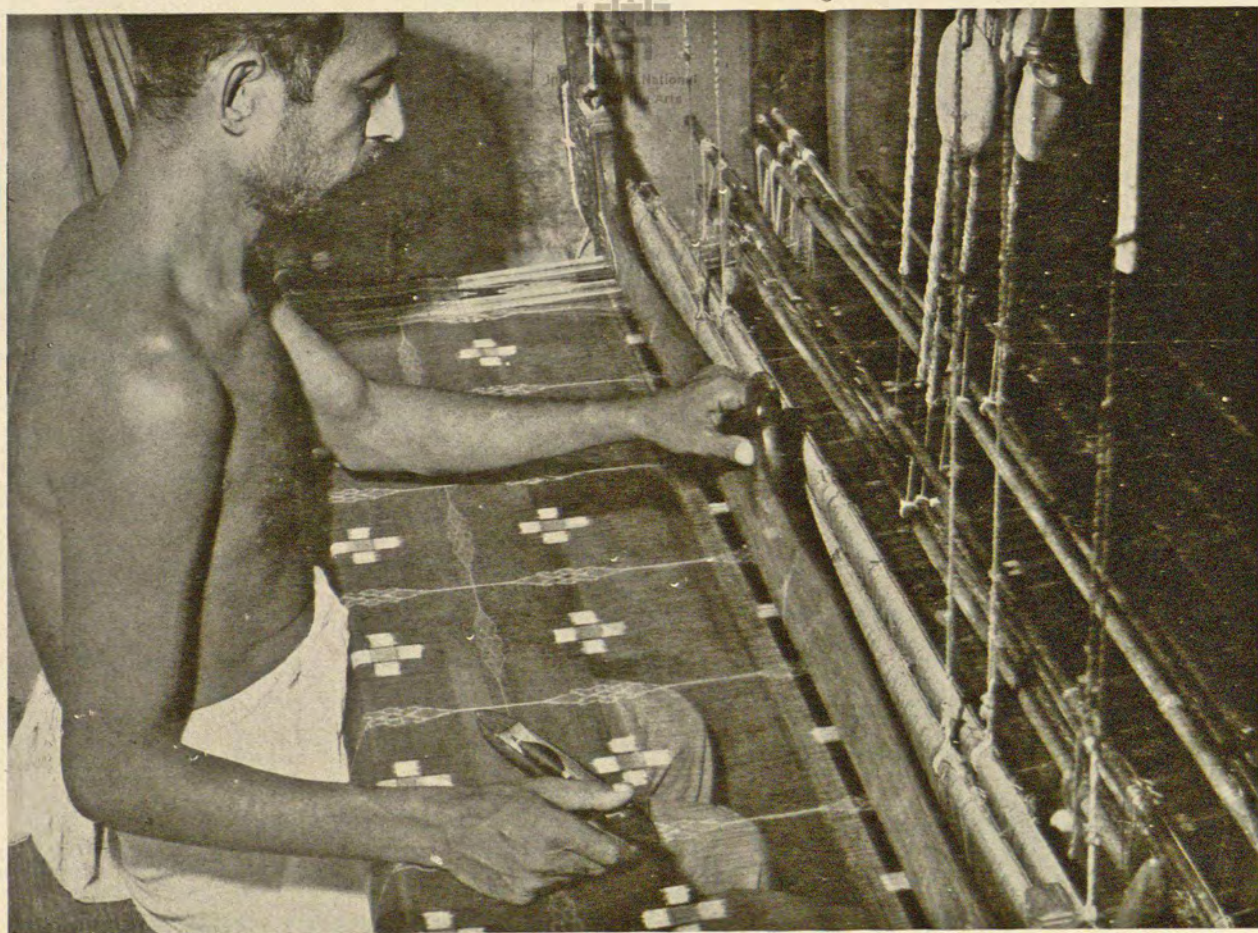


Plate 112

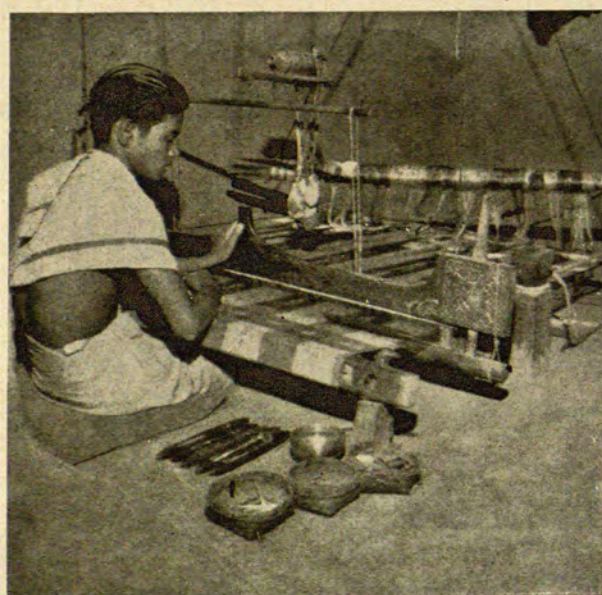
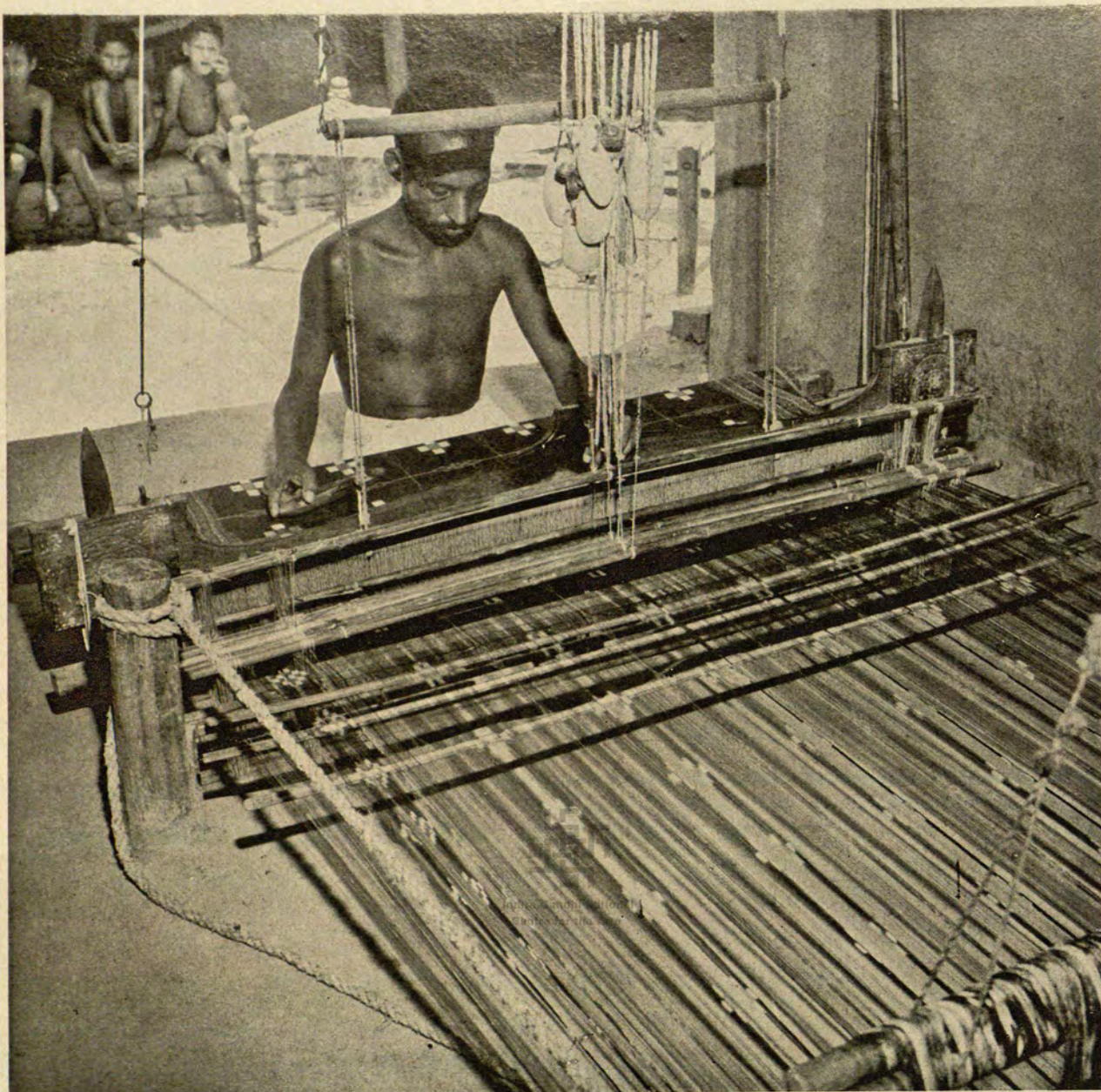
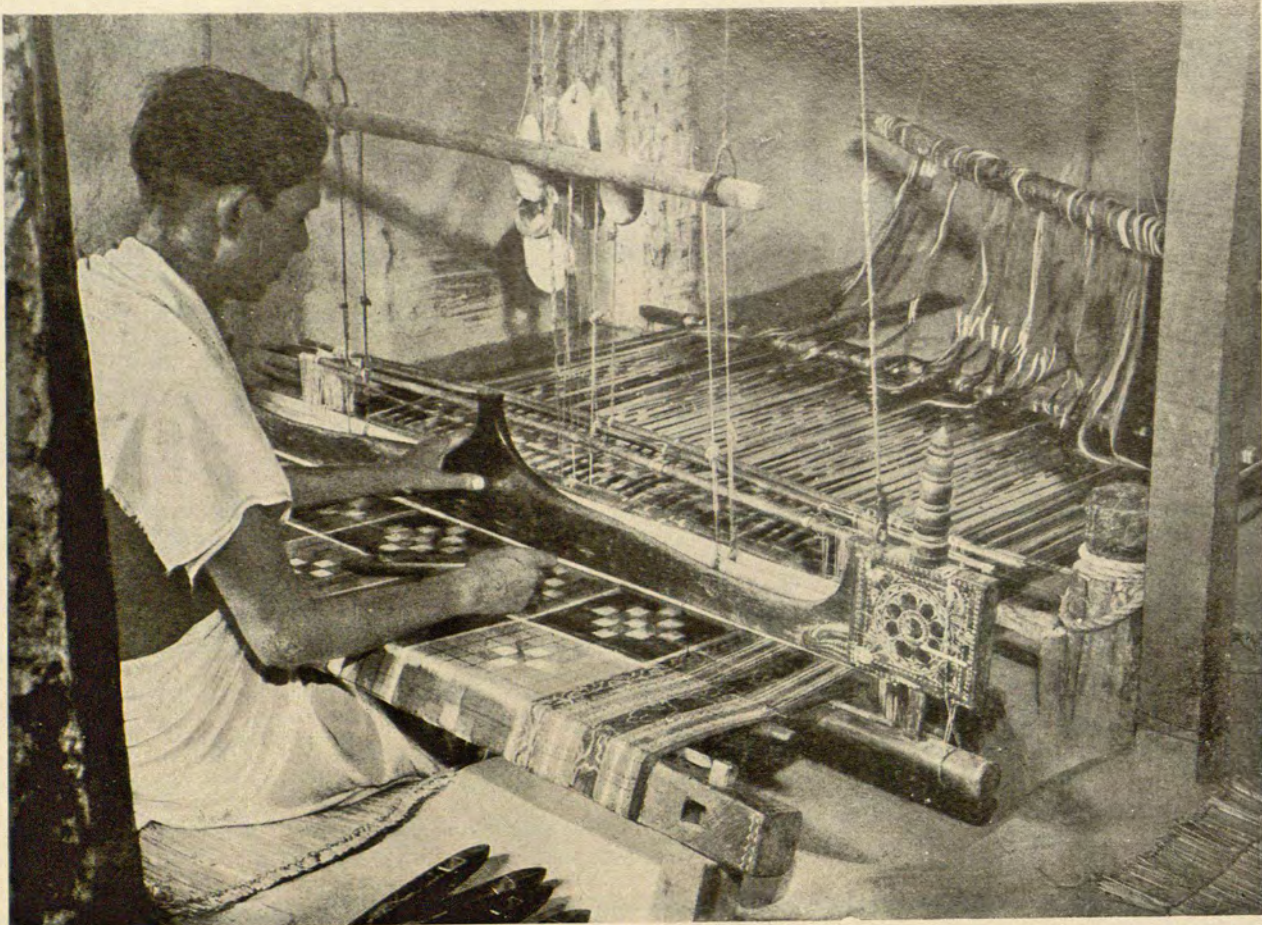


Plate 113 △
Weaving of cotton tie and dye saree,
Village Jhilminda Bargarh area.

◁ Plate 114
Weaving of cotton tie and dye saree,
Village Jhilminda, Bargarh area.

Plate 115 : Weaving of cotton tie and dye saree, Village Jhilminda, Bargarh area.



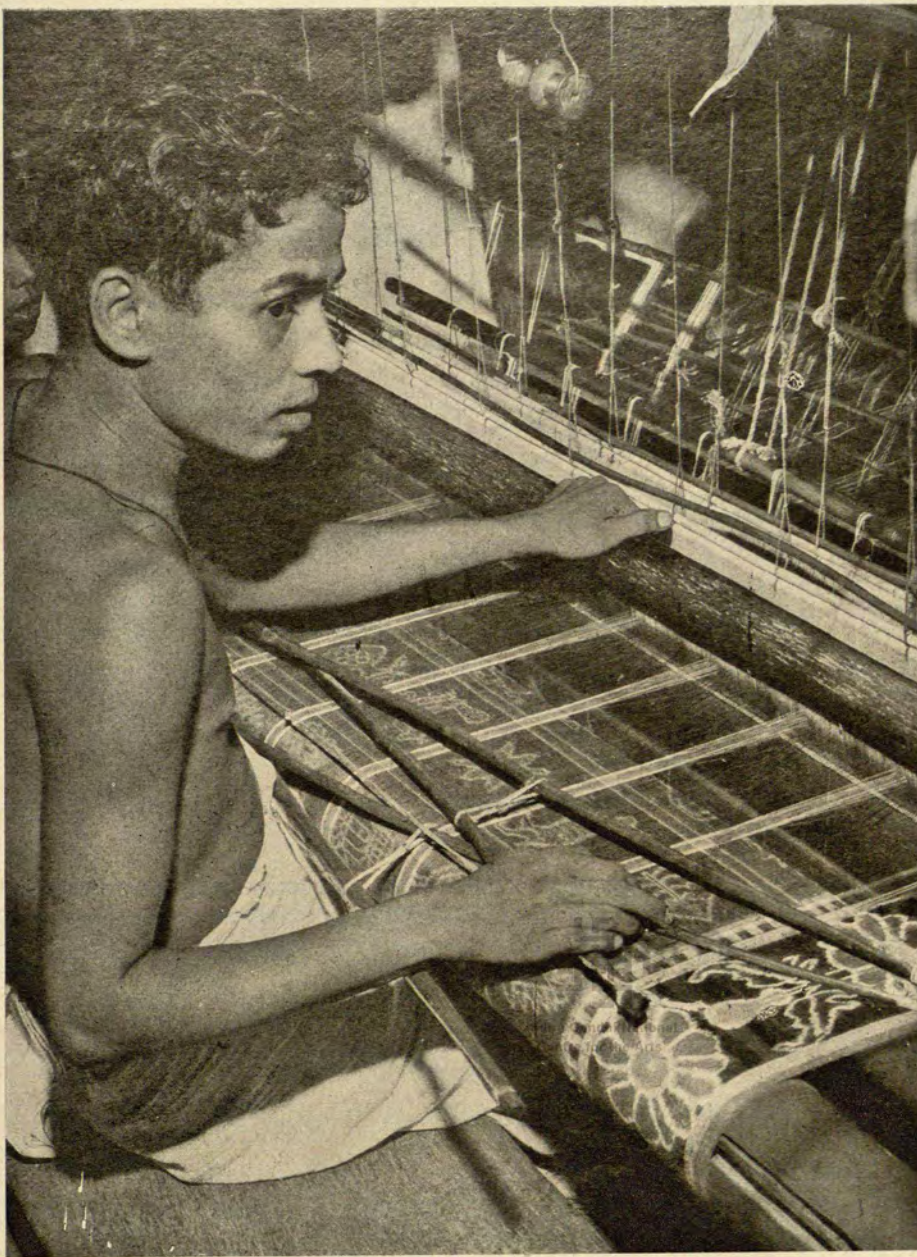


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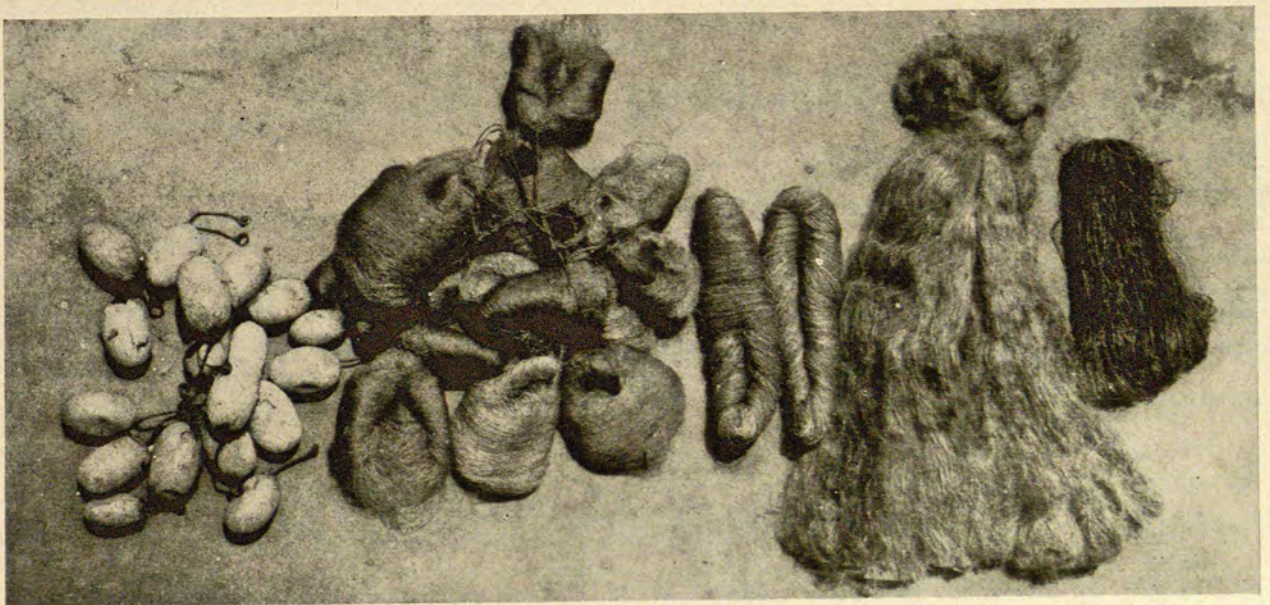
Plate 116 △
Weaving of cotton tie and dye saree,
Village Jhilminda, Bargarh area.

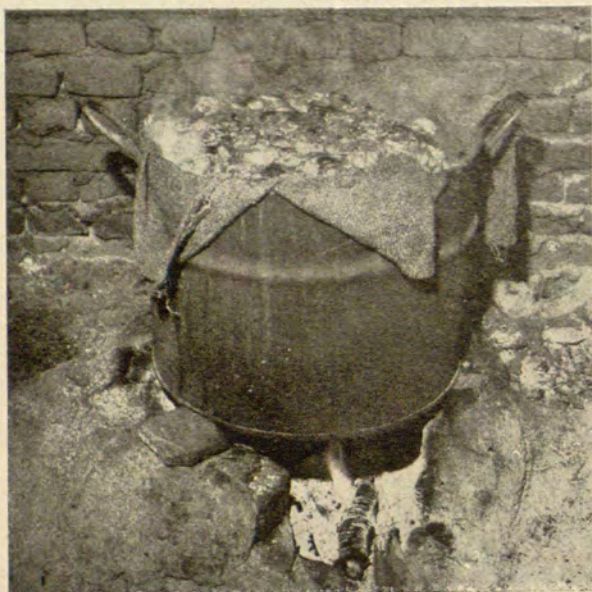
Plate 117 ▷
Weaving of tie and dye bed cover, Barpali,
Bargarh area.



◁ Plate 118
Weaving silk tie and
dye saree
Village Nuapatna.

Plate 119
Tassar cocoons and
yarn reeled and spun,
Village Muktanagar,
Nuapatna area. ▽



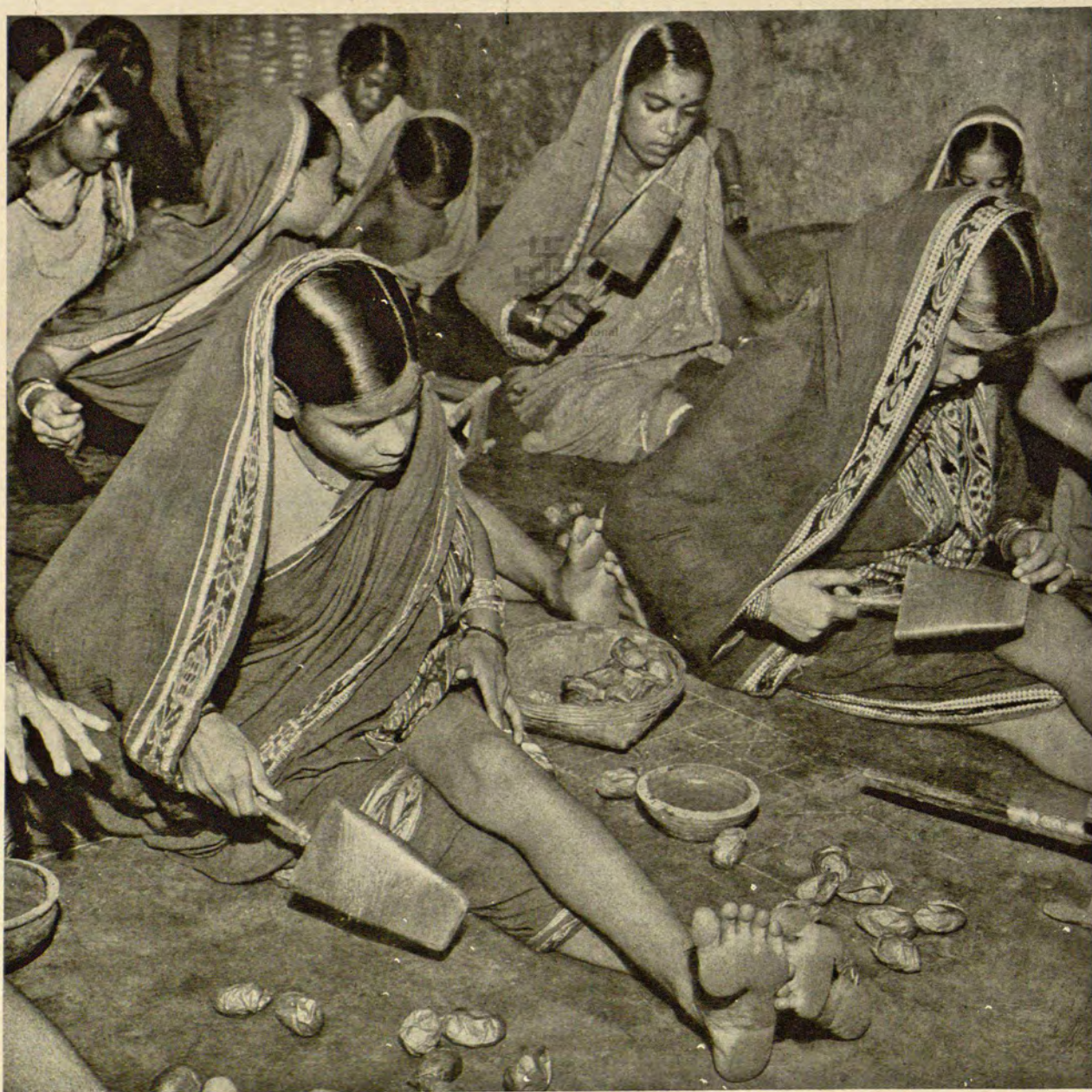


◁ Plate 120

Boiling of tassar cocoons, Village Muktanagar,
Nuapatna area.

Plate 121

Reeling of tassar cocoons, Village Muktanagar,
Nuapatna area ▽





◁ Plate 122
Spinning of tassar
ghicha yarn,
Village Muktanagar,
Nuapatna area.

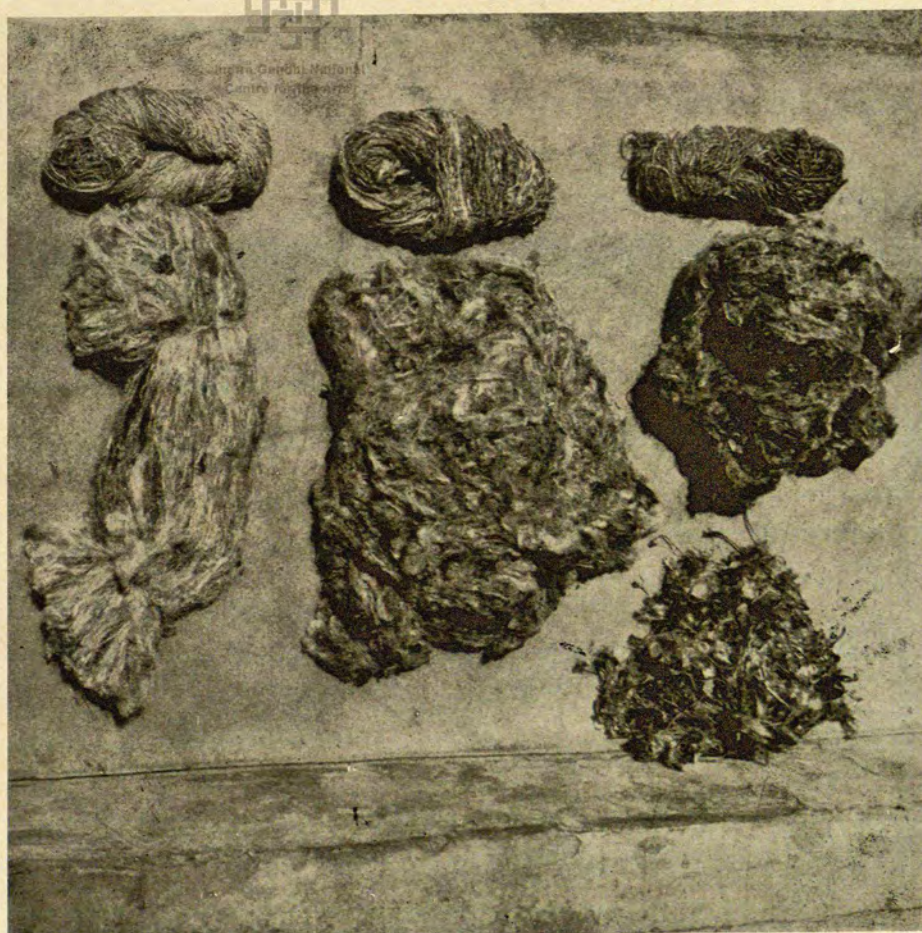


Plate 123 ▷
Tassar waste material
and waste yarn,
Village Muktanagar,
Nuapatna area.

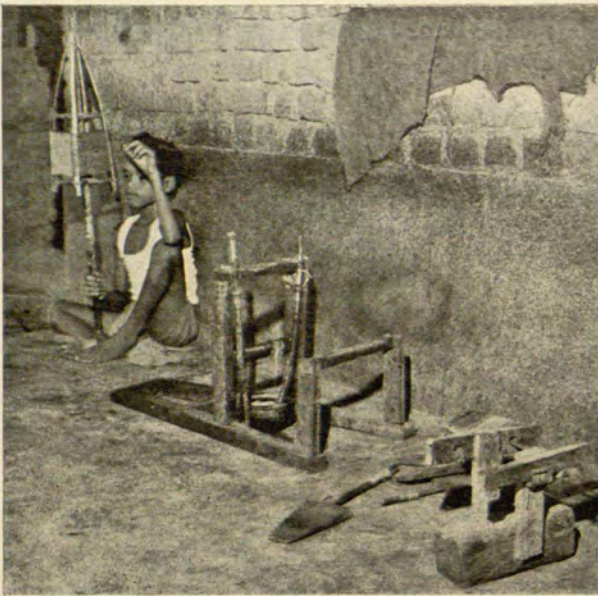


Plate 124



Plate 125

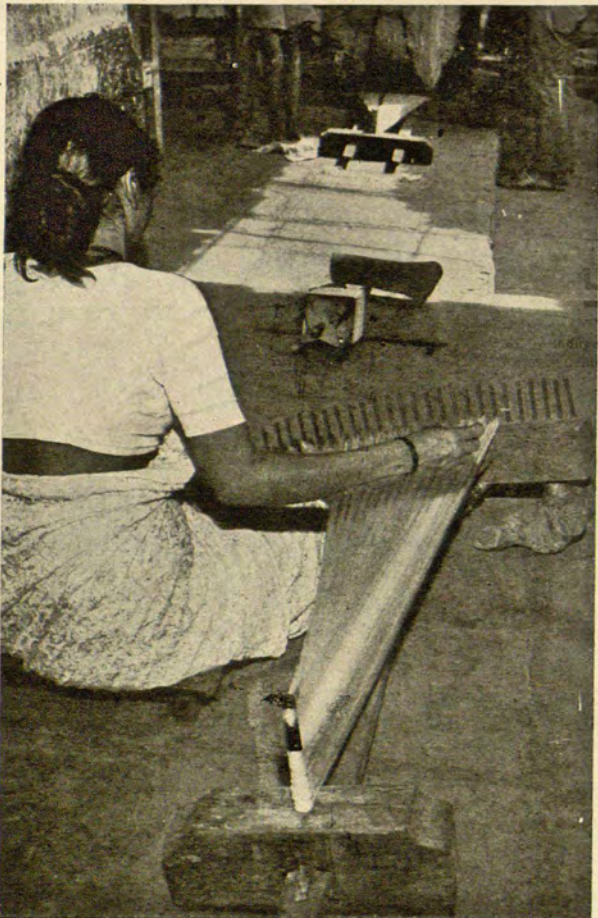


Plate 126

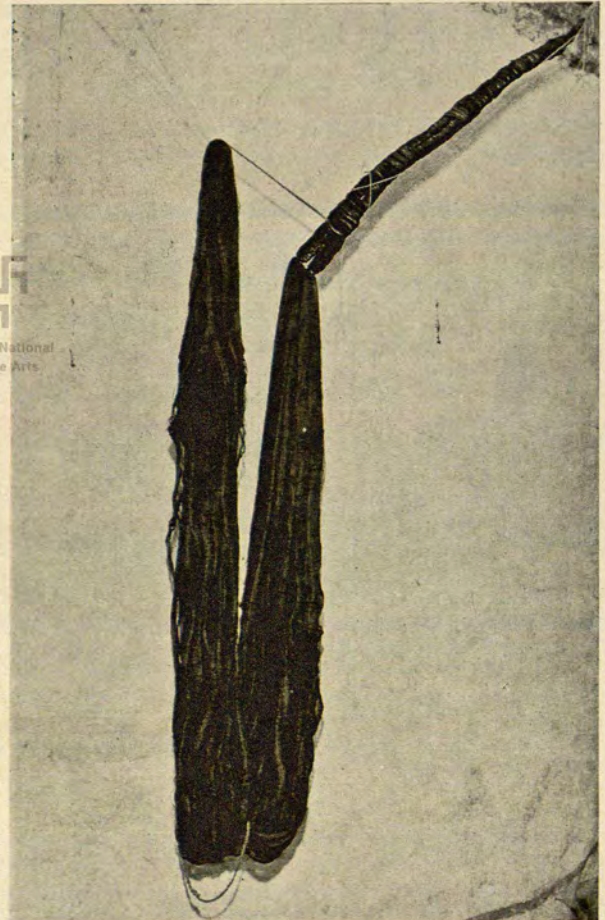
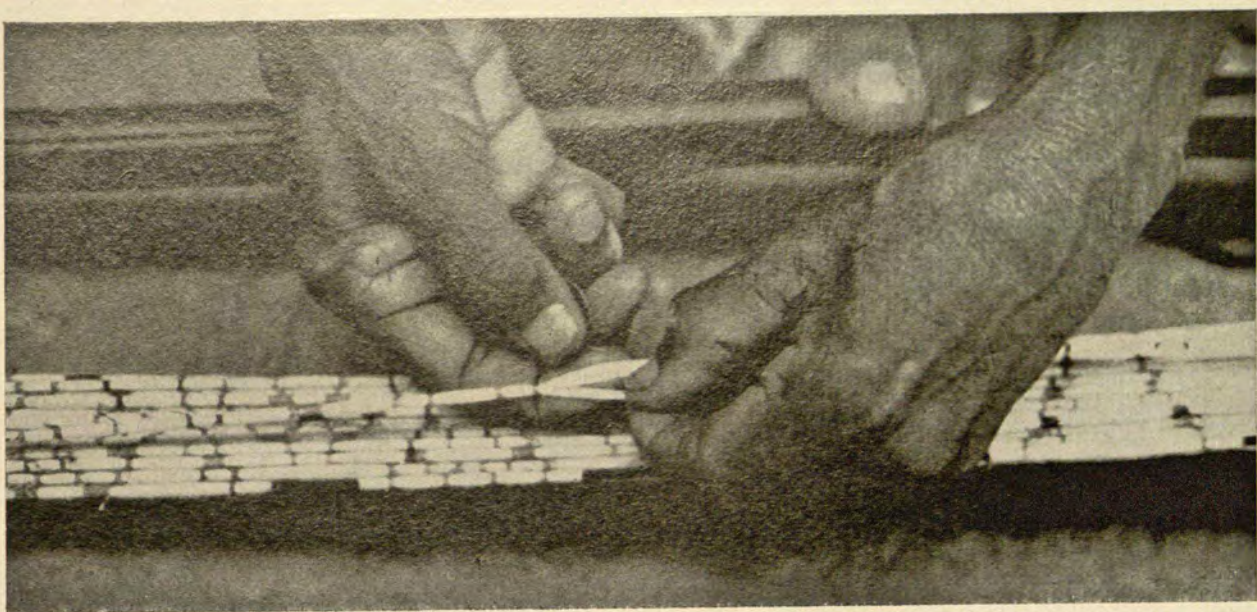
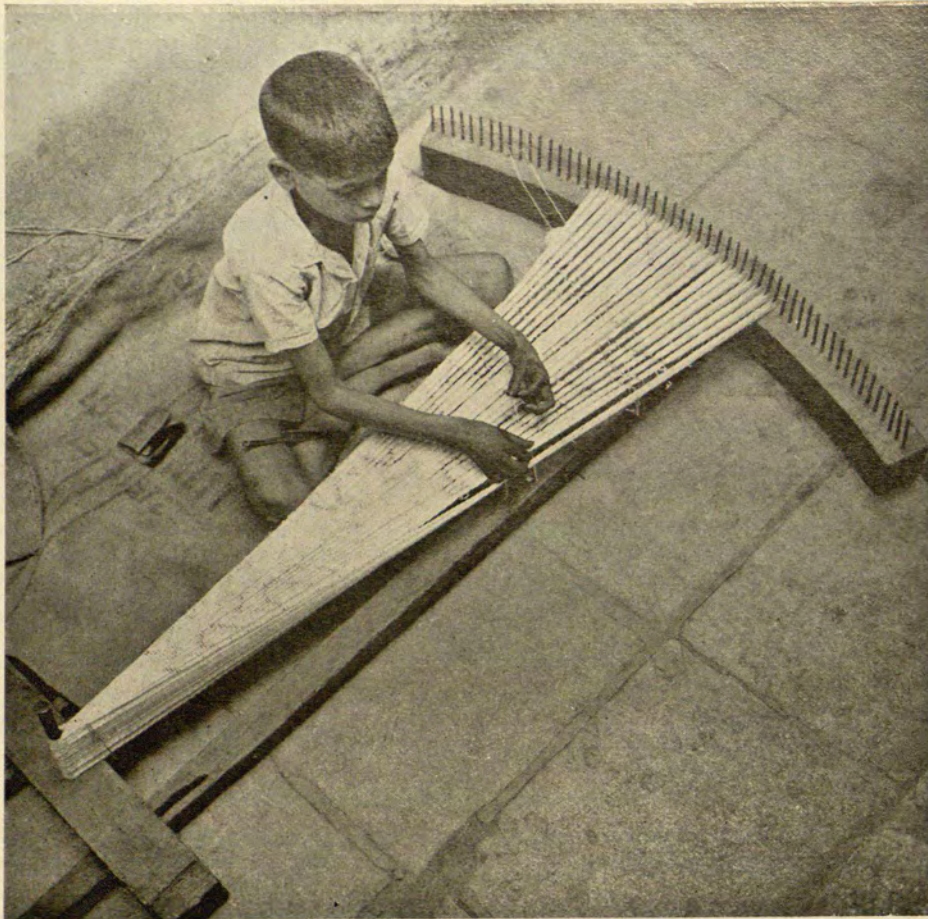


Plate 127

- Plate 124 : Single thread sizing of tassar yarn, Village Muktanagar, Nuapatna area.
 Plate 125 : Unwinding silk yarn from skein, Village Pochampalli.
 Plate 126 : Preparation of weft on semicircular frame for tying, Village Pochampalli.
 Plate 127 : Silk warp from Bangalore, Village Pochampalli.
 Plate 128 : Tying of yarn, Village Pochampalli. (right above)
 Plate 129 : Untying and tying of yarn, Village Pochampalli. (right below)





◁ Plate 130
Tying of yarn on a
semicircular frame,
Village Pochampalli.

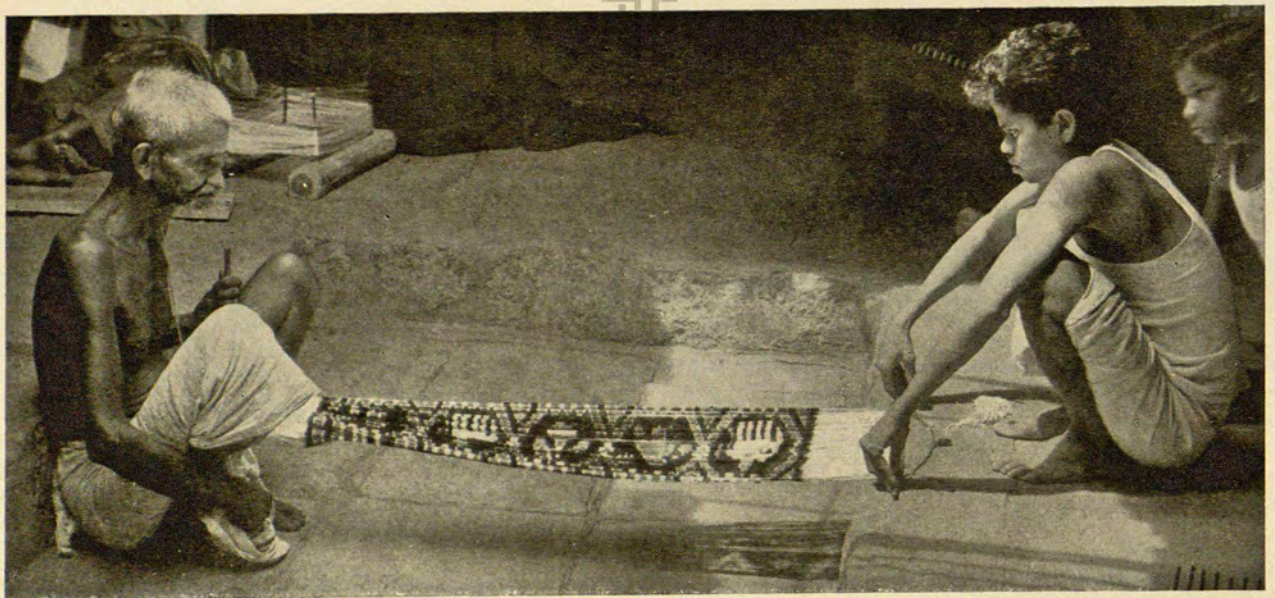
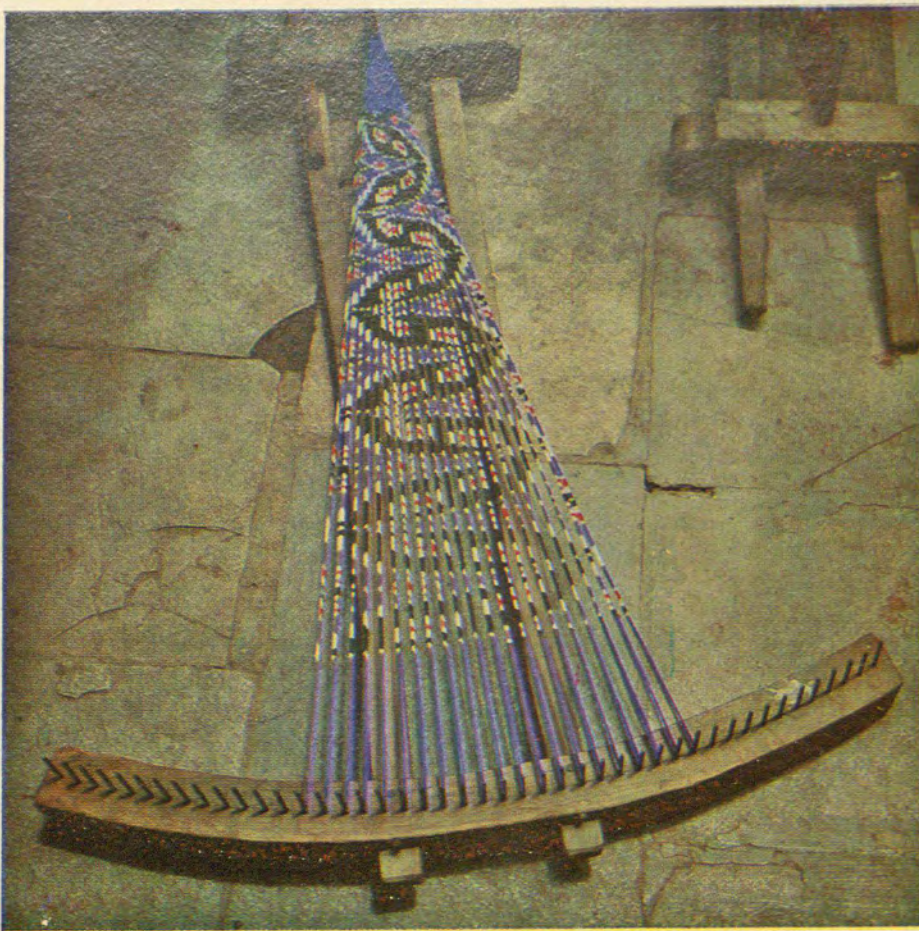


Plate 131 : Tied and dyed weft yarn, Village Pochampalli △

Plate 132 : Tied and dyed weft yarn, Village Pochampalli. (right above)
Plate 133 : Weaving of silk tie and dye saree, Village Pochampalli. (right below)



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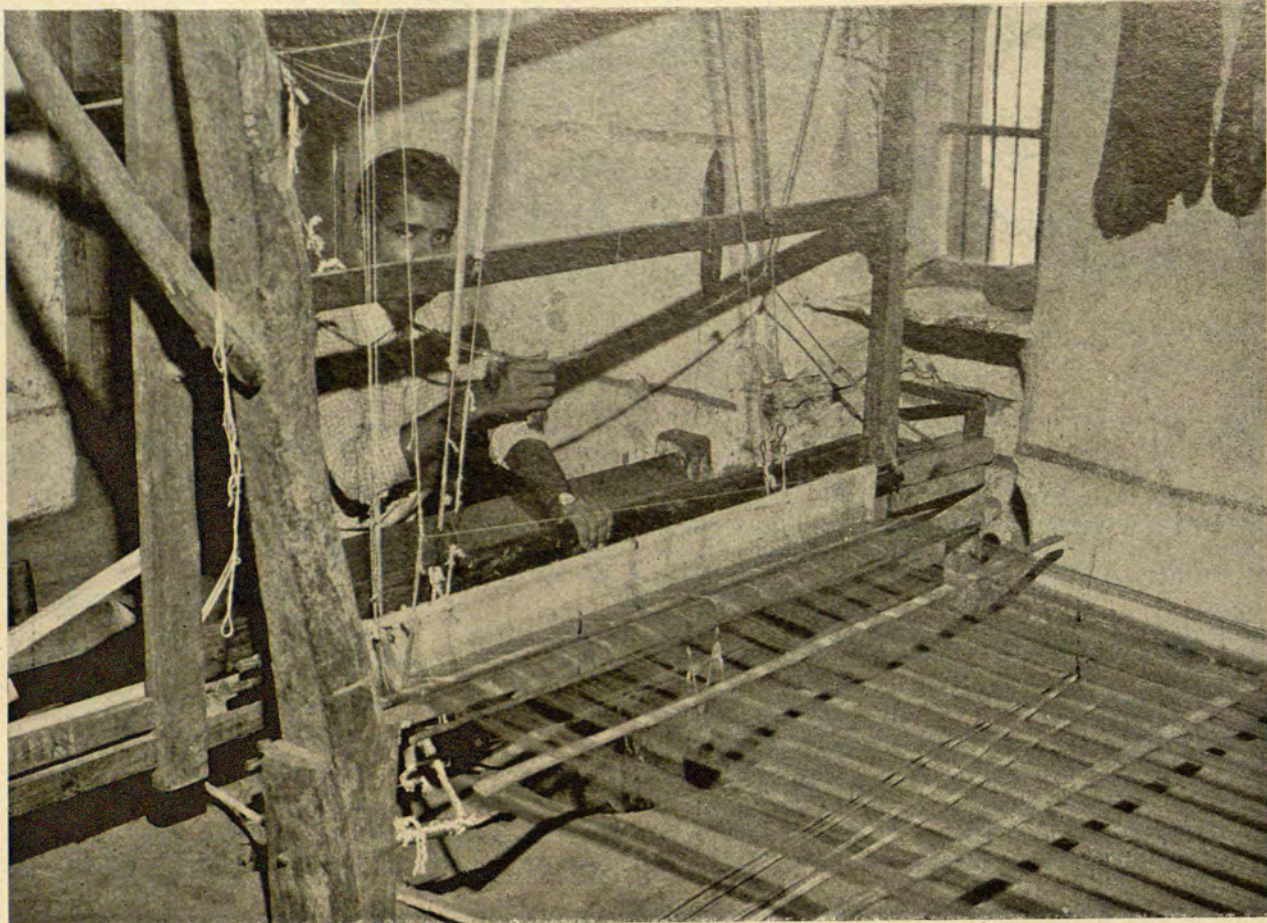


Plate 134 : Weaving of silk tie and dye saree, Village Pochampalli.



Plate 135
Weavers of village Tope, Bargarh sub-division.



Plate 136
A weaver family, Village Muktanagar, Nuapatna area.



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