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ELEPHANT-CATCHING: ANCIENT AND MODERN.

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The Khedda operations form a special feature of Mysore. Everything connected with that great leviathan (the elephant) seems to make a strong appeal to the imagination of most people and consequently whenever Khedda operations are in progress they attract a considerable amount of attention.

The word "Khedda" is a Hindustani term, meaning a small pit, commonly applied to circular trenches, designed for the capture of elephants. It is also called "Bangadi" in Hindustani and "Ane-pangandi" in Kanarese. This method of catching the huge denizens of the forest was long in vogue in Mysore. It is different in Bengal, Burma and Ceylon. In Mysore, circular trenches were excavated with a width of $2\frac{1}{2}$ feet at the bottom, 8 to 10 feet at the top and a depth of 8 or 9 feet. This section was, however, found at times insufficient to confine huge rogue tuskers. Tradition goes to show that Hyder Ali had, more than a century and half ago, vainly made an attempt at Kakankote to capture elephants in herds, using something like our present Khedda system. His failure created in his mind an impression that no one would ever succeed in this work and his curse upon any one that attempted to do so is recorded on a stone standing near the scene of his endeavours. With the march of time the curse proved ineffectual as evidenced by the successes of the last fifty years.

It is interesting to note the ancient history of catching elephants and the manner in which Khedda operations were reported to have been conducted in India as far back as two thousand years ago. Of the various methods of capturing elephants described by the old Greek and Latin writers as in vogue among the ancient inhabitants of India, the Khedda system is one.

The following account belongs to the period between B.C. 200 (Megasthenes) to about A.D. 130 (Arrian). Megasthenes had been himself in India. The Indians hunted all wild animals in much the same way as the Greeks, but they captured the elephant in a manner which was quite peculiar. A convenient and level spot of a size which was ample enough for a large army to encamp, was chosen. A trench, 30 feet wide and 24 feet deep, was then dug round this perimeter and the spoil from it was thrown along the outer side to form a bank. At intervals within this bank were formed hiding places, which were provided with loop-holes from whence to observe the approach of the beast and the exact moment when they entered the enclosure. Only one entrance to the enclosure was left open and this consisted in a bridge (width not specified) covered with a deep layer of earth and turf and leaves, so that the animals might not suspect the existence of the bridge either before they came to it or when they were passing over it. A few very tame and well-trained cow-elephants were next driven to the enclosure to act as decoys and the observers then returned to their hiding places to await the development of the situation. It was considered as hopeless to expect a wild herd to enter the enclosure by day, but during night-time, the herd would smell or hear the cows and in their desire to reach them would enter the trap. The whole herd would be trapped because they would follow a large male which led them. Those watching in the shelters, knowing what had occurred, immediately proceeded to demolish the bridge. News of the capture was sent to the adjoining villages and the *kumkis* were brought up and kept in readiness for their part in the proceedings. Meantime, the enclosedherd was kept without water (food in actual accounts) in order to weaken and cow them. When the psychological moment had arrived, the bridge was rebuilt and the *kumkis* taken in for roping operations. A furious battle then took place and continued until the *kumkis* obtained the upper hand, when the roping commenced. First the leg ropes were put on and then the neck ropes. But in order that the neck ropes might have better effect, the necks of the wild elephants were incised with knives so that the ropes (described by Strabo as being made of raw ox-hide) might severely hurt the animals whenever they struggled and hence make them less ready to shake their heads and thereby throw off the men who had mounted them. Being now sufficiently weakened, cowed and roped up, the captured animals were tied neck and neck to the tame ones and led off to their stables. On arrival, they were

then tied neck and legs to stout posts and given food and the much needed drink. At first, the new captives refused to eat, and so the Indians stood round them and cheered them up with music and tom-toms by which the animals became so soothed as to take their food. During the process of roping up, the very young ones, the very old and obviously useless ones were purposely allowed to escape and no further notice was taken of them.

The above description raises several interesting lines of thought. (1) *Bridge.*—The stress that is laid on the deep layer of soil placed above the bridge, which was evidently built low down in the ditch, indicates that it really was a bridge that had to be passed and not a narrow cut of the solid ground left between the extreme points of the ditch's perimeter. (2) It will be noticed that there is no reference whatever to the preliminary or the final drive which is such an important feature of the present-day operations. The ancients were, if anything, more highly skilled in their knowledge and handling of elephants than the men of the present day. (3) As a corollary to these two items, the omission of any mention of the modern poised gate which is a much simpler contrivance than an elaborate and strongly built bridge. The reason for adopting the bridge in lieu of the gate is perhaps that a poised gate necessitates a narrow entrance and a narrow causeway whether bridge or solid ground. The depth of the ditch being so narrow, it seems improbable that not one alone but a whole herd of elephants would thrust themselves on to such a narrow causeway flanked on each side by a deep ditch. Again, it is said that the captured animals, as soon as they were roped up, were taken out of the enclosures. It is true that it is noted that they were quite cowed. But in any event, it would be a difficult job to take elephants *two* if not *three* abreast (they were tied neck to neck) with perhaps one or two others butting in behind, over a causeway flanked by a ditch twenty-four feet deep. So we may conclude that there really was a bridge and that the ancients had excellent reasons for preferring a bridge to a gate, even though the bridge involved building up and dismantling on two occasions.

The statement that very young elephants were deliberately allowed to escape indicates that herds were not only plentiful but easily captured whenever wanted; and that Khedda operations were of pretty frequent occurrence and that their management well understood. Elephants in those days were used not only for ceremonial purposes but also for war and for export. And from these causes, not to mention disease and death, the depletion of the tame stock was presumably great and made frequent replacement necessary.

Old System of Capturing Elephants.—About ninety years ago, permission used to be given to the public to destroy or otherwise drive away the wild elephants, when they damaged the ryots' crops by firing the jinjal, a rude sort of small cannon fired from a tripod stand loaded with a round bullet

of half a pound and half a pound of powder; and the bait was a reward of Rs. 25 on the production of tusks, ears, tails and nails of the destroyed elephants; tusks being omitted for females. As this was found to cause wholesale destruction of elephants, it was stopped and the "pit system" introduced. The following are the chief methods adopted for the capture of wild elephants:—(1) Pit-falls, (2) Noosing or Maidan Shikar, (3) Hunting with trained females, and (4) Driving into Kheddas or enclosures.

The following is Mr. Sanderson's description of pit-falls:—

"A most barbarous method of catching wild elephants is pit-falls, dug in their paths and into which they fall with a readiness, which is remarkable in animals which are usually so cautious in all sorts of ground. The pits are generally arranged in some confined pass at seasons when the elephants are not in the neighbourhood, or under particular trees, which they are in the habit of visiting for their food or leaves. The standard measurement for pits in Mysore is 10½ feet long by 7½ feet broad and 15 feet deep. This is a tight pit as to area for a large elephant, but is purposely made so as to prevent male elephants using their tusks to dig down the sides, which they manage to effect in a day or two, if they are left to themselves. The depth of the pits being so great, it may be imagined that an immense majority of the elephants that make the descent have their limbs dislocated or broken or receive permanent internal injury, even if they are not killed in the pit, as sometimes happens. To prevent such mishaps as far as possible a strong bar is fixed across the mouth of the pit in the centre, upon which the elephant's neck usually falls; and though it bends or breaks with his weight, it tends to make him go down more level than he would otherwise do. It is seldom the hunters trouble themselves to put boughs in the bottom of the pit to break the force of the elephant's descent. In Mysore a perfect network of pit-falls is to be maintained by the Maharaja, the Forest Department and a few by lessees as also in Madras. In these a large number of animals were taken annually. An immense proportion died from the effects of this violent mode of capture and those that lived were only small ones, whose weight did not lead to such serious effects as in full-grown ones.

The Sholigars and Kurubars used, when pits were in vogue in Mysore, to be entrusted with their supervision. If an elephant fell into one, they were supposed to take the news to the station where the tame elephants were kept near the jungles and these would then be taken by their drivers to secure the animal. Between the delay made by the jungle people and the laziness of elephant-men, many elephants were starved to death in the pits or so reduced as never to be got out of the jungle alive. Many other wild animals fell into the pits besides elephants. I have myself known of several

bisons, a pair of bears and two pairs of tiger cubs falling into them. Deer constantly did so and it was for the sake of their flesh as much as for the trifle that they were paid, that the jungle people used to attend to the pits. In the hot weather, when cattle were taken to graze in the forests, they frequently fell in and of course were left to their fate, as their legs or ribs were more often broken than not. The Commissariat and Forest Department soon gave up the pit plan ; but the Maharaja required a few elephants annually and even though ten or twenty were killed for every one that lived, it was his only method of procuring them. As the forests were full of herds, it did not matter from an economic point of view how many were killed. I have heard of four elephants falling into one pit together and strange to say, three survived on this occasion, probably from having the fourth as a cushion at the bottom. This one was trampled to death and almost out of all shape.

The pits were often arranged with great art by the hunters, an open one being perhaps left in view, in avoiding which an elephant would fall into a covered one alongside ; or several were dug in close proximity into which others might fall when fleeing in terror at the bellow of fright which the first gave on finding the earth sinking under him.

* * *

Since the Maharaja's death, the pit system in Mysore has happily been given up. The atrocious cruelties to which elephants were subjected by it are too horrible to think of."

Noosing or Maidan Shikar.—This kind of Maidan Shikar was formerly prosecuted to secure large male elephants when wandering alone. Tame females accompany the wild male, day and night, under the direction of their mahouts and prevent him from sleeping until he becomes so weary and exhausted as to fall into a sound sleep, when his legs are pinioned together and his subsequent capture becomes a matter of no difficulty. The following is Mr. Sanderson's description of the " Noosing system " :—

" The largest male elephants are seldom caught with the herd by the Khedda plan from their habit of frequently absenting themselves from their companions or making their escape out of the circle of men by their boldness. They are the most valuable animals and are usually caught in the following manner or in some modification of it.

Four or five steady females, ridden by their mahouts, who partly conceal themselves with a dark-coloured blanket as they lie on their elephants' necks, are taken to the jungle, where a single male is known to be and are allowed to graze as though they were wild ones, and to gradually approach the male, if he does not himself take the initiative. Some wild males make off at once, probably scenting the men on the elephants' neck, but they do not appear to notice them. When the male can be got to abandon himself without reserve

to the society of the females, they keep in close attendance upon him and so it is sometimes two days and nights before he can be secured ; a party of spare mahouts follow on foot to relieve the riders every twelve hours. For this purpose, the tame females are withdrawn one at a time and the mahout is changed out of yoke of the wild one. The relieving party also, generally, has a spare elephant carrying the ropes and chains required when the wild elephant is secured. At night, the wild male probably leaves the forest to visit the fields of adjacent villages, whither he is closely escorted by his treacherous friends. If he enters a field to graze, one female is posted at each corner and by a signal gives notice to the others when he leaves it. This is to avoid the damage which the whole parties entering the corn field would cause. Towards the morning, the elephant retires to the forest and when he shows signs of going to sleep, the tame ones close round him. Should he not appear to be very somnolently inclined, devices are used to keep him awake, such as moving off all the tame elephants where he generally follows so as to keep him without rest and tire him until he shall resign himself to slumber without reserve. Some elephants can be got to eat opium in sugar when, the mahouts say, they are soon reduced to helplessness, but I never had an opportunity of using it myself. The tame Delilahs under the directions of their riders, close round their victim when he is generally asleep, and two mahouts slip off with coils of rope and tie the slumbering Samson's hind legs together very securely. Half an hour is frequently spent in doing this. The tame elephants then withdraw, and the men on foot perhaps slap the wild one and tell him to be of good cheer. His terror in perceiving men so close to him may be imagined and his rage and dismay at finding his legs bound together pass description. If he has been secured to a tree, he uses every effort of which he is capable to snap his bonds. If only his hind legs have been fastened together, he makes off as best as he can, dragging them after him. The other elephants follow at a distance, and when he is completely exhausted, they again approach keeping out of reach of his tusks as he will now use them and the men fasten him to a convenient tree and camp close at hand. In a day or two, a cable is fixed on his neck, and with one still on one hind leg, he is led away to an appointed station to be trained. A large proportion of the fine elephants captured in this way die from the injuries they receive from the severe restraints necessary to control them during the first few days."

It appears that this system was only adopted during the reign of His Highness the late Maharaja Mummadi Krishnaraja Wadiyar Bahadur, with rare and uncertain success.

In 1894, an attempt was made to noose a huge tusker that came to Peelkhana in Sacrebyle forest and was given up as hopeless on account of its turbulence.

In 1896, a good tusker and a huge mukhna (tuskless male) was secured by this plan under Mr. Khedda Shama Iyengar's guidance.

Noosing from Trained Elephant Backs.—This is the most spirited and exciting though by no means advantageous manner of hunting the wild elephant. It is practised in parts of Bengal and Nepal, but it is unknown in Southern India. It is far from being an economic method as the wear and tear of the tame elephants engaged is very great, nor can full-sized wild ones be captured by it. It is conducted as follows:—Three or four fast tame elephants are equipped with a rope each; at one end is a noose, the other is girthed securely round their bodies; on some the noose is the near side and on the others to the off. Each elephant has three riders—the mahout on its neck to guide it; the nooser kneeling on a small pad on its back holding the open noose in his hands; and a driver seated near the root of its tail, whose duty it is to hammer it unmercifully on the hinder part with a spiked mallet. This impels the elephant to much greater exertions than any use of the driver's goad though that inducement is by no means omitted. Thus equipped the elephants approach the wild ones. These at once make off and the chase commences through or over everything, the men saving themselves by being swept off if the jungle is thick as best they can. When the ground is favourable two tame elephants endeavour to range up on opposite sides of a fleeing wild one, encouraged thereto by the unlimited use of the spiked mallet. When the elephants are well near the wild one, the nooses are cast and generally encircle its neck. If this is effected, the tame elephants are checked and other nooses are soon secured, but the choking of the wild one or fatal accidents to the tame ones or their riders by being pulled over or dragged into ravines are not unusual accompaniments of this rough work. Hand noosing is practised only in Ceylon, where a couple of hunters on foot manage with wonderful skill and activity to noose the hind legs of an elephant while running away and to secure the trailing ends of the ropes to a tree as it passes.

Driving into Kheddas or Enclosures.—The Khedda operations in Mysore District (Kakankote) are done in two ways: (1) River drive; (2) Land drive. In both these plans, real Khedda enclosures and roping stockades, *viz.*, Khedda No. 2 and No. 1 are situated in Kakankote forests, though elephants are driven into Khedda No. 2 from Begur Range forests which are divided from Kakankote forests by the intervening Kapini river.

River Drive.—This is indeed a very interesting and imposing sight to view by august visitors like Viceroys, Maharajas and Princes compared with the Land drive which is somewhat more risky. In this operation, a good bit of well-clothed forest, say about six square miles, is surrounded by a broad clear cut line on three sides, the river forming the fourth side; *i.e.*, from

the summit of the Star Hill in Begur forest, radiating lines are cut and cleared to the edge of the river Kapini. These drive lines and other interior concentrating lines are of various lengths, 50 to 100 feet wide. The tree-growth thereon is clear felled, and flush to the ground, and grass shrubs and even intervening branches are completely cleared, so that any person standing on the summit of the hill can clearly see elephants cross the line and enter the surround. In addition to these radiating lines, other minor drive lines are cut and cleared across them to enable the shortening of the surround while driving the trapped herd to cross the river to enter the Kheddas.

The Khedda enclosures, called No. 2 and No. 1, about 4½ and 1½ acres respectively, are surrounded by a V-shaped trench, 8 feet at the top, 4 feet at the bottom and 8 feet deep. On the outer edge of the trench, a wooden palisade is erected all round 10 feet high out of stout jungle poles with thinner cross poles than the uprights. Each Khedda is provided with two ponderous gates, one facing the river and the other the road in Khedda No. 2 and one on the north-side and the other south-side in Khedda No. 1. These gates are kept open at ordinary times for the jungle herd of elephants to pass along their accustomed paths and brouse in the enclosure and beyond, quite unconscious that the one would be closed and the other shut when the enclosure would be turned into a prison or trap on some fatal day. The construction of a roping stockade inside the enclosure, *i.e.*, at some convenient point in the perimeter, is commenced soon after the elephants are surrounded. The V-shaped trench is discontinued, *i.e.*, interrupted at the gates and at the entrance of roping stockade.

In Khedda No. 2 a funnel-shaped way is formed by erecting a wooden palisade on both sides, from the river to the gate of the Khedda to guide the elephants from the river side to the gate.

A month or so before the august visitor comes to witness the Kheddas, a scouting party (generally Kurubars) is selected and sent to the interior of the forest to locate a herd and to know which way it is tending to travel. Some trained men halt within a mile, when half of them file off to the right and half to the left. Along these diverging lines which are kept up till they reach one of the surrounding lines men make a tapping sound when the herd moves on. When they approach the right side, the men on that side repeat the tapping sound. Then the herd turns to the left and hearing similar sound this side also moves on in a straight way. Should the herd smell no danger, it moves on unexcitedly till it reaches the surround line. When once the herd passes the surround line, the overseer that is watching the line from the summit of the Star Hill A gives a signal when the men collected at points A, B and C rush up and post themselves 30 feet apart and immediately light up the debray heaps that will have been collected at regular

intervals on the surround line. The elephants can now only escape by crossing the river, but this is prevented by the bank on the other side having been scarfed steep beforehand. In addition, men will have been posted on this side of the river also. Besides this, two bamboo temporary bridges will have been put up from points B and C to the other bank of the river. Four or five days before the arrival of the guest, the Maharaja and the party come to see the driving operations, the large surround is kept on shortening day after day by men moving gradually from line to line under guidance and thus there will only be a small surround area where the herd will be kept roaming for the day. On H. H. the Maharaja with the distinguished guest coming to the scene and taking up a position at a spot just outside the stockade wherefrom a good view could be obtained, a signal will be given for the drive to begin. Immediately the distant yelling of the beaters accompanied by toot of horns, beat of tom-toms and empty tins fill the air on the other bank. They gradually grow louder and louder as the men advance through the jungles and approach the herd. The herd generally gets funky, tries to run towards the river and finally plunges into the river, when the men dog their footsteps from behind. When once the herd plunges into the river, it has only to go towards the right or left or straight on. To the right, the temporary bamboo bridge with men holding torches and making noise, scare them, whereas to the left there will be a number of tame elephants posted at short intervals, on each of which there will be some men holding torches and making noise. Hence the herd is left to face the Hobson's choice and has only to go straight. In this direction, there will be absolute silence maintained and in addition an hour or two before the drive starts, a number of tame elephants will have been driven in the funnel-shaped track marked G in the sketch and made to urinate and dung so as to make the track appear to have been trodden by a herd just before. This inducement tempts the bewildered herd to take up this path and get into the Khedda which is screened by fresh leaves, etc. As soon as the leader gets in, the herd simply follows in a file and as the last enters in, the watch in charge of the gate drops the gate. Immediately, the men that are kept all round the trench light the fire and make the confusion of the elephants worse so that it is a pitiable sight to see the trapped herd standing huddled together in the middle of the Kheddas quite bewildered and shaking through fear.

Land Drive.—In this a jungle herd that is located in Kakankote forest will be driven into the large enclosure that is bounded on one side by the Doddahadi Forest Road (west), Antharasanthe-Kakankote Road (south). This latter road is further strengthened by a wooden palisade along it. On the north and the east, the boundary line consists of 60 feet cut line (see fig. 2). As soon as the trackers send the report of having located a good herd, some trained hunters would be sent to drive the herd silently towards the surround

area. When these picked men under a good Jamedar and Forest Officer bring up the herd into position for the actual drive, the drive is conducted similarly as described before under "River drive surround". The herd passing one of the surround lines, the gang of men collected at the heads of eastern and western boundaries file off at regular intervals and the beat is started. At one or two places, especially where the elephants are likely to make special attempts to escape, the men would be closely posted in addition to the locations of stops with guns and bamboo clappers, especially near the wings and palisades by the sides of the enclosure or Kheddas. On the entry of the elephants into the surround, the surround line will be posted up at thirty feet apart and the lines may further be strengthened by double lines under difficult or dangerous circumstances.

If the opportunities are favourable the drive is pushed on, narrowing and shortening the surround at the same time by crossing the interior lines with beaters and guarding the same by double lines of protection. Thus the herd is forced to enter the open gate, which is kept silent, *i.e.*, into Khedda No. 1. As soon as the last animal enters the Khedda, the gate would be dropped by the watcher, who would be sitting on a tree. The hunters would then distribute themselves rapidly according to previous arrangement, round the Khedda, two men at every twenty yards. These men fire the debray heaps that will have been collected for the purpose beforehand at regular intervals. All would be made secure in a short time, and the trapped elephants would then be left for the night in the Kheddas, being well guarded all round by the men, with steady fires.

As noted above, the Khedda operations are generally done to entertain the august visitor, primarily ; and to prevent the havoc caused by the elephants to the neighbouring ryots, secondarily.

The roping of the captives offers great opportunities of entertainment to the visitors. A platform is generally constructed close to the gateway and round the roping stockade. From this, the spectators would obtain a close view of the most interesting roping operations. Before the Royal party of spectators reach the platform, the captured elephants would have all been driven in into the roping stockade, where they would temporarily be confined compactly while the gate of the outer enclosure would be opened and tame elephants, *i.e.*, "Kumkis" admitted. These are generally highly trained animals and are exceedingly docile and will allow men to move about among their huge legs taking care not to injure them intentionally or by inadvertence. The mahouts are all experienced Bengal men under the command of veteran Bengali Jamedars.

The work of tying up the captured elephants would be commenced thus. Tame elephants would range up along each side of the large wild one, whilst

another would be placed face to face to it to prevent it from advancing. The rope-tiers now slip to the ground and standing close behind the wild elephant, dexterously secure its legs together by thin ropes in a figure of 8. Each rope would be about 20 feet long and not thicker than the thumb to be light and easily handled. Five or six of such ropes would be put on to each elephant's hind legs, which are thus closely hobbled together. During this time, the tame elephants, on each side of the wild one, squeeze it tightly between them; and, being unable to see behind it will not be aware of what is being done as the ropes are lightly tied. A soft rope of loosely twisted jute, as thick as a man's arm is now secured to one hind leg and the end would be taken to a tree by the rope-tier. Two turns being taken round the tree, the wild elephant is backed against it and tied up. This is done by the tame elephants between which it stands being backed, whilst the elephant facing the wild one would butt and force it to retire. The struggle of the animal will not be of any avail as the combined efforts of three animals, as powerful as itself and acting under the guidance of their mahouts, nullify its opposition. It is very soon braced close to the tree and tied fast. It is not till the tame ones leave it that it realizes its position or uses its full efforts to free itself.

In this way, the larger elephants are quickly secured when the time of the youngsters comes later on. For all animals of 5½ feet and under, the simple plan of lassooing is adopted. Each tame elephant will have a stout rope fastened round it, about 15 feet of the rope being free and having a running noose at the end. This is held open by the mahout with both hands and cleverly thrown over the head of any young elephant that offers a good chance. More entertainment is afforded to the visitors by this part of the operations, perhaps, than by any other. It often happens that the young elephant shakes off the rope at the first attempt to lasso it and, after this, it seems to become quite alive to what is intended against its liberty. It is a point of honour with each mahout to secure any particular elephant calf when he once begins and the efforts of the calf to keep out of the way of its pursuer are fully equalled by the latter's pertinacity. No one would meddle with another's chosen game, though it often happens that one man may secure a calf that would give a friend a tedious chase. All is done with a deliberation that makes the same indeed charmingly amusing. Many a time even after the cast was made the noose might be thrown up by the ever-ready trunk, the youngster would get his fore feet through and become caught round the body instead of the neck, when its cries and ridiculous straits are very laughable. In such cases, another noose is generally thrown round its neck and the first one released. The slip-knot of these nooses have to be secured at the right point round the neck by a small cord to prevent them drawing too tight and strangling the calf.

The youngsters do indeed give an amount of trouble out of all proportion to their size, whilst their loud cries and petulant behaviour are a great contrast to the silent and dignified manners of full-grown ones. Thus all the elephants will be secured and after large cables have been put round the necks of the big ones, they are all marched out tied to one or two *kumkis* according to their size and are then fastened in a large clearing among the trees where the undergrowth has been removed. Here they are fed and taken care of for some time when efforts for taming them are put in hand. This method of capture is adopted in Ceylon also, where the enclosure is called "*Crall*".

Taming of Wild Elephants.—This is a difficult work in the department often attended with danger. After roping the elephants in the stockade with the help of *kumkis*, they are brought out and picketed in the stables. For nearly two days, the new captives through dejection and sorrow, sparingly eat food but drink water as usual. Immediately after they are picketed they kick and try to reach the capturers. In order to prevent this, ropes are tied to their body and legs. From the third or fourth day legs and necks, through the tension of the ropes, are cut and swell, when it becomes necessary to change the ropes from one leg to the other or change the places. Lazy and careless mahouts leave the ropes on the wounds. But the supervisor or the veterinarian should arrange to prevent the ropes touching the sores, otherwise maggots will soon collect in the wounds. It is highly necessary for the veterinarian to keep a good stock of antiseptics and carbolic oils and washes to prevent maggot formation and induce healthy granulations and thus bring about speedy healing. In former days when a veterinarian was not available, the mahouts would keep a large stock of medicine prepared with mud, turpentine, kerosene oil, carbolic acid, sometimes oil, lime, tobacco and other ingredients in the shape of paints and cover the wounds once in two hours with a cloth brush at the end of a stick. It takes a month for the wounds to heal. Unfortunately, if elephants begin to kick the ground from anger (as some do) with their toes and hurt that part, it becomes very difficult to cure it and the animals die from inflammation.

About a week after, corn put in grass and tied in small bundles called "Kuchera" is thrown before the animals in the evenings to induce them to familiarity and accept coaxings. On the expiry of ten days or a fortnight, a training process begins and it is called "*jorekhuloyi*" by the mahouts. The men in the beginning stand at a distance and brush the body of the animal singing different songs. The elephants get quite bewildered at this process and try their best to kick and rush at the tormentors.

Before the process begins, ropes are tied to all the legs thereby restricting their movements. This process of taming is carried out five times a day.

The elephants soon become tame by night training as they will recognize the human voice better at night than during the day. A week after, the men gradually approach the elephants and begin to brush the body with hands and twigs and to ride them from behind after a time. On the first day, the elephant shakes the body trying to throw off the man but gradually receives him on its neck. The elephants feel very ticklish but get gradually used to it ; after twenty days, they are taken out by the side of *kumkis* for a walk and taught to imitate the *kumkis* in stopping, walking, etc. while in water they are made to sit by pressing the back with a stick, whenever these processes are observed; the usual expression for sit, walk and stop are repeated on each occasion which these animals remember and obey. The chief qualities of elephants are docility, gentleness and patience. They never refuse to do what they are required to do. These animals, although they have huge and powerful bodies, are subordinate to men from timidity.

In concluding this note, no information on (1) the type of Chamarajanagar Forest elephants (short and thick set), as compared with Kakankote elephants (tall and weak-bodied), (2) feeding of elephants, (3) finding their age, (4) their fecundity, (5) period of delivery, (6) daily habit, (7) breeding of elephants, (8) musty elephants, (9) diseases of elephants, (10) treatments, etc., has been set forth.

A DOCUMENT
WITH THE EARLY REVENUE OF BOMBAY.

By Sylvester Lobo, Esq.

"If we turn our attention" writes Dr. G. da Cunha, "to the times when the Portuguese took possession of Bombay, we shall find, both from the indigenous *bakhars* (chronicles) and tradition, as well as from a few manuscripts left by the Portuguese themselves, that Bombay, properly so called, was simply one of a cluster of rocky mountainous islets scattered in the waters of a muddy estuary. Such a group of parched and desolate islands as they then appeared to be, although worthy of the study of a geologist, could not have at all excited the ambition of a conqueror and consequently their political history has from the beginning merged in that of the adjacent mainland; with which, and with the more important islands lying to the north, it has shared the vicissitudes of conquest, and the rule of numerous dynasties and chieftains."[1]

The study into the early condition of this desolate island is both interesting and instructive to a research student. Varied has been its growth and development under different rules and dynasties, and steady has been its progress until we find it to-day as one of the world's best cities both in beauty and wealth. But though from times immemorial this swampy island was inherited by the Hindus, from whom it passed into the possession of Muhammadan invaders and was finally ceded to a foreign power by the Sultan of Gujrat in 1534, it had not in the least showed the signs of prosperity and higher development that it has done under the British, whose intelligence and enterprise has raised it in the present day to its proud position as the modern capital of one of the great Presidencies of India.

Apart from any reference to the political history of Bombay it is worth gleaning into its past when the island comprised a few hamlets, gardens, plantations and large swampy tracts of land partially overflowed by water and traversed by various creeks making it an ideal spot to the sportsman; while the very shallow waters offered abundant game to the net of fisherman. Past annals fail to disclose evidence as to any material worth at this stage. The history of the produce and revenue goes back as far as its acquisition

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1. da Cunha, *Words and Places in and about Bombay, Ind. Ant.*, III, p. 293.

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by the Portuguese,[2] and though under an able administration of distinguished statesmen of a foreign nation for a period of more than a century, it failed

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2. The ancient constitution of Bombay under the Portuguese was feudal. Lands were measured and parcelled out among the officers of the State and other distinguished inhabitants reserving a small quit-rent amounting to from four to ten per cent of the ordinary rental and in return they had to furnish military service to the king. In the general distribution of lands, like the seven villages of Bassein, (*Cf.* Xavier, *Gabinette Litterario das Fontainhas*, IV, p. 217 ; da Cunha, *The Origin of Bombay*, p. 207), Bombay was also divided into seven villages namely,— Mahim, Bombaim, Parell, Varella, Syva, Varell and Mazaguão. Mahim was the *Cacabe* or head of the group and had its own *mandovim* or custom-house. It is stated that it was not leased as a whole to any one but it is believed to have been parcelled out into many leases.

Soon after the cession of the island to the Portuguese in 1534, the *Cacabe* of Mahim was rented for 36,057 *fedeas* (one *fedea* is equivalent to 15 *reis* or four pies). The *mandovim* of that *Cacabe* was let out for 37,975 *fedeas*. The island of Mazaguão (Mazagon) yielded 8,500 and Mombaym (Bombay) 17,000 *fedeas*. The four villages, Parell (Parel), Varella (Vadala), Syva (Sion), and Varell (Varli or Worli), were granted by D. João de Castro, the Viceroy, to one Manoel Serrão for 412 *pardaos* (*pardao* is about 300 *reis* or nearly eight annas). Some writers distinctly say that the Franciscan Missionaries possessed four Churches in Bombay .....the second was at Parel, eventually changed into the former Government House ; but the demesnes of Parel belonged to the Jesuits. (da Cunha, *op. cit.*, pp. 143, 204.) Tieffentaller also states that the Jesuits had landed properties at Parela ; their estate together with the improved buildings is now known as the 'Parel Government House'. (Noti, *Joseph Tieffentaller*, p. 8.) But at the time of the cession of the island to the British Crown, the Jesuits of Bandra were the sole possessors of the first three of these villages ; and the village of Worli which formed an annexe of the Manor of Mazagon was the property of the family of the Tavoras. Dr. da Cunha surmises that after Manoel Serrão, the village of Worli also was granted to the Jesuits who exchanged it with Antonio Pessoa for Bandra and Khar in Salsette, and was finally sold to Antonio da Sylva, yielding 34 *mudas* of rice and representing a yearly revenue of 700 rupees. (da Cunha, *op. cit.*, pp. 222, 224.) It is also recorded that the *mandovim* of Valupuecer (Walkeshwar) was rented to one Possagy for sixty *fedeas*.

Simão Botelho, the *Vedor da Fazenda* (Comptroller of the Treasury) who has written the *Tombo de Estado da India* or Register of Rents, besides giving us general information, has left minute details regarding the quit-rent of the distributed places. Dr. da Cunha and Conde de Ficalho, two careful researchers, referring to his records state that the quit-rent of the island of Bombay in 1534, stood at 14,400 *fedeas*, when it formed part of the kingdom of the Sultan of Gujrat. In 1535, under the Portuguese rule, it was raised to 17,000 *fedeas* ; in 1536 to 23,000 *fedeas* ; in 1537 to 29,000 and in 1538 to 27,000. During these four years the rent was collected directly from the farmers, but in the year 1539 the island was rented for 26,292 *fedeas* ; in 1540 for 28,190 *fedeas* : in 1541 for 28,100 : in 1542 for 30,000 ; in 1543 for 31,000 ; in 1544 for 38,500 ; in 1545 for the same amount ; in 1546 for 1,375 *pardaos*; in 1547 the island yielded the same, but in 1548 owing to the zeal of Simão Botelho, the rent was raised to 1,342½ *pardaos* and the island was leased to one Mestre Diogo. After him it is supposed to have passed to the famous botanist Garcia da Orta who is presumed to have paid the same rent. (*Cf.* da Cunha, *The Origin of Bombay*, p. 107 ; Conde de Ficalho, *Garcia da Orta e o seu tempo*, pp. 272-273.) The precise date of the grant of the island to the physician is unknown and various doubts have arisen on da Orta's right of possession of the island. One of the reasons for doubt is that an ardent and careful worker like Senhor J. H. da Cunha Rivara was unable to discover among the records of the Portuguese Archives the *alvara* (instrument) by which the grant was made to the botanist. Moreover the whole island was granted to one person during da Orta's life. Finally it was stated by the physician that it had been granted to him in perpetuity. The latter two questions have been sufficiently discussed by various writers. (*Vide* da Cunha, *The Origin*, *loc.*

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to show any signs of those undreamed of possibilities it actually held in store of greater achievements, which we have steadily noticed during its rapid development within the last two centuries.

The Union of Charles II, the King of Great Britain, with D. Catharina of Portugal, added to the British Crown what we term to-day the *Urbs Prima in Indis*. As fights and disputes are the rule in the fate of great cities when passing from one hand to another, the island of Bombay, although peacefully ceded, did not fail to witness a crisis during its transfer from one foreign power to another. It had to be ceded legally as a part of dowry of the Portuguese Princess according to the treaty of 23rd June 1661 between Portugal and England. Instead the island became a subject of hard contest between the two alien nations for a period of four years when finally the instrument of possession was signed by Humphrey Cooke and the Portuguese authorities of Bassein on the 18th of February 1665 in the Large House of D. Ignez de Miranda.[3] Since then, the island formally ceased to be one of the settlements of the Portuguese Power in the East.

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cit.; Conde de Ficalho, *Garcia da Orta*, *loc. cit.*; Soares, *Garcia da Orta, a Little Known Owner of Bombay*, *J.B.B.R.A.S.*, XXVI, pp. 223-224.) As regards the first statement, it would be logically incorrect to say that because an industrious researcher like Cunha Rivara failed to obtain the deed of grant, the physician's claim over the island was uncertain. I may quote here one instance respecting the papers of the said Archives. When the same researcher was requested (*Cf. O Oriente Portugues*, Vol. I, p. 139; Saldanha, *Historia de Goa*, Vol. I, p. 310) to find out some documents on the early relations between the Emperor Jehangir and the Portuguese, which were believed to be existing according to some early reference (Carvalho, *Questões da India*, p. 447), he clearly declared that the only existing document of the diplomatic relations between the two powers was the firman of 1714. But in fact, the Rev. H. Heras, S.J., during his first visit to the Archives was able to unearth two earlier documents relating to the same subject; one being of 1615 and the other of 1667. *Cf.* Heras, *Jahangir and the Portuguese*, *H. R. C.*, Lucknow Meeting, pp. 72-80. The number of papers is so vast and in such a dilapidated condition that I may definitely state that much light is yet to be thrown on this particular subject.

3. At the time of the cession of Bombay to the British this lady was the sole proprietress of the *Cacabe* of Bombay with its cocoanuts, rice-fields and the duty of *Bandrastal* (*Bandrastal* is a duty or tax on the right to distil spirit from the palm-juice. *Cf.* da Cunha, *loc. cit.*, p. 263) and she is designated in the documents of the time as the *Senhora da Ilha*, Lady of the Island. The Large House which is mentioned above previously belonged to the famous physician Garcia da Orta who has been proved to be the former landlord of this beautiful island with its *quinta* and his manor-house, surrounded by spacious pleasure grounds, with a garden planted with choice fruit trees, where the rich naturalist lived and used to rest during his professional visits to the Sultans and Princes of the North who sought his advice, especially to the Court of Ahmednagar where he was in real intimacy with the Sultan's son. (*Cf.* da Cunha, *op. cit.*, p. 101; Soares, *Garcia da Orta*, *loc. cit.*, p. 225; Conde de Ficalho, *Garcia da Orta*, p. 236.) Dr. Fryer who was in Bombay in 1673 remarks: 'About the house was a delicate garden voiced to be the pleasantest in India.'

Although it has been clearly proved that the island was once the sole property of Mestre Garcia, the date of the grant of the island and the period of its inheritance by the botanist has remained unanswered till the present. Historical evidence is obscure from the time of its lease

From the documents we have been able to peruse on the subject, it is not evident that any official statement of the revenue of Bombay was presented earlier than 1667. At the close of this period, two years after the transfer was made to the British Crown, Captain Henry Gary, the succeeding Governor after the death of Sir Gervase Lucas, transmitted with his letter to the King the following revenue of the island as improved by Sir Gervase Lucas and himself :— [4]

		Amount of Rent in Rupees.	Amount of Rent in Xeraphins.
Rent of Mazagaon[5]	...	6,438 2 13	9,300 0 40
,, Mahim	...	3,321 1 69	4,797 2 45
,, Parel	...	1,645 3 54	2,377 1 56

to Mestre Diogo till it became the property of the famous Lady of the Island whose name is frequently mentioned in the documents of the time of its cession to the British Crown.

Dr. da Cunha, who is a keen student of the history of Bombay, discloses the text of an old official document of the 16th century, written in Portuguese. This document contains a list of all the villages, cocoanut trees, etc.. which were made over to the British at the time of the formal cession of the island on the 17th February, 1665, before the public notary of Bassein of which a written agreement was signed by the Commissioners of the two nations. I give hereunder the translation of the list :—

Bamonavalle & Celtem : (*Pacaria*) Income, 15 *murās*, 4 *parās*, & 11 *adolis* of batte (rice).
Bandrastaes : Two hamlets of the distillers of toddy of the *palmeiras bravas*.
Bombaim : (*Cassabe*) 40,000 palm-trees of private persons and 5,000 belonging to the Company.
Coceo : *Ilheo* (seaholm) at the extremity of the island.
Colvarias : Hamlets of the Kolis with the names of the villages to which they were belonging. Varoy—Parella—Sião—and Dirgavi.
Diravy : (*Pacaria*) Income, 8 *murās* and 8 *parās*.
Maim : (*Cassabe*) 93,000 *palmeiras mancas* ; and some oarts (gardens).
Mazagam : (*aldea*) Income, 184 *mur.* and 250 *palmeiras bravas*
Matuguem : (*aldea*) Income, 65 *mur.*, 4 *par.* and 3 *adol.* and 10 *palmeiras bravas*.
Nagam : Income, 42 *mur.*, 15 *par.* and 15 *adol.*
Parella : (*aldea*) with its *Pacarias*—Boyvares.
Patecas : Island of Mazagão.
Romalla & Salgado : Income, 150 *mur.*, 15 *par.* and 15 *adol.*
Rauly & Matuguem : (Salt-pits).
Siam : (*aldea*) Income, 54 *mur.*
Siury : Vadalay.
Vadalla : with its *Pacarias* Syory-Gon-Wady. Income, 75 *mur.*, 4 *par.* and 4 *adol.*
Varoly : (*aldea*) Income, 34 *murās*.
Cf. Ind. Ant., III, p. 249. (For the explanation of the terms, *vide* the end of the article.)

4. Malabari writes that this valuable statement has been taken from the MS. copy presented to the Bombay Geographical Society. Malabari, *Bombay in the Making*, p. 106. Campbell, *The Bombay Gazetteer*, XXVI, p. 24.

5. Mazagon is the only place whose history, the writers conclude, can be traceable from the earliest times. It is said that owing to the excessive liberality of the Viceroy, D. João de Castro, Antonio Pessoa was granted five villages and one island for the annual rent of little over 900 gold

	Amount of Rent in Rupees.	Amount of Rent in Xeraphins.
Rent of Vadela ...	1,203 1 20	1,738 0 40
„ Sion ...	547 0 40	790 0 60
„ Veroly ...	395 1 48	571 1 34
„ Bombaim ...	4,392 1 80	6,344 2 61
„ Tobacco staut or Frame[6]	6,611 2 16	9,555 0 00
„ Taverns ...	1,661 2 16	2,400 0 00
The account of Customs ...	12,261 2 16	18,000 0 00
„ Cocoanuts ...	12,261 2 16	18,000 0 00
	50,640 0 88	73,870 1 18
More may be advanced ...	801 3 58	1,129 1 62
Total ...	51,542 0 46	75,000 0 00

Which at 13 xeraphins for 22s. 6d. sterling amounts to £ 6,490-17-9. Besides this account of the revenue Mr. Gary described in his letter the state of the treasury at the time and the measures he had adopted by enforcing new provisions and adding such men to the garrison as he could collect for its defence. The amount in the treasury stood at 16,000 xs., or £1,384, and the garrison numbered 285. All these were composed of French,

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pardaos, while they used to yield, before this grant was made, not less than 2,500. Botelho vehemently protested against this, seeing it would cause considerable loss to the treasury; but unfortunately his protest had no effect. The island which was granted besides the said villages is presumed to be Mazagon. Previous to its lease in 1548, Mazagon was simply rented annually from 1534 to 1547, varying 8,500 *fedeas* in 1535, 11,500 *fedeas* in 1536, 15,000 in 1543, to 510 *pardaos* in 1544, rising at last to 550 *pardaos* in 1547, when the *arrendamento* or lease ceased. It was then *aforada* or granted for a quit-rent of 195 *pardaos* in gold and 3 *tangas* in silver to Antonio Pessoa and his wife. After the death of Antonio Pessoa in 1571, the island was leased to Lionel de Souza who was married to D. Anna Pessoa, daughter of Antonio Pessoa, being allowed to hold the Mazagon estate for the same annual rent as his father-in-law, namely, 195 *pardaos* in gold and 3 *tangas* in silver. Then after passing through the hands of two or more grantees during the course of one and half a century, in 1727 it came into the possession of D. Senhorinha de Souza e Tavora, then living as a *foreira* or tenant in Bassein. At last in 1731 it was sold to one Antonio da Silva, an inhabitant of Bombay, for 21,500 xeraphins. In the year 1767 the celebrated Manor of Mazagon, which, from 1548 to the time of the cession of the island, had remained entire and flourishing, dwindled down to a mere fraction and on its gradual decline this fragment was in the same year divided into various lots by the Honourable Company. (da Cunha, *De Origin of Bombay*, pp. 207, 224; Malabari, *op. cit.*, p. 379.)

6. In the other copy of the *Bombay Gazetteer*, the words are "Tobacco stanck or Farm" which, I suppose, are correct. Mr. Edwardes says that *Stanck* is a corruption of the Portuguese word *estanque* which means a shop. *Estanque de tabaco* means a snuff or tobacco shop and *estanqueiro* is a monopolist or a patentee. Therefore, it signifies the farming monopoly or the farm of the tobacco. (*Cf.* Edwardes, *The Revenue of Bombay, Ind. Ant.*, LIV, p. 5.)

Portuguese and natives. Only 93 English officers were on the list.[7] Also he stated that the island when properly cultivated would be very effective. Mr. Gary had followed the policy of his predecessor Sir Gervase Lucas and was making every effort to increase the king's revenue by some improvements without imposing any discouraging taxes on the inhabitants. But during Mr. Gary's government some friction arose between the Bombay and Surat authorities, one of the chief points being, as is shown by some writers—who nevertheless assigned other motives for the transfer of the island—the granting of passes to the native ships. This friction ended in bestowing the island, by the Royal Charter of Charles II of the 27th March 1668, on the Honourable East India Company at an annual rent of £ 10, payable on the 30th September of each year to the British Crown.

We have also on record a statement of the revenue during the first year of the Honourable Company transcribed by Sir William Foster of the India Office which was worked into an article for *The Indian Antiquary*, by the late Mr. S. M. Edwardes, who spared no effort in solving almost all the vernacular terms in the statement. Unfortunately it is beyond the scope of this paper to study in detail the text and explanation of the document; yet an outline of it to give an idea of the precious statement may be attempted :—

Yearly Savastall[8] or Rent Rowle of Bombaim and Jurisdiction.

Bombaim : 82 *murās*, 1 *parā* and 10 *adolains*,[9] etc.	Xs.	15,374	1	61
Rents : of Tavernes (taverns) imports and Stanck of tobacco imports	,,	12,675	0	00
Customs about	,,	18,000	0	00
Mazaga (Mazagon) 225 *murās*, etc. ...	,,	8,838	0	48
	Xs.	54,887	2	29

Yearly Savastall or Rent Rowle of Mahim and its Jurisdiction Drawne out the 31st July 1668.

Maym (Mahim): 24 *mur.*, 4 *par.* and 16 *adol.*, etc.	Xs.	14,195	1	14
Matunga: 55 *mur.* and 8 *par.*, etc. ...	,,	814	0	08
Dozzory (Dharavi): 8 *mur.* and 2 *par.*, etc. ...	,,	267	0	64

7. Campbell, *The Bombay Gazetteer*, XXVI, p. 24.

8. *Sevastae* is, according to Dr. da Cunha, a Marathi name for a tax of 1¼ per cent, from *savā* meaning one and a quarter. Mr. Edwardes surmises that the word *Savastall* has been loosely applied to rent or assessment in general. *Cf.* da Cunha, *op. cit.*, p. 176, and *Ind. Ant.*, LIV, p. 4.

9. Although the amount of money represents here the rents of various other articles, the produce of rice alone is shown so as to form a comparison between the couple of documents we have transcribed in the text of the above article.

Pero Vazty his Patty[10]: 54 *mur.* and 5 *par.*, etc.	Xs.	839	1 76
Mucher & Yas[11]	„	94	2 17
Parella : 148 *mur.*, etc.	„	2,435	1 18
Vadala : 116 *mur.*, 22 *par.* and 18 *adol.*, etc. ...	„	1,764	1 02
Sury : 1 *mur.*, etc.	„	352	0 00
Pomela (salt-pit)	„	21	1 35
Coltem & Bomanelli[12] : 14 *mur.* 14 *par.* and 12 *adol.*, etc.	„	211	0 65
Very (Worli) 32 *mur.*, 12 *par.* and 10 *adol.*, etc.	„	1,204	1 65
	Xs.	22,200	0 44

Taking into account a xeraphin as equivalent to 1s. 6d. sterling, Mr. Edwardes fixes at this date (1668) the total revenue of Bombay a little over £ 4,000 and of Mahim and its dependencies to about £ 1,665. But if we value 13 xs. for 22s. 6d. sterling which we have shown in the previous case, the difference in the revenue of the two years shows a very insignificant variation. These are the only documents we have been able so far to obtain although many references have been found to the existence of others. Mr. Edwardes refers that, according to Foster's information, a report was made by Oxenden on the state of Bombay in the year 1669, but regrets that up to the present he has not been able to discover a copy of it. Perhaps further researches might bring to light the required information.

In all that has been said we have offered to the reader information gathered from English sources although the earlier documents bear reference to the works of the old Portuguese writers. But now we present a statement of the early revenue of Bombay during the British period acquired from a foreign source. It is a letter written by the Portuguese Viceroy, D. João de Saldanha da Gama, in 1727, enclosing therewith a detailed valuation report of the landed properties of private individuals of Bombay. The document is very curious and interesting because of the information it presents of the island which was secured by a foreign authority about fifty years after it had passed from its previous owners to the English. And it gives an account which may be taken as fairly accurate since it was carefully gathered for the purpose of the re-purchase of the island by the Portuguese sovereign.

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10. *Pero Vazty his Patty* is assumed by Mr. Edwardes as Pero Vaz's assessment, from Marathi *paṭṭi*, 'cess', 'tax' or in the other sense 'ground', 'land'. *Ind. Ant.*, LIV, p. 6.

11. *Mucher & Yas.* It is difficult to identify these two places. The only conclusion arrived at by Mr. Edwardes after careful study is that they were two small villages adjacent to the 'drowned' lands, between which there was a ferry-communication at high tide. *Ibid.*, p. 6.

12. Bamnavale & Coltem are two places to the north of Parel. *Ibid.*, p. 6.

Since the time Bombay was handed over to Sir Humphrey Cooke in satisfaction of the claims of the dowry of the Portuguese Queen, the relations between the Portuguese and English administration in India, especially respecting the landed properties of Bombay, were far from friendly. Vexations and bickerings instead of diminishing were more or less on the increase and it appears that the Portuguese sovereign in order to put an end to the ceaseless complaints he was receiving from his officers and other distinguished inhabitants in India about the misunderstanding regarding the manorial rights of their properties at the hands of the English, made up his mind to get back the island if he could, by payment of a just price for it.

Campbell, with reference to the said document, consulting the *O Chronista de Tissuary*, writes in his monumental work entitled *Bombay Town and Island Materials:* 'Between 1726 and 1739 special enquiries in connection with a scheme for the purchase of Bombay by the Portuguese Government supply interesting estimates of the revenue of the town and island ;' and publishes partly a translation of the said document.[13] Dr. da Cunha also alludes to a similar request made by the Portuguese authorities and writes in his *Origin of Bombay* that the King of Portugal had written to the Viceroy, Count of Lavradio, in Goa, on the 23rd of March, 1671, requesting him by the first monsoon to send a detailed account of the values of the estates of private individuals of Bombay. The information was required for the settlement of the account of the second million of the dowry of the Queen of Great Britain as settled between the Envoy, Robert Southwell, and the Marquis of Niza and Marialva. But the requisite information was not supplied at the time on account of the limited time in which it was to be submitted, but an interesting report was made in the reply to the King explaining the state of dissatisfaction of the people at the misrule of the English.[14]

The following letter[15] was written by D. João de Saldanha da Gama, the Viceroy of Goa, to His Majesty the King of Portugal, on the 18th of January 1727, including therewith a statement of the revenue of the island of Bombay :—

Sir,

The attached information which I am submitting to Your Majesty is the most accurate I was able to obtain without revealing that secret as I had been instructed by Your Majesty. But by this it is not possible to adjust more value than the income, relying on the estimate of those that possess the fortifications and on the magnificence of the other buildings. It would be

13. Campbell, *Bombay Town and Island Materials*, III, p. 305.
14. da Cunha, *The Origin of Bombay*, p. 315.
15. Cunha Rivara, *Archivo Portuguez-Oriental*, Fasc 6, *Supplement*, pp. 287–292.

very useful to the service of Your Majesty if the measures we intended to take in these matters had been followed ; because in leaving the trade of that island on the account of this State, it would not only have profited the Portuguese Commerce by introducing all sorts of articles which are consumed in the dominions of Your Majesty and for which the Company had the full control, but also all those that are carried across the Ghauts into the kingdoms of the Marathas and the Moguls.

As regards the money which this State can have ready to make up the required capital, it seems to me that it can be easily collected from the income of this State in the following manner:—Your Majesty could allow all your Christian subjects to purchase the estates that are found incorporated in the Company according to their means, and judging from the state in which they are living, they will not be able to produce more than five hundred to seven hundred thousand *pardaos* ; for the rest of the amount Your Majesty should allow the Hindus to purchase, permitting them to retain the privileges which the English have granted to them. All this is convenient not for this object alone but also in the interest of those who are living in that island, where they have emigrated from the dominions of Your Majesty, lest they should leave it for the horror of the Inquisition. And since these men have attracted by their credit all the trade of Asia to that island, if they leave it for good they will carry it away with them and consequently the Customs of Your Majesty will remain without this source of revenue.

The Fathers of the Society will appeal for the restitution of their income, and I submit that Your Majesty ought not to accede to their request without receiving from them their (estates) value, as they have means enough to pay for them ; and when Your Majesty allows them to purchase all the remaining estates, I am sure that they in their own interests will not hesitate.

As regards the payment of the fortifications and the buildings, it seems to me that it will not be possible to succeed in this without the help of Your Majesty. It reminds me, however, that the Armenian Christians have made some requests to the Government of India to grant them a port whence they would erect at their own expense the necessary fortifications for its defence, subjecting themselves in everything else to the laws of Your Majesty, and as these people are oppressed by all nations, whether European or Asiatic, I have no doubt but they will embrace this project as soon as it is proposed to them. In case it fails by these means, Your Majesty will be necessarily forced to arrange the amount through your Royal Treasury, by sending either to this court or to this State the money in *patacas* [16] which

16. *Pataca* is a sort of ancient Portuguese coin worth 16 *vintems*. A *vintem* is equivalent to $1\frac{7}{20}$d.

produces fifty per cent gain, or in gold [17] which produces thirty per cent, and in order that Your Majesty may recover these expenses it may be easily done by means of obtaining from those Customs a certain percentage to be collected and set apart in a safe for the purpose of remitting it to this court in those articles which are in demand there, and which will also yield a good profit.

God preserve the most high and most powerful person of Your Majesty for many happy years. Goa, 18th of January, 1727.

Signature of the Viceroy: *João de Saldanha da Gama.*

Information of the Estimated Acquisition Value of Bombay.

The Island of Bombay appears to be made up of the following landed estates:

The Aldea (village) Mazagão (Mazagon) which is granted to D. Senhorinha de Souza e Tavora, residing in the city of Baçaim (Bassein), yielding more or less 184 *murās*[18] of *batte* (rice) and 250 *palmeiras bravas*,[19] will fetch an annual income of more or less 4,000 *xerafins*,[20] and will be valued 40,000 xs. including the *foros* (quit-rents).

The Aldea Varoli (Worli) which is granted to one Antonio da Silva, an inhabitant of Bombay and now employed in the service of the Company as a clerk in the fortress of the same city and who acquired the same by purchase from the said D. Senhorinha, yielding more or less 34 *murās* of rice, will be valued 7,000 xs.

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17. Campbell's version shows a slight error in this sentence. The original is *ou em ouro que produz trinta*, meaning ' or in gold which produces thirty per cent'. The word *ouro* must have been taken for *outro* which means 'other' and hence the version ' or in some other coin which might yield thirty per cent'. Campbell, *Bombay Town and Island Materials*, III, p. 307.

18. *Murā* is in Marathi *muḍā* and in Konkani *mudó*. A sort of spherical bale made of grass utilized to preserve cereals, especially rice. It was also used to transport cereals as a substitute for gunny bags. And since these bales are intended for sale, they hold a fixed quantity varying according to the different places, therefore they are used as a measure in various places in India. An actual *murā* contains ordinarily half candy or ten *curós* (one *curó* is equivalent to 2 *pailis*). According to Antonio Nunes, one *murā* contains 3 candis of rice but Candido Figueiredo shows 735 *litros* (*litro* is 2 seers) equivalent to one *murā*. Dalgado, *Glossario Luso-Asiatico*, II, p. 81.

19. *Palmeira brava*: Borassus Flabellifer, *Linn.*, the Palmyra Palm or the Brab-tree (*tál*, *tád*, etc.). The name 'brab' is derived from the Portuguese *brava* 'wild', 'uncultivated'. Watt writes that it is now known that the Talipot Palm of the older writers was not *Borassus* but *Corypha Umbraculifera*. *Borassus Flabellifer* is an erect graceful palm, dioecious, with terminal crown of fan-shaped leaves. *Corypha Umbraculifera* is the true Talipot Palm (*tala*, *tali*, etc.). A tall fan-leaved palm of Ceylon and the Malabar Coast cultivated in Bengal and Burma. *Cf.* Watt, *The Commercial Products of India*, pp. 169, 170, 428; Dalgado, *Glossario*, II, p. 149, 510; Blatter, *The Palms of British India*, pp. 72, 174.

20. *Xerafim* was an old Portuguese silver coin varied from 300 to 360 *reis*. This term is a corruption of the Arabic *ashrafī* or *sharīfī*, ' noble', which was applied properly to the gold *dīnār* of Egypt and also to the gold *mohur* of India. *Hobson-Jobson*, pp. 38, 974.

The Aldea Parella (Parel) with its *Pacarias*,[21] Boyvary, Pomala and Salgado, yielding 154 *murās*, 15 *parās*[22] and 15 *adolins*,[23] and some *palmeiras bravas* of little value, will fetch an annual income of more or less 4,000 xs. and will be valued 40,000 xs. including the *foros*. It is said, this Aldea now belonging to the Company was once belonging to the Jesuit Fathers.

The Aldea Vadalla (Vadala) and its *Pacarias*, Iyory and Gonvary, yielding 75 *murās*, 4 *parās* and 4 *adolins* of rice, and some *palmeiras bravas* of little value, will fetch an annual income of more or less 1,900 xs. and will be valued up to 19,000 xs. including the *foros*. Also this Aldea belonged to the Jesuit Fathers of the Arga College and at present belongs to the Company.

The Aldea Nagão (Nagam) yielding 42 *murās*, 15 *parās* and 15 *adolins* of rice, and some *palmeiras bravas* of little value, will fetch an annual income up to 1,000 xs. and will be valued 10,000 xs. including the *foros*. This Aldea was of the Jesuit Fathers and at present belongs to the Company.

The Aldea Matuguem (Matunga) yielding 65 *murās*, 4 *parās*, and 3 *adolins* of rice, and 100 *palmeiras bravas* of little value, will fetch an annual income of 1,700 xs. and will be valued 17,000 xs. including the *foros*. Also this Aldea was of the Jesuit Fathers and is actually of the Company.

The Aldea Sião (Sion) which belonged to Miguel Murzello Coutinho and at present belongs to the Company, yielding 54 *murās* of rice, and some *palmeiras bravas* of little value, will fetch an annual income of 1,400 xs. and will be valued up to 14,000 xs. including the *foros*.

The *Pacaria* Daravy (Dharavi) yielding 8 *murās* and 8 *parās* of rice, and some *palmeiras bravas* of little value, will fetch an annual income of 225 xs. including the *foros*, and will be valued 2,000 xs. This also belonged to the Jesuit Fathers and is actually of the Company.

The *Pacaria* Bamnavaly and Coltem, yielding 5 *murās*, 4 *parās* and 11 *adolins* of rice, and some *palmeira bravas* of little value, will fetch an annual income of 400 xs. and will be valued up to 4,000 xs. including the *foros*. This also belonged to the Jesuit Fathers and is at present of the Company.

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21. *Pacaria* is a suburb of a city inhabited by the poorest classes who dwell in small huts in the Konkan. From Marathi-Konkani *pākhādī* properly signifying 'adjacency', 'contiguity' derived from *pākh* of Sanskrit *paksa* 'wing'. Dalgado, *Glossario*, I, p. 126.

22. *Parā* is in Malayalam *para* and Neo-Aryan *paḍa*. A measure of capacity used for cereals, etc., of variable quantity in India. It holds about 20 *litros*. Lopes Mendes writes that a *parā* contains 8⅓ *paiās*. *Paiā* is equivalent to 4 seers (Damaun). Lopes Mendes, *A India Portuguesa*, II, p. 255. According to Macedo Pinto, one *parā* is equivalent to 20 *litros*. Macedo Pinto, *Breves Estudos*, p. 10. Dalgado, *Glossario*, II, p. 168.

23. *Adolim* is from Marathi *adholī* derived from Sanskrit *ardha* 'half'. It is a measure of capacity equivalent to 2 seers. *Ibid.*, I, p. 12.

The *Cassabè*[24] of Bombay. *Cassabè* means a grove of trees and oarts. This *Cassabè* belongs to various freeholders and will contain, besides the other trees, up to 40,000 *palmeiras mansas.*[25] The Company possesses in that from five to six thousand palm-trees belonging to various landlords and the value of each palm varies from six to nine xs. according to its quality.

The *Cassabè* of Mahim will contain up to 70,000 *palmeiras mansas.* The Company possesses some properties in this *Cassabè* which belonged to the Jesuit Fathers and other freeholders and these will be 23,000 *palmeiras mansas.* Also it possesses some oarts which were taken over by the Crown in default of heirs. Moreover it is stated that in these two *Cassabès* there are some plots of rice which will yield 592 *murās* and are held by various landlords; from these the Company will have 18 *murās*, 7 *parās* and 6 *adolins*, which belonged to the Jesuit Fathers; and 18 *murās*, 5 *parās* and 4 *adolins* which were of other landlords; which were acquired by the said Company under some pretence or other, or for failure to pay revenue dues. The Company also possesses some plots of rice in the *Cassabé* of Bombay under the same pretence and claims, which will yield from 8 to 10 *murās.*

Moreover, there are some salt water plots of rice in the island of Bombay which are recent and cultivated now by some people during the British dominion and will fetch an income out of *foros* of more or less 200 xs. to the Company.

Besides the estates mentioned above there are some *marinhas*[26] of salt in the same island, *viz.*, Rauly in the Aldea Matunguem which produces 36 *raixas*[27] of salt annually and all at an ordinary rate gives an income as 1,200 xs. and in the same rate will be valued up to 12,000 xs. including the *foros.*

The *arminhas* of Siury (Sewri) and Vadalay (Vadala) in the *Aldea* and *Pacaria* of the same names will produce 34 *raixas* of salt which gives an income of 1,100 xs. annually and will be valued more or less 11,000 xs. including the *foros.* There are some more *marinhas* which are private ones and will produce from 9 to 10 *raixas* of salt.

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24. *Cacabé* or *Cassabe* is derived from Persian *khasabeh* and Marathi *kasabā* meaning the principal place of a *pergunnah* or district. da Cunha, *The Origin*, p. 95. Dalgado, *Glossario*, II, p. 479. *Hobson-Jobson*, p. 283.

25. *Palmeira mansa*: I cannot find a botanical name for this palm. Mr. Edwardes takes the word *manca* in Portuguese, meaning 'defective', 'imperfect' and identifies the trees as 'palm-trees not fully grown'. But the word which perhaps through an error written as *manca* should be either *mança* or *mansa* 'not wild', 'sative'. Therefore *palmeiras mansas* must mean 'palm-trees that are cultivated'. Edwardes, *The Revenue, Ind. Ant.*, LIV, p. 36.

26. *Marinha* is a salt-pit or a place where salt is gotten.

27. *Raixa* is a heap of salt of a certain quantity gathered at the salt-pit. From the Marathi *rāx* of Sanskrit *rāxi* 'heap'.

At the end of the island to some part in the west, the Company possesses a place called *Ilheo* Coleo[28] which will be valued from 4 to 5 thousand xs.

There are besides in the island of Bombay various *Colluarias*[29] or hamlets of Colles (Kolis) who are fishermen, *viz.*, Bombaim, Mazagão, Varoly, Parella, Sião and Daravy. These *Colluarias* are annexed to the Aldeas of their names and therefore their description is not sent separately as its produce cannot be definitely ascertained. All belong to the Company, and will fetch an annual income up to 7,000 xs.

Also there are in the same island two *Bandrastaes*, *i.e.*, the right (*jus*) or power to extract the sap of the *palmeiras bravas* and *mansas*, and commonly known as *sura* (toddy) of which the country liquor is produced, namely, the *Bandrastal* of Bombay, which belonged to D. Ignez de Miranda, widow of D. Rodrigo Monsanto, is actually of the Company; and the *Bandrastal* of Mahim, which belonged to the Jesuit Fathers, also belongs to the Company. Both these *Bandrastaes* will fetch an annual income of 2,000 xs. and will be valued 20,000 xs. including the *foros*.

This is the most elaborate information which at present can be given of the estates of Bombay and for a clear explanation may be read as follows: This entire island yielded to the Royal Treasury out of *foros* at the time of the Portuguese dominion 5,000 xs. annually, when the English took possession of it in the year 1665; but in 1662 (*sic*)[30], the president of the Company being Gerardo Aunger, these five thousand were raised to twenty thousand including in those twenty thousand the said five thousand and the *foros* of the estates which at present belong to the Company.

The cause of this rise is not given as it has no bearing on the case.

Rents and Rights of the same Island.

In the year 1668, the Customs-Houses of Bombay and Mahim were being rented annually for 60,000 xs., in the year 1708 for 52,000 xs. suffering this decrease which can be understood owing to the reduction of the taxes of all the goods that entered therein; and since at present they run on the Company's account, its income is not definitely declared, but they will fetch an annual income of 55,000 xs.

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28. This place is now known as Colaba.

29. *Colluaria*: Actually this word seems to be a corruption of the Marath *kūḷvārī*, a labourer who is bound to the service of the landlord in the Konkan. The term is still current. But in the above text Mr. Edwardes' conclusion that the word is a corruption of *Kolivada* or *Kolivadia* 'hamlets of Kolis' seems to be correct. He applies it as a head-tax collected from the Kolis in return for the right to fish in the open bays of Bombay, Worli and Parel. Dalgado, *Glossario*, I, p. 298. Edwardes, *The Revenue*, etc., p. 4.

30. This date appears to be wrong. Gerardo Aunger was the Governor of Bombay in 1668.

The produce of tobacco leaves is being rented annually for 49,000 xs.

The produce of *urracas* or country liquor will be rented more or less for 12,000 xs. annually.

The *foros* of the lands of the City will fetch an annual income of 3,000 xs.

The passage fare between Mahim and Siāo will fetch annually more or less 1,200 xs.

There is no income at present of oil, provisions, spicery, cotton, and *bangue* (bhang) since the British have reduced it.

Fortresses of the Island of Bombay.

The fortress called *Castello de Bombaim* 'Bombay Castle,' situated in the city and surrounded by six bulwarks, is a modern structure begun in 1716. Its artillery is not known but it has been sufficiently garrisoned.

The fort called Dongrim *Cavalleiro à Cidade* 'point d'appui' is of little value.

The fort situated in the Aldea Mazagāo which is furnished with a sergeant and 24 soldiers has a small bulwark with 3 guns.

The fort Siury situated on the beach facing our Aldea Maula, is furnished with 50 *sipaes*[31] and one *sobedar*[32] and will have 8 or 10 guns.

The fort of Siāo facing our Aldea Corlem (Kurla), appears to be possessing a small tower and a cuirass with 9 or 10 guns, garrisoned with 60 soldiers and a captain.

The fortress of Mahim which appears to be of three bulwarks and possesses up to 30 guns and a garrison of 100 soldiers, is situated on the beach facing the Aldea Bandora (Bandra).

The fort of Varoly situated on a hill in front of the *Hermida de N. S. do Monte* (Hermitage of Our Lady of the Mount) in the same village, will have 7 or 8 guns and a garrison of one *Alferes* (Ensign) with 25 soldiers.

The Island of Patecas (Butcher's Island), annexe of the Aldea Mazagāo has no income. In the year 1722, the general, Charles Boone, started a fortification in that which at present is found to be complete and will have 6 or 8 guns, and a garrison of up to 70 *lascarins*.[33]

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31. *Sipae* or *Cipai* is a native soldier trained and clothed in uniform in India in the European style. He serves as letter or note bearer. From the Persian *sipāhī* of *aspa* (Sans. *assva*) 'horse'. An Indo-British sepoy. Dalgado, *Glossario*, II, p. 307.

32. *Sobedar* or *Subedar* is a governor of a province or district; a captain. From the Persian *sūbadar* of *subā* 'district'. In Marathi *subhedar* and *subassi* is a Turkish term. In the native army of India the post of a *subedar* corresponds to that of a 'captain'. Dalgado, *Glossario*, II, p. 320.

33. *Lascar* or *Lascarim*: These words are used in two different senses by writers although they have the same meaning. The former meaning 'a native soldier' and the latter 'a native sailor'. The words are derived from the Persian *lashkarī* of *lashkar* 'army'. In Bengal this is

I suppose that the island of Bombay will yield to the Company more or less up to 160,000 xs. and by this income it will be able to arbitrate its value by regulating on the usual ten per cent according to the custom ; but at the same time it should be observed that a greater part of the same income depends on the trade and traffic which at present runs in the same island together with the liberty of conscience that is observed there, etc. *Saldanha* (*Livro das Monções, No. 94, in principio*).

It is evident from the text of the above document that its importance lies not only in its financial aspect, but at the same time the curious statement also offers documental evidence regarding the re-purchase of the island of Bombay by the Portuguese, which the latter were contemplating about half a century after its transfer to the British Crown.

But it was too late for them to earnestly realize the loss of that precious island which undoubtedly is one of the main causes for the decadence of the Portuguese Power in the East. Those wise words of the Viceroy, Antonio Mello e Castro, who parted with it with tears in his eyes saying "*que se acabou a India no mesmo dia em que a Nação Ingleza fizer assento em Bombaim*" seem to have had hardly any effect on the minds of the statesmen of the time, to realize the great political blunder they then committed by transferring it to a power who was already in rivalry with them in trade and conquest. But Bombay was destined in the hands of the British to rule a great part of the vast Continent.

" Three great events" writes Dr. da Cunha, " that have materially contributed to the making of modern Bombay, are the Treaty of Bassein, which destroyed the Marātha Confederacy, the annexation of the Dekkan, and the opening of the Suez Canal, which helped considerably to raise this city to the proud position of the gateway of India." What would have been the position of Bombay to-day, had it been in the possession of its previous occupants ?

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used as ' a governor of a city' but actually it means a native soldier, the word being substituted at present by ' cipai' or 'sepoy'. Dalgado, *Glossario*, I, p. 515.

MADRAS

HISTORY OF COW-PROTECTION IN INDIA. *

By L. L. Sundara Ram, Esq., M.A., F.R.Econ.S. (London.)

(*Continued from last issue.*)

We may now enter upon that period of Indian history which is replete with instances wherein Muhammadan sovereigns of India who were more liberal than the vast majority of their masses strove their level best towards protecting the cow. Here, I have to make plain the fact in view of the evidence furnished previously, however vindictive the nature of the Muhammadan-conquering masses and certain of their fanatic rulers in killing cows, that we find brilliant efforts made by some of their illustrious sovereigns of India in the cause of cow-protection. These efforts will make us envisage the capabilities of our Muslim neighbours in meeting us at least half way in our efforts to conserve cow life.

To begin with, Babar, the first of the Mughal rulers of India, recognized the importance of cow preservation. We cannot exactly vouch for his capabilities to understand the importance of the bovine species to Indian agriculture. But he is quite explicit about the respect and sufferance of the Hindu reverence towards the cow, which every Muslim inhabitant of India must be capable of. For one thing he never ate beef, but had a partiality towards the flesh of camels. We may read the whole of his *Memoirs* but we cannot find a single passage wherein it is mentioned that Babar ate beef. The first Mughal emperor of India is famous for his descriptive detail and imagery. Several feasts and banquets given by him and his subordinate Wazirs are described to the minutest detail but in not even one instance do we find beef mentioned as being served to the guests. But, it is far from being a surmise when I say that the Muhammadan stock of Afghanistan has a particular partiality towards the flesh of horses and camels. Monserrate mentions † that Timur the ancestor of Babar "held frequent banquets at which the flesh of the horses was served boiled or roast" in preference to other meat. Babar himself mentions quite clearly his relish of camel's flesh. In the valley of Khesh "a fat *Shuterluck* belonging to the Hazaras was found, brought in and killed. We ate part of its flesh roasted, part of it sun-dried (with the rest boiled in vessels). I never ate such fine-flavoured camels' flesh; many could not distinguish it from mutton."‡ This

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* A chapter from the writer's forthcoming monograph on *Cow Protection in India*.

† *Commentary of Father Monserrate*, Appendix p. xxx. Translated by J. S. Hoyland. Annotated with introduction by S. N. Banerjee, Humphry Milford, 1922.

‡ *Memoirs of Babar*, Vol. I, p. 281. Translated by Leyden and Erskine. Revised by Sir Lucas King, C.S.I., LL.D., F.R.S., Oxford, 1921. Shuterluk is a species of camel.

partiality towards camels' flesh is justified by the fact that, as we have already seen in an earlier chapter, the desert Arab was generally habituated to slaughtering camels at sacrifices and banquets.*

Babar is more explicit as regards his respect towards the cow. In his death-bed advice to his son Humayun he gives vent to fine sentiments worthy of a genuine follower of Islam. Two copies of the document containing the advice are extant at the present day, the one in the Bhopal State Library and the other in the possession of Principal Balkrishna of the Rajaram College, Kolhapur. The latter one seems to be more complete and I quote it in full.† "Secret will of Zahir-ud-Din Mohammad Badashah Ghazi to Prince Nasirud-Din Mohammad Humayun, whom God grant a long life, written for the strength of the kingdom :

"O son, the kingdom of India is full of different religions : praised be God that He bestowed upon thee its sovereignty. It is incumbent on thee to wipe all religious prejudices off the tablet of the heart ; administer justice according to the ways of every religion. Avoid especially the sacrifice of the cow by which thou canst capture the hearts of the peoples of India, and subjects of this country may be bound up with royal obligations.

"Do not ruin the temples and shrines of any community which is obeying the laws of Government. Administer justice in such a manner that the king be pleased with the subjects and the subjects with the king. The cause of Islam can be promoted by the sword of obligations rather than by the sword of tyranny.

"Overlook the dissensions of the Shias and Sunnis, else the weakness of Islam is manifest.

"And let the subjects of different beliefs be harmonised in conformity with the four elements (of which) the human body is harmoniously composed, so that the body of the kingdom may be free from different diseases. The Memoirs of Timur, the master of conjunction (*i.e.* fortune) should always be before thine eye, so that thou mayest become experienced in the affairs of administration."—*1st Jamadi-ul-Awwal, 935 Ā.H.*

The reigns of Humayun and Sher Shah may well be skipped over as they are not quite so important to our present purpose, and are mainly occupied with defeats, flights, conquests and reconquests, which would mean

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* *Ante*, chapter on the Muslim Outlook.

† Dr. Syed Mahmud, Ph.D., obtained a photo of the copy preserved in the Bhopal State Library through the courtesy of Nawab Col. Hamid Ullah Khan Sahib and translated it in his article on "Cow-Protection under Muslim Rule"—a Historical Survey, in the *Indian Review* for August 1923, which is published as a pamphlet for free distribution by the Sri Gorakshak Mandali, Bangalore. The Persian original of Dr. Balkrishna's copy will be shortly published in the *Indian Historical Journal*. Its translation is practically broadcast by almost all the newspapers of India in view of the present state of communal tension over the Bakra-Id Festival.

loss of equilibrium in the State. When we come to Akbar we have perhaps as persistent a sovereign in the cause of cow-protection as Asoka.

Akbar's eclecticism and strong leanings towards Hinduism are quite plain even to a superficial reader of history. His broad-mindedness, his catholicity and his openness of mind to receive new impressions were instrumental in bringing about his policy of religious tolerance. Theologians and *Muftis*, logicians and scholars of varying attainments and belonging to different religions and creeds assembled round him in the spacious *Ibadat Khana* or House of Worship at Fatepur Sikri, built in 1575. The *pros* and *cons* of dogmas were carefully hearkened to by this excessively inquisitive monarch, however intricate their logical catechism, however subtle their metaphysical abstractions. His openness of mind was such that different religions claimed in him a proselyte. Monserrate, the Jesuit Missionary, claims that he embraced the path of Jesus of Nazareth, while the Jains equally justify their claims in maintaining the conversion of Jalal-uddin Akbar to the creed of Mahavira. However this may be,—and it is a matter to be decided by scholars,—this much is certain that Akbar had strong leanings towards Zoroastrianism, and more particularly towards Jainism.

Akbar is positive as regards his distaste of flesh. Whether this be due to the Jain influence on him or to an instinctive moral repugnance and sensitiveness to see a brute butchered we cannot ascertain. But this much is plain that his instincts of humanitarianism are as strong as those of any Jain. Take this passage from the *Ain-i-Akbari*:* "His Majesty has a great disinclination for flesh : and he frequently says, 'Providence has prepared variety of food for man, but, through ignorance and gluttony, he destroys living creatures, and makes his body a tomb for beasts. If I were not a king, I would leave off eating flesh at once, and now it is my intention to quit it by degrees.' For some time, he abstained from flesh on Fridays ; then on Sundays; now on the first day of every solar month, and on Sundays, and on the days of the eclipses of the sun and of the moon, and the day between two Sufyanehs ; † and the Mondays of the month Rejeb, and the festival of the month Teer, together with the whole of the month Fervirdeen (March), and the month in which His Majesty was born, which is Aban (October). And it being ordered that the Sufyaneh should last for as many days as His Majesty was years old, some days in the next month Azer were likewise added ; and now the whole of this last month is Sufyaneh ; and out of his righteousness,

* Page 56, Translated by Francis Gladwin. I hope to supply references from Blochmann and Jarret, in a future edition of this work, as they are not available to me at present in this part of the mofussil.

† That is, if a day intervened between two days that were appointed for abstaining from flesh, that intermediate day became also Sufyaneh.

besides all those, it is still increasing some days every year, and never less than five days."

This is but a significant passage testifying his strong beliefs about the sanctity of animal life. But for his legislation in the cause of cow-protection we have to go elsewhere.

Here I am to note that Akbar remitted several vexatious taxes including taxes on the sale and slaughter of cattle and the one for dressing hides. * This would mean the relaxation of State control over important transactions which are sure to touch the economics of the State. From very early times of Muhammadan rule in India, we find these taxes are collected vigorously to conserve cattle life. Dr. Syed Mahmud sums up this piece of legislation in the following manner: † "From the very inception of Muslim rule a special tax was imposed on butchers for the slaughter of cows to the extent of twelve 'Jetal' per cow. During the reign of Feroz Shah, butchers complained against this tax and the king abolished it. Details of this taxation are not given in books of history, but its object could only have been the prevention of cow-slaughter. This tax, therefore, continued for two hundred years after the establishment of Muslim rule in India, right up to the time of Feroz Shah Tughlak. Instead of issuing a general order prohibiting cow-slaughter, this was the method adopted by early Muhammadan kings. This tax was called 'Jazri'. At the time of Mohammad Shah Tughlak, beef was not cooked in the royal kitchen, and the king did not take it. Several authors have given detailed description of the royal kitchen, but there is no mention of slaughtering cows. Farhat-ul-Mulk was appointed Governor of Gujarat, and continued in that capacity also during the reign of the next king Mohamed Ghias-ud-Din Tughlak II. Historians state that Farhat-ul-Mulk made various concessions to the Hindus, and did not allow the slaughter of cows. The Hindus wielded great influence during the reign of Sultan Nasir-ud-Din Khushro. This king totally stopped the killing of cows in his territories. It also seems that the Jazri tax which had been discontinued by Feroz Shah Tughlak was re-imposed after his reign, because it is recorded in books of history that Akbar abrogated this tax. Akbar ordered a total prohibition of the killing of cows, and the tax was no longer found necessary and it was probably on that account that it was discontinued."

When we place the above injunctions of Akbar alongside with the attempts of his predecessors, we may not be impressed with this legislation of his who is famous for his partiality towards the cow. As a matter of fact,

* *Ibid.*, p. 243.

† "Cow-Protection under Muslim Rule"—a Historical Survey, in the *Indian Review* for August 1923.

Akbar had no necessity to protect the cow by means of this paltry and indirect method of legislation. On the other hand, his Cow-Protection policy was broad-based and comprehensive. He was overt in his favour of the Hindu, the Jain and the Zoroastrian creeds. History proves his several concessions to these creeds which were granted in good faith. His partiality towards Jainism was quite marked, and his declarations about using meat as an article of food, quoted above, were quite in consonance with this particular bent of his mind.

We have corroborative evidence that three Jain gurus attended the court of Akbar and ministered unto his mental inquisitiveness in hankering after information about the different religions of the world. Hiravijaya Suri, Vijayasena Suri and Bhanuchandra Upadhyaya are credited to have exercised a wholesome influence upon Akbar, and obtained a *Firman* prohibiting under penalty of capital punishment animal slaughter in general and cow-slaughter in particular.* This *Firman* is preserved on the walls of a porch to the Adiswara Temple on the Satrunjaya Hills close to Palitana State in the Kathiawad. Dr. Bühler sums up this long inscription in the following manner: † "Hiravijaya (Klatt No. 58, verses 14-24), who was called by Sahi Akabbara (Shah Akbar) to Mevata, and persuaded the emperor in Samvat 1639 (A.D. 1582) to issue an edict forbidding the slaughter of animals for six months, to abolish the confiscation of the property of deceased persons, the *Sujijia* tax, and a *Sulka*; to set free many captives, snared birds and animals; to present Satrunjaya to the Jainas; to establish a Jaina library (*Paustakam Bhandagaram*), and to become a saint like king Srenika, who converted the head of the Lumpakas, Meghaji; made many people adherents of the Tapagachchha; caused many temples to be built in Gujarat and other countries; and made many natives of that country, of Malava, and so forth, undertake pilgrimages to Satrunjaya. No. CXVIII commemorates one of these pilgrimages, which was undertaken by Hiravijaya who belonged to the *Sapha* race. He died, according to XIII, of starvation, at Unnatadurga, in Samvat 1652, Bhadrapada Sukla 10, and his *Padukas* were erected in the same year, on Marga-vadi 9, Monday, by Udayakarna of Stambhatirtha (Cambay) and consecrated by Vijayasena. Vijayasena (Klatt No. 59, verses 25-34), who was called by Akabbara (Akbar) to Labhapura (Lahore), received from him great honours, and a *Phuramana* (*Firman*), forbidding the slaughter of cows, bulls and buffalo-cows, to confiscate

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* *Bhandarkar Commemoration, Vol.* pp. 265-276. Article on "The Jain Teachers of Akbar" by V. A. Smith. Bhandarkar Oriental Institute, Poona, 1917.

† *Ibid.*, pp. 272-273. Being not in possession of either Keilhorn's or Bühler's collection of inscriptions I was not able to give the full text of the inscription here. I hope to do so in a second edition of the monograph. The same is summed up by S. N. Banerjee in his introduction to the *Commentary of Father Monserrate*, pp. iv and v.

the property of deceased persons and to make captives in war; who, honoured by the king, the son of Choli-Begam (Choli Vegama), adorned Gujarat. Latest date Samvat 1650."

A similar account has been furnished by a modern writer from mountain temples and historical inscriptions on their porches. Summarizing the series of inscriptions on the temples of the Shatrunjaya Hills which comprise the *Firmans* of Mughal sovereigns of India in their efforts to bring about mutual amity and concord between Hindus and Muhammadans, Mr. G. K. N. writes in the *Bombay Chronicle* : * "There is first of all the *Firman* of Jellal-ud-Din Muhammad Akbar. It guarantees the Jains the maintenance of their worship and the exercise of their religion and doctrine 'throughout our Empire and dominions'. Something more important follows—that no one can kill an animal on those mountains or temples or below or about them. It is but proper that the Jain should perform his devotions with composure of heart. ' Let no one ever oppose or make objections' to the decree. Let the orders contained in the *Firman* be acted upon and carried out.

"The second edict is from the Emperor Jehangir in similar terms.

"The third *Firman* is from Shahjehan who confirms the preceding documents. Then we have another of the same Emperor granting greater liberty. He emphasizes that every year a new order shall not be demanded but that those whom it concerns shall not swerve from what is here commanded. A further 'world-binding mandate' is issued by another Padishah, one more from the 'Dar-ul-Khilafat', proving that at times the Indian Emperors considered themselves rightful Khalifas. The documents are too interesting to be dismissed with a curt notice.....It must have been an India in those days certainly immune from that fierce acerbity between the Hindus and Musalmans which seems now to usurp their minds to the exclusion of truly national endeavours."

From this evidence it is positively clear that Akbar had very strong ideas about cow-protection from several viewpoints. Firstly, he is instinctively repugnant to partake of flesh from the humanitarian point of view as his declarations about meat-eating and his abstinence from eating flesh would clearly prove. Next to this, his respect for the feelings of his Hindu subjects and his leanings towards the *Ahimsa* principle of Jainism influenced him to order prohibition of cow-slaughter in his dominions. Possibly, he might have had strong notions about the economic relationship of the cow-protection problem to the country's needs.

Akbar's policy is maintained and perpetuated by his successors. Jehangir who is a mixture of extremes, and Aurangzib who is notoriously known to

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* Quoted in *The Muslim Outlook*, p. 7. April 8, 1926, Lahore.

have done the greatest harm to the progress of Hinduism are famous for their efforts to save the cow's life. The Shatrunjaya Inscriptions mention his *Firman* to protect cow-life which is in complete harmony with that of his father Akbar. * Further, he is credited with having stopped all slaughter of animals and all manner of hunting on Sundays, to commemorate Akbar's birth-day, and on Thursdays as a token of the Almighty's grace in consecrating him king, on that day. † On this point, Bernier, the French traveller who visited the Mughal court during the years 1656-1668, is more explicit. After referring to the sacredness of the cow in the eyes of the Hindus, Bernier continues: ‡ "It ought likewise to be observed that owing to the great deficiency of pasture land in the *Indies* it is impossible to maintain large numbers of cattle ; the whole, therefore, would soon disappear if animal food were eaten in anything like the proportion in which it is consumed in *France* and *England*, and the country would thus remain uncultivated. The heat is so intense, and the ground so parched, during eight months of the year, that the beasts of the field, ready to die of hunger, feed on every kind of filth like so many swine. It was on account of the scarcity of cattle that *Jehan-Guyre*, at the request of the *Brahmins*, issued an edict to forbid the killing of beasts of pasture for a certain number of years."

The reign of Aurangzib is noted for the internecine quarrels among the different principalities dispersed over the length and breadth of the country, the attempts of the Mughal *Padshahi* to subdue them on the one hand, and the civil war that ultimately gave him the reigns of government after a huge flow of blood. The concomitants of war would be loss of life, human and animal. Especially in mediæval warfare the beast played a prominent part. Besides the elephant and the horse the bull played a unique part as a beast of burden. These wars of Aurangzib caused serious loss of animal life, and this has been graphically described by Manucci in his *Storia do Mogor*: § "Instead of verdure all is blank and barren. The country is so entirely desolated and depopulated that neither fire nor light can be found in the course of a three or four days' journey..... There have died in his armies a hundred thousand souls yearly, and of animals, pack oxen, camels, elephants, etc., over three hundred thousand." Commenting upon this phenomenon Bernier points out, ‖ after his reference to Jehangir's prohibition of the

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* *Ibid*.

† Dr. Syed Mahmud in the *Indian Review* for August 1923 on "Cow-Protection under Muslim Rule"—a Historical Survey.

‡ *Travels in the Mogul Empire*, p. 326. Translated by Archibald Constable. Revised by V. A. Smith, 1914. Oxford, Humphry Milford.

§ *Storia do Mogor*, iv, 252 and 96. Quoted in the *History of Aurangzib*, Vol. V., p. 236, by Jadunath Sarkar, M.A., Calcutta, 1924.

‖ *Travels in the Mogul Empire*, pp. 326-327.

slaughter of beasts of pasture, that "not long since they presented a similar petition to *Aureng-Zebe*, offering him a considerable sum of money to ensure his compliance. They argued that the neglected and the ruinous condition of many tracts of country during the last fifty or sixty years was attributable to the paucity and dearness of oxen." According to *Islami Gorakshan*, later Mughal sovereigns of India such as Muhammad Shah and Shah Alam prohibited cow-slaughter.*

Muhammadan sovereigns of India were famous for their policy of 'give and take' and the appreciation of the Hindu beliefs in the sanctity of the cow. Further, they were fully cognizant of the fact that the solidarity of the State depended upon peace and goodwill between the Hindus and the Muslims. They conceded that cow-slaughter was never a tenet of Islam. To crown all, they prohibited any recrimination on the part of the conqueror Muslims and preached the wholesome gospel of the worth of animal life, in particular of cow-life. If the masses of the Muslim population of India at the present day were made to realize and appreciate this legacy of history which their co-religionists that have gone by have given to posterity, then the cow-protection problem in India would have been completely solved.

Our next glimpse in the cause of cow-protection we get from the inspirational declarations and achievements of Sivaji, who is hailed by the Hindu population of India as an incarnation of God. Sabhasad maintains in his *Siva Chhatrapati* that Shree Sambhu Mahadev declared himself incarnate in the person of Sivaji,† to deliver the Brahman and the cow from the clutches of the Muhammadan population of India.

Sivaji personally justifies this belief. When he was taken against his will to the *Darbar* of the Sultan of Bijapur at the age of twelve to obtain his favours, Sivaji declares :‡ "We are Hindus and they Yavanas. They are very low—in fact there is none lower,—I feel a loathing to salute them. They commit evil deeds like cow-slaughter. It is wrong to witness any slight on religion and the Brahmans. Cows are slaughtered as we pass by the roads. It pains me and I feel inclined to cut off the head of the offender. In my mind I feel disposed to decapitate the oppressor of the cows but I am helpless as I do not know what my father will think of it." Again, when the Padshah talks of remarrying Sivaji as his first marriage was, as he vouched, a mere play, Sivaji argues according to the *Siva Digvijaya* :§ "We are Hindus and the rightful lords of the realm, it is not proper for us to witness

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* P. 41.

† *Siva Chhatrapati* by Krishnaji Anant Sabhasad. Translated from the Maratha Bakhar by Surendranath Sen. Calcutta University, 1920. p. 2.

‡ *Chitnis Bakhar*, p. 27. Translated in *Ibid.*, p. 160.

§ P. 111, quoted in *Ibid.*, p. 160.

cow-slaughter and oppression of the Brahmans." Sivaji's later policy and achievements justify this statement of his. But his enthusiasm and sacred duty to protect the Cow and the Brahman never led him to indiscriminately slaughter the Muhammadans even during the height of his military achievements.

At the disintegration of the Mughal, the Vijayanagar and the Maratha empires, we have to stop for a time in our sketch of the history of cow-protection in India. Our sources of information fail us here. The country was immersed throughout the eighteenth and the earlier half of the nineteenth centuries in a series of wars. One by one the empires crumbled. The British had begun to exchange their trade for the sword. Gradually they became masters of India. During this period, no single ruler, Hindu or otherwise, was able to bestow particular attention towards the cow,—at least, our source books fail us here in this respect,—as they were completely absorbed in their attempts to prevent the sword of the conqueror from exterminating their dynasties and escheating their estates. But all the same, the feelings of the Hindus, as ever, were strong in favour of respecting cow-life. The mere suspicion, alleged or actual, that the fat of the cow was used in preparing the cartridges for the Enfield Rifle drove into fury the Hindu Sepoys in the employ of British service, and set into a blaze all the fires of the sentimental clingings of the Hindus at the time of the Sepoy Mutiny. This is evidence positive of the staunch beliefs of the Hindus in imputing sanctity to the cow, which always goaded them to constrain the State to see that their wholesome beliefs in this respect were never abrogated, while nothing prejudicial to the cause of cow-protection ever happened through the instrumentality of the State.

In quite recent years Kashmir and Nepal stand prominent in their efforts towards cow-protection. The strange factor to be borne in mind is that Kashmir is predominantly Muhammadan, while Nepal is a comparatively undeveloped State when compared with India proper and is situated in an extremely mountainous zone. Kashmir seems to have been perpetuating her policy towards protecting the cow as propounded by her Meghavahanas and Anantivarmans of yore, as we have seen above. The *Ranvir Danda Vidhi* provides :*

"Section 219.—Slaughter or murder of a cow or like animal. If any person intentionally kills or slaughters any animal of kine division, either the cow or bull, he will be subjected to punishment. Either of the two kinds of imprisonment the terms of which may be up to ten years can be inflicted and a fine will also be imposed according to circumstances.

* Quoted in the Memorial to H. H. the Maharaja of Mysore by the Sree Gorakshak Mandali, Bangalore, praying for cow-protection.

" Explanation :—The word cow includes *Gonda* or wild cow also.

" If any person keeps the flesh of any animal referred to in Section 219, in his possession knowing it or having reasons to believe that it is of any such animal, he will be punished. Either of the two kinds of imprisonment the terms of which may be up to one year and a fine up to Rs. 500 will also be imposed according to circumstances.

" Section 219B.—If any person slaughters or kills any she-buffalo, a fine will be imposed. The amount of the fine can be up to five times the value of the animal (which the Court may fix).

" Procedure :—The offence under this Section is interferable by Police, unbailable, and uncompoundable, and will be tried by a First Class Magistrate."

Likewise is the case of Nepal. Nurtured in the lap of fervent Buddhism for ages and having imbibed to the core the Aryan partiality towards the cow, the Nepalese are to-day staunch cow-protectors. As Sir Bampfylde Fuller puts it, " Cow-killing is under its strictest interdict among the Mongolian people of Nepal." *

In the State of Jodhpur there is a long-standing order prohibiting the slaughter of cows. In the light of the latest information, even the export of cows, female sheep and she-goats is prohibited.† Again, the Maharaja of Sondur State in the Bellary District declared recently at Davangere that the slaughter of cows would be forbidden in his State, and that old and dry animals in the hands of itinerant butchers, if they happen to pass through his territory, would be liberated at the cost of the State.‡ Both these instances are commendable. Even Provincial Governments of British India are seen to be sympathetic towards the prevention of cow-slaughter. For example, Order No. 1236/955—XIII of the Central Provinces Government, dated 31-5-1922, prohibited the killing of cows in the licensed as well as private slaughter-houses situated within their jurisdiction.

The cow-protection movement in India at the present day is purely one of education and propaganda. Several undesirable elements have cropped up to stop the general progress of cow-protection, such as the Muslim persistency in maintaining the indispensability of cows for sacrificial purposes and the economic arguments of the burden upon the farmer of sterile and aged cows if they are to be fed in their useless old age. The movement at the present day has swelled in volume, while its outlook and breadth of activities have broadened. Propaganda has been carried on an extensive scale. Sterling facts about cow-protection which are capable of lifting up

* *Studies in Indian Life and Sentiments*, p. 103. Murray (1910).

† Memorial of the Gorakshak Mandali.

‡ *Social Reformer*, p. 392, February 30, 1926.

the screen of prejudice and ignorance have been broadcast. Literature bearing upon the different problems connected with cow-protection in India has been made accessible to the public though on a modest scale. Communal feelings and petty prejudices and provincialism of creed-dogmas have been at present drawing the attention of the cultured who are trying to obliterate them.

Towards this effect propaganda has been extensively carried on. The Cow-Conference has been organized along with the annual sessions of the Indian National Congress. There is a Central Cow-Protection Society for India organized under the kind patronage of Mahatma Gandhi known as "All-India Cow-Preservation League" with its headquarters at Sabarmati. Besides this there are several societies in India * conducting their operations mainly depending upon their own resources and equipment. The following societies deserve mention :—

The Society for the Prevention of Cruelty to Animals stands out as the oldest humanitarian institution in India. It was started at Madras in the year 1877 by Mr. William Digby, C.I.E., with His Grace the Duke of Buckingham and Chandos as first patron and Lady Grenville as first patroness. All these fifty years the Society has been pushing on its propaganda with unremitting zeal. But the operations of the Society do not limit themselves to the cause of cow-protection alone. On the other hand, the outlook of the Society is very broad and includes all branches of humanitarian work. The Society's inspectors have the powers of the police authorities in booking all classes of people without distinction of status, if ever they are seen red-handed in acts of cruelty to animals. It has seven branches in the Madras Presidency and has the backing of highly influential men in the Presidency.

Next in chronological order is the Islami Gorakshan Office at Sitapur, U.P. The Society is the outcome of the efforts of Mr. Syed Nazir Ahmed Saheb, a prominent Vakil of Sitapur. Born in 1872 and belonging to the Shia sect of the Muslims, Mr. Nazir Ahmed was fully imbued with respect towards the cow and deep feelings of respect towards "Gopalak Sri Krishnaji heartily and sincerely", to quote his nephew's letter to the present writer. His mission is simply to demonstrate that cow-slaughter is in no way a tenet of the Islamic creed. Towards this, he entered upon a career of propaganda preaching to the masses the values of cow-protection. He strove his level best to disseminate correct information about the theological position of the cow in different religions, especially from the Muslim view-point. He published several pamphlets about this subject and permanently established the

* All these societies were good enough to appreciate my appeal for information and guidance. I must sincerely acknowledge their sympathy and assistance, but for which my enthusiasm would nearly have been chilled.

Islami Gorakshan Office at Sitapur to carry on propaganda work in the cause of cow-protection.

The Cow-Preservation League, Calcutta, was started in 1922 under the distinguished presidency of the late Sir Asutosh Mukherjee to propagate the cause of cow-protection. It is at present managed by a strong directorate of enthusiasts under the presidency of the Hon'ble Mr. Justice Sir Nalini Ranjan Chaterjee. It has got a network of branches throughout the whole of India, in all sixty societies. This League is noted for its assiduity in collecting information and statistics from the different parts of India. This organization shows clearly what a centralized and co-ordinated institution can accomplish in the cause of doing good to the country.

Shree Ghatkopar Sarvajanika Jivadaya Khata or the Ghatkopar Humanitarian Association of Bombay is doing prominent work in this line in Western India. With a panel of influential Marwari merchants for its promoters, and with an ardent enthusiast in Mr. Manecklal A. Mehta as Secretary, the Association is doing excellent work ever since its inception in 1923. The main object of the Society is the saving of milch cattle from going to the Bombay slaughter-houses besides propaganda work.

Sree Gorakshak Mandali of Bangalore City is a prominent institution in the South. With Dewan Bahadur Rajasabhabhushana Sir K. P. Puttanna Chetty, Kt., C.I.E., and Shah Chimanmal Dongaji for its President and Secretary respectively, the Association has been doing appreciable work in Mysore and the South. The Mandali memorialized the Maharaja of Mysore about issuing a prohibitory order to stop cow-slaughter in his dominions. Much is expected from this.

Besides this, there have been started in India several other propagandist societies of minor importance in name but never in genuine exertion. The prosperity of India lies in societies such as these and the patriots who are helming them.

The history of the *Pinjrapole* and its place in Indian life is noteworthy. That this is an extremely old institution, no one can deny. Tradition and present-day manifestations confirm this. But in view of the paucity of material at our disposal, anything like a comprehensive survey of the history of this charitable institution is a difficult task. In the chapter on the Buddhist attitude we have briefly adverted to the institutions of the *Pinjrapole* and maintained the thesis that Buddhism had her indelible impression upon the conduct and type of the *Pinjrapole.* Dr. D. R. Bhandarkar sums up this feature of the institution in the following brilliant manner :* "As regards the *Pinjrapoles* or animal hospitals, they are

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* *Carmichael Lectures on Asoka*, pp. 185-186, Calcutta (1925).

found to this day in Western India. The earliest description of a *Pinjrapole* is that furnished by Hamilton and is of one that was maintained at Surat late in the eighteenth century. Any animal with a broken limb or otherwise disabled is admitted without any regard to the caste or nationality of its master. This suits here excellently. For, when Asoka says that he organized medical treatment for both man and animal, what he means is that in the case of the former he established charitable dispensaries for distributing medicine gratis and in the case of the latter something like a *Pinjrapole*. When again he says that medicinal herbs, roots and fruits were imported and planted where they did not exist previously, we are to understand that he established farms attached to those institutions so that all medicines might be there for ready use. It is indeed curious to find that the custom of giving free medical relief to the diseased man or animal which was in existence in West India in the eighteenth century was prevalent as early as the third century B.C. And what is still further noteworthy is that through the philanthropic activity of Asoka all the drugs then known were made available to the world."

This is from the institutional point of view. On the other side of medical treatment and its history, the Thakore Saheb of Gondal maintains* that "Veterinary Science seems to have been highly cultivated long before that period (*Mahabharata*). Nala, a remote ancestor of the Pandavas, is described as a most accomplished horse-trainer, and as possessing a thorough knowledge of all matters relating to the horse. Nakula, one of the five Pandavas, was expert in the veterinary science, on which he has written several works, his "Aswa-Chikitsa" being still extant. The science of treating elephants, bullocks and other domestic animals was and is still known in India. Some are of opinion that Vagbhata, the celebrated author of "Ashtangahradya", flourished at the time of *Mahabharata*, and that he was the family physician of the Pandavas.

"In the time of Buddha (B.C. 543), Indian medicine received the greatest support and stimulus, and surgery was allowed to languish. For Buddha and his followers would not permit the dissection of animals. They put a stop to animal sacrifice in which a knowledge of anatomy was indispensable, and substituted models of dough. Buddha, however, established hospitals for men and beasts all over the country, and the institution of *Pinjrapoles* (Animal Hospitals), so peculiar to India, owes its origin to him."

The institution of the *Pinjrapole* is perpetuated in India to the present day. It is but a common sight in Bombay to see a few cows gathered

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* *A Short History of Aryan Medical Science*, pp. 188-189.

before a Marwari or Gujarati gentleman's house where are provided ample supplies of grass to these sacred beasts. Pure milk is only to be got at these *Pinjrapoles* * conducted on a very modest scale and dispersed all over the city. This personal observation of the writer seems to justify the above contentions of Dr. D. R. Bhandarkar. But the *Pinjrapole* does not seem to have been fully developed throughout the country on really efficacious lines. While they seem to be not very popular as their number is quite modest, the development of this institution is fraught with very good results and it is a desirable institution to be fully developed.

I will now close this chapter with a working exposition of the animal hospital of the Jains at Allahabad which shows the amity existing between man and beast in India. Mr. L. Moresby writes in the *Herald of the Golden Age* : † "In Ahmadabad I visited the Jain Hospital for Animals—a most wonderful and touching place. It is a compound in the midst of the city with trees in it and large sheds where the sick and wounded animals are tended. The Pariah dogs in India are a very painful sight—so lean and starved that their ribs stand out like the ribs of a stranded hulk; so ravenous that they run beside the train as it leaves a station, watching with famished eyes for morsels that some kind hand but seldom throws. Here I saw some lying contentedly with their puppies nestling besides them, and food before them fresh from the great cauldrons in which it is boiled for all the guests tended and cared for as part of our common brotherhood. Beside them was standing a bullock, with shining coat like grey velvet and a cruel scar healing along his flank. Above in the trees the grey monkeys chattered and held out tiny black paws for alms. The goats stood by with their kids, and men and boys went about feeding and tending them, and I have seldom seen a happier place (though indeed there were sights of suffering), because it seemed to re-knit the bond between man and beast and to speak of a debt owed for faithful service, and therefore ungrudgingly paid."

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* *Pinjrapole* is used here, as is passed off generally, as a place where cows are gathered either for milking or feeding.

† Vol. XVI. Quoted in *The Jaina Gazette*, Vol. XXI, No. 7, July 1925, pp. 208-209.

SURYAPRAGNAPTI.

By Dr. R. Shama Sastry, B.A., Ph.D., M.R.A.S.

(*Continued from Vol. XVIII, No. 1.*)

The Motions of the Moon and the Sun.

The moon moves and unites 67 times with Abhijit in a Yuga of 5 years.

The sun comes in contact five times with the same star in a Yuga.

The names of the months are :—

1.	Śrāvaṇa	... ...	Abhinanda
2.	Bhādrapada	... ...	Supratishṭha
3.	Âśvayuja	... ...	Vijaya
4.	Kārtika	... ...	Prītivardhana
5.	Mārgaśirsha	... ...	Śrēyān
6.	Pushya	... ...	Śiva
7.	Māgha	... ...	Śiśira
8.	Phālguna	... ...	Haimavān
9.	Chaitra	... ...	Vasanta
10.	Vaiśākha	... ...	Kusumasambhava
11.	Jyēshṭha	... ...	Nidāgha
12.	Āshāḍha	... ...	Vanavirodhi.

Years :—

(1) Nakshatra samvatsara = Nakshatra māsas = $12 \times 27\ \frac{21}{67}$ days = $327 + \frac{51}{67}$ days.

(2) Yugasamvatsara = 5 years.
(cyclic year)

(3) Pramāṇasamvatsara (to be explained later on).

(4) Saturn-year (,,).

The first is of 12 kinds, as Śrāvaṇa, Bhādrapada, etc.; when Jupiter completes the whole circle of constellations once, it is called, a Nakshatra-samvatsara of 12 years.

Lunar year = $29\ \frac{32}{62} \times 12 = 354$ days $+ \frac{12}{62}$ days.

Intercalary lunar year = $383 + \frac{44}{62}$ days.

Solar year = $12 \times 30\frac{1}{2} = 366$ days.

Hence once in 30 solar months there will be one intercalary lunar month. Hence in a yuga of 60 solar months there will be two intercalary lunar months.

Each lunar month contains two parvas.

Hence a lunar year ,, 24 ,,

Intercalary year ,, 26 ,,

Then the text proceeds with the solution of some problems regarding the particular Ayana and particular diurnal circle in which a desired Parva occurs. If, for example, the question be asked "At what Ayana and what circle at the beginning of a cycle does the first parva attain completion?" the general method of solution is as follows :—

There is here a constant which is the fixed difference between the parva area and the Ayana area. It is 1 circle + $\frac{4}{67}$ of a circle + $\frac{9}{31}$ of one-sixty-seventh part of a circle. The reason for this difference will be discussed later on. This constant is multiplied by the number of the desired parva. Then 1 is added to the number denoting Ayanas. If then the moon's Ayana area be greater or complete, then the parva area is deducted from it. The addition is for the purpose of facilitating the subtraction. It indicates an equal number of parvas. If the multiplier be odd number it shows that the parva is in the interior circle; if it be even, then the parva will be in the outer circle.

Now the constant is 1 Ayana + 1 Circle + $\frac{4}{67}$ of a Circle + $\frac{9}{31}$ of $\frac{1}{67}$ of a circle.

Multiply this by one and add 1 to Ayana.

Then the result is $2 + 1 + \frac{4}{67} + \frac{9}{31}$ of $\frac{1}{67}$.

Since the circle with its parts is less than two, Ayana cannot be subtracted from circle. Hence add 2 to circle. It becomes 3. Hence the answer is that the first parva happens in the second Ayana, third internal diurnal circle when $\frac{4}{67} + \frac{9}{31}$ of $\frac{1}{67}$ parts of a circle have elapsed. This Ayana is lunar. In the case of lunar Ayanas, the first Ayana in the beginning of a cycle is northern and the second is southern.

Similarly if the parva asked be 2nd, then the constant multiplied by 2 $= 2\,A + 2\,C + \frac{8}{67} + \frac{18}{31 \times 67}$. Then add 1 to Ayana and two to circle. The sum $= \frac{A}{3} + \frac{C}{4} + \frac{8}{67} + \frac{18}{31 \times 67}$. Hence the answer is that the 2nd Parva happens in the 3rd Ayana when $\frac{8}{67} + \frac{18}{67 \times 31}$ parts of a circle have passed in the 4th circle.

Likewise if the 14th parva be asked, then the constant $\times$ 14 = 14 A + 14 C + $\frac{56}{67} + \frac{126}{31 \times 67} = 14 + 14 + \frac{60}{67} + \frac{2}{31 \times 67}$.

Here since 13 circles + $\frac{13}{67}$ of a circle are = 1 Ayana. Hence adding this one Ayana and also one more as usual and 2 to the circle number the number of Ayanas we get becomes 16, *i.e.*, $16 + 3 + \frac{47}{67} + \frac{2}{31 \times 67}$.

That is the 14th parva happens in the 16th Ayana when $\frac{47}{67} + \frac{2}{31 \times 67}$ parts of the third circle have passed away.

Likewise for 62nd parva. $(1 + 1 + \frac{4}{67} + \frac{9}{31 \times 67}) \times 62 = 62 + 62 + \frac{248}{67} + \frac{558}{31 \times 67} = 62 + 65 + \frac{65}{67} + 0 = 62 + 5$ Ayanas = 67 Ayanas.

Since there is no fraction here, nothing will be added to the Ayana number. The circles also being even whole number, no addition is also made to their number. Hence the circle is external. Accordingly the answer is that the 62nd parva takes place when 67 Ayanas and the next outer circle are completely passed away.

The answers for all parvas are as follows :—

1st	Parva happens when	2	Ayanas	$+\frac{4}{67}+\frac{9}{31\times 67}$	of the	3rd	circle are passed.	
2nd	,,	3	,,	$+\frac{8}{67}+\frac{18}{31\times 67}$	,,	4th	,,	
3rd	,,	4	,,	$+\frac{12}{67}+\frac{27}{31\times 67}$	,,	5th	,,	
4th	,,	5	,,	$+\frac{17}{67}+\frac{5}{31\times 67}$	,,	6th	,,	
5th	,,	6	,,	$+\frac{21}{67}+\frac{14}{31\times 67}$	,,	7th	,,	
6th	,,	7	,,	$+\frac{25}{67}+\frac{23}{31\times 67}$	,,	8th	,,	
7th	,,	8	,,	$+\frac{30}{67}+\frac{1}{31\times 67}$	,,	9th	,,	
8th	,,	9	,,	$+\frac{34}{67}+\frac{10}{31\times 67}$	,,	10th	,,	
9th	,,	10	,,	$+\frac{38}{67}+\frac{19}{31\times 67}$	,,	11th	,,	
10th	,,	11	,,	$+\frac{42}{67}+\frac{28}{31\times 67}$	,,	12th	,,	
11th	,,	12	,,	$+\frac{47}{67}+\frac{6}{31\times 67}$	,,	13th	,,	
12th	,,	14	,,	$+\frac{38}{67}+\frac{15}{31\times 67}$	,,	1st	,,	
13th	,,	15	,,	$+\frac{42}{67}+\frac{24}{31\times 67}$	,,	2nd	,,	
14th	,,	16	,,	$+\frac{47}{67}+\frac{2}{31\times 67}$	,,	3rd	,,	
15th	,,	17	,,	$+\frac{51}{67}+\frac{11}{31\times 67}$	,,	4th	,,	

Similarly for the rest.

Now regarding the question which parva is completed in which star, the ancient method is as follows :—

Multiply by the required number of parvas the constant, *viz.*, $\frac{67}{124}$. Then if there be a remainder multiply it by 1830 and subtract from the product 1302, this being the correction for Abhijit (for $\frac{21}{67}$ is Abhijit area. This multiplied by 62 = 1302 of $\frac{1}{67}$th part).

Then the remainder is divided by 67×62 and the quotient shows the number of stars passed. The remainder is the part passed in the next star.

The reason for the process is as follows :—

If in 124 parvas 67 sidereal revolutions are performed,

then in 1 there will be $\frac{67}{124}$,,

$\frac{67}{124}$ revolutions = $\frac{67}{124}\times 1830$ stars = $\frac{915}{62}\times 67 = \frac{61305}{62}$. Deduct from this 1302 parts of Abhijit. Then what remains is $\frac{60008}{62}$. Then

divide this by 67. The quotient is 14; *i.e.*, the 14 stars from Śravaṇa to Pushya are passed. Then there is the remainder $\frac{1847}{67 \times 62}$ day stars. This multiplied by 30 gives muhūrtas, as $\frac{55410}{67 \times 62} = 13 + \frac{1408}{67 \times 62} = 13 + \frac{21}{62} + \frac{1}{67}$ muhūrtas; *i.e.*, the 1st parva is completed when $13 + \frac{21}{62} + \frac{1}{67}$ muhūrtas in Āślesha have elapsed.

Likewise for two parvas: $\frac{67}{124} \times 2 = \frac{67}{62} = 1 + \frac{5}{62}$, *i.e.*, one revolution $+ \frac{5}{62}$ of a revolution. This divided by $\frac{1830}{67} = \frac{9150}{67 \times 62}$. Deduct from this $\frac{1802}{67}$ of Abhijit.

Then the remainder is $\frac{7848}{67 \times 62} = \frac{7848}{4154} = 1 + \frac{3694}{4154}$, *i.e.*, one star, namely Śravaṇa and the remainder. Multiply it by 30 to reduce it to muhūrtas. $\frac{3694}{4154} \times 30 = 26 + \frac{42}{62} + \frac{2}{67}$ of $\frac{1}{62}$, *i.e.*, when so many muhūrtas in Dhanishṭha have passed the 2nd parva is completed.

The results for all the parvas are thus enumerated :—

1st	Parva	...	Serpent, *i.e.*,	...	Āślēsha
2nd	,,	...	...	...	Dhanishṭha
3rd	,,	...	Aryama	...	Uttaraphalguni
4th	,,	...	Abhivṛiddhi	...	Uttarābhādrapada
5th	,,	...	...	...	Chitra
6th	,,	...	Aśva	...	Aśvini
7th	,,	...	Indrāgni	...	Viśākha
8th	,,	...	...	...	Rōhiṇi
9th	,,	...	...	...	Jyēshṭha
10th	,,	...	...	...	Mṛigaśira
11th	,,	...	Viśvēdēvas	...	Uttarāshāḍha
12th	,,	...	Aditi	...	Punarvasu
13th	,,	...	...	...	Śravaṇa
14th	,,	...	Pitṛi	...	Magha
15th	,,	...	Aja	...	Pūrvābhādra
16th	,,	...	Abhivṛiddhi	...	Uttarābhādra
17th	,,	...	Aryama	...	Uttaraphalguni
18th	,,	...	...	...	Chitra
19th	,,	...	...	...	Aśvini
20th	,,	...	...	...	Viśākha
21st	,,	...	...	...	Rōhiṇi
22nd	,,	...	...	...	Mūla
23rd	,,	...	...	...	Ārdra
24th	,,	...	...	...	Uttarāshāḍha
25th	,,	...	...	...	Pushya
26th	,,	...	...	...	Dhanishṭha

27th	Parva	...	Bhaga	...	Pūrvaphalguni
28th	,,	...	Aja	...	Pūrvābhādrapada
29th	,,	...	Aryama	...	Uttaraphalguni
30th	,,	...	...	...	Revati
31st	,,	...	...	...	Svāti
32nd	,,	...	...	...	Kṛittika
33rd	,,	...	Mitra	...	Anūrādha
34th	,,	...	...	...	Rōhiṇi
35th	,,	...	...	...	Pūrvāshāḍha
36th	,,	...	...	...	Punarvasu
37th	,,	...	...	...	Uttarāshāḍha
38th	,,	...	Atri	...	Āślesha
39th	,,	...	Vasu	...	Dhanishtha
40th	,,	...	...	...	Pūrvaphalguni
41st	,,	...	...	...	Uttarābhādrapada
42nd	,,	...	...	...	Hasta
43rd	,,	...	...	...	Aśvini
44th	,,	...	...	...	Viśākha
45th	,,	...	...	...	Kṛittika
46th	,,	...	...	...	Jyēshṭha
47th	,,	...	...	...	Mṛigaśirah
48th	,,	...	...	...	Pūrvāshāḍha
49th	,,	...	...	...	Punarvasu
50th	,,	...	...	...	Śravaṇa
51st	,,	...	...	...	Magha
52nd	,,	...	Varuṇa	...	Śatabhishak
53rd	,,	...	Bhaga	...	Pūrvaphalguni
54th	,,	...	...	...	Uttarābhādra
55th	,,	...	...	...	Chitra
56th	,,	...	...	...	Aśvini
57th	,,	...	...	...	Viśākha
58th	,,	...	Agni	...	Kṛittika
59th	,,	...	...	...	Mūla
60th	,,	...	...	...	Ārdra
61st	,,	...	...	...	Uttarāshāḍha
62nd	,,	...	...	...	Pushya

Thus in the 1st half of the cycle the Parva stars are enumerated in order.

Similarly for the 2nd half they can be ascertained by employing the method specified above.

The Sun and the Parvas.

Equally necessary is the knowledge of the method of ascertaining in which Ayana and in which diurnal circle a particular parva (full moon or new moon) occurs.

The method is as follows:—

The number of the parva in question will be multiplied by 15 and one will be added to it. Then if there are any Avamarātras (lower nights, *i.e.*, the six nights between 354 days of the lunar and 360 days of the Savana year), they will be deducted. Then the remainder will be divided by 183. The quotient represents Ayanas. The remainder, being the number of days, will show the number of diurnal circles and the last of them will be the outer or interior circle in which the parva occurs. In the Uttarāyaṇa, it is the outer circle and in the Dakshiṇāyana, it is the inner.

Now for example,—the problem in which circle does the sun complete the 1st parva in the cycle is thus solved.

$1 \times 15 + 1 = 16$ days.

There are no lower nights here, it being less than a year. Hence the answer is that in the beginning of a cycle, the sun completes the 1st parva in the Dakshiṇāyana in the sixteenth circle from the innermost circle:

Likewise for the 4th Parva.

$4 \times 15 + 1 = 61$ days.

There being one Avama night for sixty days it will be deducted from it. Hence the number of days = 60.

Hence the 4th parva will be completed in the 60th circle from the innermost in the Dakshiṇāyana.

Likewise for the 25th Parva.

$25 \times 15 + 1 = 376$ days. Deduct six Avamas.

$\therefore 376 - 6 = 370$ days.

Dividing this by 183 we have $\frac{370}{183} = 2\frac{4}{183}$; *i.e.*, two Ayanas completed and in the 3rd Ayana (Dakshiṇa of course) 4th innermost circle, the 25th parva will be completed.

Similarly 124th Parva.

$124 \times 15 + 1 = 1861$. There being 30 Avamas, they will be deducted.

$\therefore 1861 - 30 = 1831$. $\frac{1831}{183} = 10\frac{1}{183}$; *i.e.*, the tenth Ayana (uttara) and the 1st innermost circle.

The Parvas and the Sun in Union with the Nakshatras.

In order to ascertain the particular star in which the sun completes a particular parva, we proceed as follows: Let x be the Parva number.

In 124 Parvas the sun completes 5 revolutions.

" 1 " " $\frac{5}{124}$ "

" x " " $\frac{5}{124} \times x$ "

$= \frac{5x}{124} \times \frac{1830 \text{ (days in a cycle)}}{67 \text{ (stars in a cycle)}} = \frac{5x \times 915}{62 \times 67}$ stars.

$= \frac{4575x}{62 \times 67}$ Take $x = 1$.

Deduct from this the parts of Pushya star, it being $44 \times 62 = 2728$ in 62 Parvas.

∴ The remainder is $\frac{1847x}{68 \times 67} = \frac{1847}{4154} x$ stars after Pushya. This reduced to Muhūrtas and sixty-secondths of a muhūrta will be equal to $\frac{1847}{4154} \times 30 = 13$ m. $+ \frac{21}{62} + \frac{1}{67}$, *i.e.*, the 1st parva will be completed in Āślēsha when 13 muhūrtas and $\frac{21}{62}$ of a muhūrta and one-sixty-sevenths of one-sixty-secondths of a muhūrta have elapsed.

Similarly the 2nd Parva is as follows :— $\frac{5}{124} \times 2 \times \frac{1830}{67} = \frac{9150}{62 \times 67}$.

Deduct from this 2728 parts of Pushya.

The remainder is $\frac{6422}{62 \times 67}$ stars $= \frac{6422}{4154} = 1 \frac{2268}{4154}$ stars. One star = 30 muhūrtas. But the star Āślēsha being of half an area takes only 15 muhūrtas. Hence deducting this we have 15 muhūrtas $+ \frac{2268}{4154}$ stars or $15 + \frac{68040}{4154}$ muhūrtas $= 15 + 16 \frac{1576}{4154} = 31 + \frac{23}{62} + \frac{35}{67}$ muhūrtas. By 30 Magha is completed. Hence the 2nd Parva occurs when $1 + \frac{23}{62} + \frac{35}{67}$ muhūrtas have elapsed in Pūrvaphalguni.

Similarly the third Parva— $\frac{5}{124} \times 3 \times \frac{1830}{67} = \frac{15 \times 915}{62 \times 67} = \frac{13725}{4154}$ stars.

Deduct 2728 parts of Pushya from this. The remainder is $\frac{10997}{4154}$ $= 2 \frac{2689}{4154}$ stars.

The two stars Āślēsha and Magha. For Āślēsha only 15 muhūrtas and Magha 30 muhūrtas are gone. Hence there remains 15 m. $+ \frac{2689}{4154} \times 30$ muhūrtas $= 34 + \frac{26}{62} + \frac{2}{67}$ muhūrtas. Of these, by 30 muhūrtas Pūrvaphalguni is passed. Hence the 3rd Parva (new moon) is completed when $4 + \frac{26}{62} + \frac{2}{67}$ muhūrtas in Uttaraphalguni are passed.

Similarly for the rest. Or there is also another ancient process of ascertaining the parva stars of the sun. Here 33 muhūrtas $+ \frac{2}{62}$ of a muhūrta $+ \frac{34}{67}$ of 62ndths of a muhūrta is a constant. This multiplied by the required number of parvas *minus* the corrections for Pushya and other stars will give the required star.

The constant is obtained thus :—

In 124 parvas there are 5 sun's revolutions.

" 1 " " $\frac{5}{124}$ "

$= \frac{5}{124} \times \frac{1830}{67} = \frac{4575}{4154}$ stars $= \frac{137250}{4154}$.

Muhūrtas $= 33 + \frac{2}{62} + \frac{34}{67}$ Muhūrtas.

The corrections for Pushya and other stars are as follows:—

i. $19 + \frac{43}{62} + \frac{33}{67}$ for Pushya.

This also is obtained as follows:—

When a cycle is completed, $\frac{23}{67}$ parts of Pushya are passed, leaving behind $\frac{44}{67}$ parts, which in Muhūrtas is equal to $\frac{44 \times 30}{67} = \frac{1320}{67} = 19 + \frac{43}{62} + \frac{33}{67}$ Muhūrtas.

ii. Then from Āślēsha up to Uttaraphalguni star 139 muhūrtas are to be deducted.

iii. Then up to Viśākha 259.

iv. Then up to Uttarāshāḍha 409.

In all these deductions the deduction for Pushya should be made separately.

v. Then for Abhijit $4 + \frac{6}{67} + \frac{32}{67}$ muhūrtas are to be deducted.

vi. Then up to Uttarâbhādrapada 569.

vii. Then up to Rohiṇi 719.

viii. Then up to Punarvasu 809.

Now according to this method, the first three parva stars can be ascertained thus:—

$$(33 + \frac{2}{62} + \frac{34}{67}) \times 1 = 33 + \frac{2}{62} + \frac{34}{67}.$$

Deduct from this the correction for Pushya $19 + \frac{43}{62} + \frac{33}{67}$.

The remainder is $13 + \frac{21}{62} + \frac{1}{67}$, *i.e.*, the sun completes the parva when so much in Āślēsha has elapsed.

Likewise for 2nd Parva;

$$(33 + \frac{2}{62} + \frac{34}{67}) \times 2 = 66 + \frac{4}{62} + \frac{68}{67}.$$

Making deduction for Pushya there remains

$$(66 + \frac{4}{62} + \frac{68}{67}) - (19 + \frac{43}{62} + \frac{33}{67}) = 46 + \frac{28}{62} + \frac{35}{67}.$$

Giving 15 for Āślēsha and 30 for Magha, we have $1 + \frac{23}{62} + \frac{35}{67}$, *i.e.*, the parva is completed when so much has elapsed in Pūrvaphalguni.

Similarly for 3rd Parva:—$(33 + 2 + 34) \times 3 = 99 + 7 + 35$ (denominator being omitted). Deduction for Pushya as above. Remainder is $69 + 26 + 2$. Then 15 for Āślēsha, 30 for Magha, 30 Pūrvaphalguni; there remains $4 + 26 + 2$, *i.e.*, when so much has elapsed in Uttaraphalguni, the 3rd parva is completed.

The several stars in which the sun completes the parvas in the 1st half of a cycle are thus enumerated in order by ancient sages.

1st	Parva	...	...	Āślēsha
2nd	,,	...	...	Pūrvaphalguni
3rd	,,	...	...	Uttaraphalguni
4th	,,	...	...	,,

5th	Parva	...	...	Hasta
6th	,,	...	...	Chitra
7th	,,	...	...	Viśākha
8th	,,	...	...	Anūrādha
9th	,,	...	...	Jyēshṭha
10th	,,	...	...	Mūla
11th	,,	...	...	Pūrvāshāḍha
12th	,,	...	...	Uttarāshāḍha
13th	,,	...	...	Śravaṇa
14th	,,	...	...	Dhanishṭha
15th	,,	...	...	Pūrvābhādrapada
16th	,,	...	...	Uttarābhādrapada
17th	,,	...	...	,,
18th	,,	...	...	Revati
19th	,,	...	...	Aśvini
20th	,,	...	...	Kṛittika
21st	,,	...	...	Rohiṇi
22nd	,,	...	...	Mṛigaśirah
23rd	,,	...	...	Ārdra
24th	,,	...	...	Punarvasu
25th	,,	...	...	Pushya
26th	,,	...	...	Magha
27th	,,	...	...	Pūrvaphalguni
28th	,,	...	...	Uttaraphalguni
29th	,,	...	...	,,
30th	,,	...	...	Chitra
31st	,,	...	...	Svāti
32nd	,,	...	...	Viśākha
33rd	,,	...	...	Anūrādha
34th	,,	...	...	Jyeshṭha
35th	,,	...	...	Pūrvāshāḍha
36th	,,	...	...	Uttarāshāḍha
37th	,,	...	...	,,
38th	,,	...	...	Śravaṇa
39th	,,	...	...	Dhanishṭha
40th	,,	...	...	Pūrvābhādrapada
41st	,,	...	...	Uttarābhādrapada
42nd	,,	...	...	,,
43rd	,,	...	...	Aśvini
44th	,,	...	...	Bharaṇi
45th	,,	...	...	Kṛittika

46th	Parva	...	...	Rohiṇi
47th	,,	...	...	Mṛigaśirah
48th	,,	...	...	Punarvasu
49th	,,	...	...	,,
50th	,,	...	...	Pushya
51st	,,	...	...	Magha
52nd	,,	...	...	Pūrvaphalguni
53rd	,,	...	...	Uttaraphalguni
54th	,,	...	...	Hasta
55th	,,	...	...	Chitra
56th	,,	...	...	Svāti
57th	,,	...	...	Viśākha
58th	,,	...	...	Anūrādha
59th	,,	...	...	Mūla
60th	,,	...	...	Pūrvāshaḍha
61st	,,	...	...	Uttarāshāḍha
62nd	,,	...	...	Abhijit.

Likewise following the Karaṇa process shown above the parva stars in the 2nd half of the cycle can be ascertained.

We are now going to explain the Karaṇa verses of ancient teachers as to which parva attains completion on the last day of the cycle and after the expiration of how many muhūrtas :—

The verses in prakrit run as follows :—

When one remains after the number of parvas is divided by 4, it is termed Kalyoja; when two is the remainder, it is termed Dvāparayugma. When three, Treta; when four Kṛitayugma. In Kalyoja 93 is the addition; in Dvāpara, 62; in Tretaiya it is 31; but in Kṛita there is no addition. When the number of parvas with the above additions is divided by 124, the remainder is reduced to half and multiplied by 30. The product is then divided by 62. The quotient is the number of muhūrtas elapsed with the parva.

This is the meaning of the verses :—

Now as to how many muhūrtas will have elapsed in the last day of the year before or with the completion of the first parva in a cycle, we proceed as follows :—

The parva is one. And one is a Kalyoja number. Hence we add 93 (parvas) to it. The sum becomes 94. We divide it by 124, (it being the number of parvas in a cycle). The numerator being less than the denominator, there will be no quotient. Anyhow we reduce the numerator to half, *i.e.*, 47, and multiply it by 30. The product is $47 \times 30 = 1410$; and divide it by 62.

$\therefore \frac{1410}{62} = 22\frac{28}{31}$ muhūrtas.

That is, the first parva is completed when $22\ \frac{23}{31}$ muhūrtas of the ave elapsed.

ii. Likewise for 2nd parva ;

2 is Dvāpara. Hence $2 + 62 = 64$.

$\frac{64}{124}$ does not give a quotient (integer).

Hence halving (the numerator), we get 32.

$32 \times \frac{30}{62} = \frac{480}{31} = 15\ \frac{15}{31}$ *i.e.*, the 2nd parva is completed when $15\ \frac{15}{31}$ muhūrtas have elapsed on the last day.

Similarly for the 3rd parva :—

We take 3. It is Treta. Hence 31 is added.

The sum = 34. This is not divisible by 124. Hence halving it and multiplying it by 30 and dividing the product we get $17 \times \frac{30}{62} = 17 \times \frac{15}{31} = \frac{255}{31} = 8\ \frac{7}{31}$, *i.e.*, the 3rd parva is completed when $8\ \frac{7}{31}$ muhūrtas have expired on the last day.

For the 4th parva, we proceed similarly :—

Take 4. Add nothing. It is not divisible by 124. Halving it we have 2. Multiply by 30. We get 60. Dividing it by 62 we get $\frac{30}{31}$ of a day when the parva is completed.

For 124th parva.

$\frac{124}{4}$ gives no remainder. Hence it is Kṛitayugma. Hence no addition. 124 divided by 124 gives no remainder. Hence we conclude that the last parva attains completion with the whole day.

Pramana Samvatsara.

This is of 5 kinds: Nakshatra (sidereal), Ṛitu (seasonal), Chāndra (lunar), Āditya (solar) and intercalary lunar.

The sidereal and lunar years have already been treated of. The Ṛitu and Āditya will be explained :—

2 Ghaṭikas	=	1 Muhūrta
30 Muhūrtas	=	1 Day and night
15 Days	=	1 Paksha
2 Pakshas	=	1 Month
12 Months	=	1 Year.

The year of 360 days and nights is a Ṛitu-samvatsara. This has two more names, Karma-samvatsara and Sāvana-samvatsara ; karma = work (laukika vyavahāra). Hence that year which is prominently observed by workmen is so called. This is said of it.

Karma month has no fraction and facilitates work, worldly transaction ; the rest have fractions and so in usage it is difficult to understand.

Sāvana means engagement in work. Hence that year which is chiefly agreeable to work is sāvana year.

The year of 360 days is called Karma year and also Sāvana year.

Similarly the time taken by the rainy and other seasons for compl of this one revolution is called solar year. It is, however, usual to assi days to each of the rainy and other seasons. Still really each of then 61 days. Hence the solar year contains 366 days.

The Karma or Sāvana year	...	...	360 days
The lunar	...	...	$354\frac{12}{62}$,,
The Nakshatra year	...	...	$327\frac{51}{67}$,,
The intercalary lunar year	...	...	$383\frac{40}{62}$,,

In a Yuga there are three ordinary lunar years of $354\frac{12}{62}$ days and two intercalary years. Hence in a Yuga there are 62 lunar months, 67 nakshatra months.

The Measure of Solar and other Months.

A solar year is = 366 days.

i. Hence one solar month $= \frac{366}{12} = 30\frac{1}{2}$ days.

ii. A Karma-samvatsara is = 360 days.
Hence 1 Karma month $= \frac{360}{12} = 30$ days.

iii. A lunar year is $= 354\frac{12}{62}$ days.
Hence one lunar month is $= \frac{354\frac{12}{62}}{12} = 29\frac{32}{62}$ days.

iv. A Nakshatra year is $= 327\frac{51}{67}$ days.
Hence one Nakshatra month is $= \frac{327\frac{51}{61}}{12} = 27\frac{21}{67}$ days.

v. An Intercalary lunar year is $= 383\frac{44}{61}$ days.
Hence one intercalary month $= \frac{383\frac{44}{62}}{12} = 31\frac{121}{124}$ days.

(1) In a yuga or cycle of 5 years or 1830 days there are 60 Solar months.
(2) ,, ,, 61 Sāvana months.
(3) ,, ,, 62 Lunar months.
(4) ,, ,, 67 Nakshatra months.
(5) ,, ,, 57 Intercalary months, 7 days, $11\frac{28}{62}$ muhūrtas.

For an intercalary month $= 31\frac{121}{124}$ days.
Hence $\frac{1830 \text{ days}}{31\frac{121}{124}} = \frac{226920}{8965}$ days =
57 months, 7 days, $11\frac{23}{62}$ muhūrtas.

A HINDU SHRINE IN CHINA.

By K. Rama Varma Raja, Esq., B.A., M.R.A.S.

We are told in the *Devi-Bhāgavata Purāna*, that there exists (or existed then) in China a celebrated holy shrine of the goddess *Nīla-Sarasvati* which is worth visiting ("तथा नीलसरस्वत्याः स्थानं चीनेषु विश्रुतम्"—VII—38—13). This passage occurs in a context wherein the Primæval Supreme Goddess is supposed to mention all the important centres of her worship in different forms to her faithful devotee, the mountain deity of the Himalayas, standing in obeisance before her. The goddess *Nīla-Sarasvati* may be identified with *Tāra*, who is addressed as mother, '*Nīla-Sarasvati*', in the opening verse of '*Tārāshtaka*' in '*Nīla-tantra*' (*Bṛihat-Stōtra Ratnākara*, pp. 181 and 182, Nirnayasagara Press, Bombay). Tāra is again an important and well-known form or manifestation of the supreme goddess, and her figure is found also among the Buddhist sculptures of the Northern (Mahāyāna) school in China, Japan and Tibet along with several other familiar forms—Kubera, Maitreya, Manjusri, Kwan-yin, Vajrapani, etc. The author's preface to *The Gods of Northern Buddhism* concludes with a formal dedication to the goddess Sarasvati and with a sincere prayer to her for inspiration of her consort Manjusri (the God of Wisdom or of Speech) "to draw his sword of wisdom and 'cleave the clouds of ignorance' so that in time the West may come to a clearer understanding of the East." Kubera and Maitreya, as they appear in the Buddhist and Hindu mythologies, have been referred to in my paper published in *The Mythic Society's Quarterly Journal* for July 1926, Memorial Number, (Vol. XVII, No. 1, p. 28); and I have tried elsewhere to identify Kwan-yin, 'the Goddess of Mercy' with the goddess 'Kanyā-Cumarī'* of the Cape

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* The above title is the appellation of the benign virgin goddess worshipped in the well-known Hindu temple at Cape Comorin, both of which—the temple as well as the place—are therefore called after this divinity. This compound word is made up of two nouns *Kanya* and *Cumari*, each of which means 'a maiden' or 'a virgin' and therefore repeats the same idea. This duplication or bilingualism is met with in the sacred formulas also. For example, Nagesa Bhatta, in the concluding portion of his commentary on the "*Sapta Sati*" *Stotra* quotes two Vedic *mantras*, one from *Samavidhi Brahmana* and the other (*a gayatri*) from *Yajurveda*, in both of which this combination occurs; in the first as *Kanyam..... Cumarinim* and in the second as *Kanyam Kumarini* but offers no explanation for this repetition of the idea by means of synonyms. It is perhaps a *Tantraic* and mystic combination. The goddess is also referred to simply as 'Kanya' (and possibly as Cumari also) in the sacred literature, and is further known in tradition as a patron deity of sea-voyage, being offered, and receiving, homage and presents from the sea-faring people rounding the rocky cape for securing safe passage.

The temple is situated at the south end of the Malabar Coast and Ghats. Somewhere about this must have been the ancient mount Potalaka or Potala of the Buddhist period and fame 'where

Comorin temple (*Ernakulam College Magazine*, July 1919). In the Buddhist countries the Hindu deities appear in the Buddhist garbs and *vice versa*, and both these sects may have the same deities adored in their own respective ways: yet, they are now mutually so jealous and exclusive that they are seldom known to associate with each other and participate in common religious observances. No orthodox Hindu would now acknowledge the sanctity of the Buddhist shrines of Tāra or any other deity. Hence it appears to be rather strange and curious that a temple in China is expressly mentioned as a principal holy centre of Hindu worship and not as one transplanted from India.

It will not certainly be out of place to note here other objects of Hindu worship recently discovered in China; *viz.*, sacred phallic stones which are the centres of worship naturally resorted to by married women in the hope of becoming pregnant, but now more generally by harlots for success or prosperity in their trade or business. For more detailed information on this subject reference may be made to the original Article (41) '*Man*', May 1913, which is my authority. The writer is inclined to trace the cult back to 'the

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the Buddhist spirit or saint Avalokitaswara worshipped by Northern Buddhist in Tibet, China and Japan was supposed sometimes to take his abode'. R. C. Dutt, giving Houen Tsang's account (*Ancient India*, Book IV, Ch. VII, p. 534, People's Edn.) places this celebrated hill to the east of the Malabar range, while Col. Waddell, following the same Buddhist pilgrim as guide, "on the sea-shore of Southern India on which stood the chief shrine and earthly seat of *Avalokita*" and which (the hill) might therefore probably be no other than the 'Red Bluffs' at Varkkallai, a holy place of hoary lore in Travancore. This ancient Indian Potala Hill shrine as depicted then was, according to Col. Waddell, the original or pattern of the Potala Palace-shrine built on the Red Hill at Lhasa in 1644 A.D. for the then Grand Lama of Tibet who then posed as the Priest-king-God, and earthly incarnation of the Buddhist 'God of Mercy,' *Avalokita*. The Potala Pillars and academies of Tibet and China are regarded to be of the same origin. The Potala model is said to have been carried further to the Island of Pluto or Potala of the Chusan Archipelago which contains "a celebrated shrine of the Goddess of Mercy or Kwan-yin, the female form of *Avalokita* who is especially regarded as the saviour of the sailors from perils at sea" (Col. Waddell's paper on the "Grand Lamas of Tibet", *Journal of the Royal Asiatic Society*, pp. 69-86, January 1910). Now the similarity, in name as well as in character, between the benign Hindu Goddess 'Kanya' and Kwan-yin the Buddhist Goddess of Mercy, seems to be clear and real, and the next question is which of these is the parent and which the offspring; and the following points and arguments may decide it satisfactorily.

Northern Buddhism, *i.e.*, of Tibet, China and Japan, has been shown to contain ingredients of native and other Indian cults and in Tibet especially it is defined as "a priestly mixture of Sivaite mysticism (including of course Tantraic Saktism), magic and Indo-Tibetan demonolatry overlaid by a thin varnish of Mahāyāna Buddhism. And to the present day, Lamaism still retains this character (Waddell cited by Prof. A. S. Geden as authority in his *Studies in Eastern Religions*, p. 316). If the Potala model had found its way into Tibet, China, Japan and other eastern countries of the northern Buddhists, it seems to be equally possible that the Kanya-worship too might have spread likewise, and the celebrated Buddhist shrines of Kwan-yin, distributed over the same wide area, might have been built and consecrated after the model of the Kanya temple at Cape Comorin. And I submit this conjecture, for correction and further enlightenment, to scholars like Col. Waddell, and await their criticism.

pre-Christian times, that is to say, prior to the second or the third century of the Christian Era;' and concludes that originally these stones were the emblems of the principle of fecundity, but have subsequently become degraded to their present status of "the Harlot's or Bad Woman's Stone".

"Prof. Takakusu describes in *The Young East* the Indian deities introduced into Japan. They are: Mahakala, Sarasvati, Lakshmi, Kubera, Ganesa, Kumbhira (a Yaksha), Varuna, Indra-Sakra, Brahma, Rudra, Narayana, Hayagrīva, Achala, Bhairava, Durga, Uma, Dakini, Hariti, Agni, Skanda, Yama, Gomukha, etc. The names and often the character and functions of the deities have been changed in Japan" (*Modern Review*, December 1925, p. 704). It has also been proved by the ancient monuments and inscriptions that Indians had migrated to Further India and the Malaya Archipelago even before the Buddhist propaganda reached those parts and had established there Brahmanical religion and Hindu culture. Out of this arose the great temples of Siva, Vishnu and other Hindu deities in the principal places in Siam, Cambodia, Java, etc., which are visible even to-day. Further India is said to have received its Indian colony from Orissa * or further north, and the islands of Indonesia from the Coromandel Coast†. Buddhism reached there and existed peacefully along with its rival religion and culture. Ceylon too might have received early contingents of Indian missions of the Hindus and the Buddhists.

Yet, no explicit mention has been met with in our Puranic or other sacred literature of any shrine or place of pilgrimage in these parts which the Indian Hindus are recommended to visit. So the Puranic passage quoted at the outset is unique for its direct mention of a Hindu shrine of worship and pilgrimage outside India (proper), which is at once important, original, independent and complete in itself, that is, which was not one transplanted or copied from India. But it existed in a Buddhist country—China; and it may be pointed out again that the Brahmanical and Buddhist schools in their early days lived side by side (both here and abroad) in mutual toleration, respect and brotherhood (as the different Hindu sects or the several Christian denominations *do now*). The open rupture and irreconcilable schism between them took place only when the latter took up an anti-Vedic attitude and defended it by open refutation of Vedic authority. Originally the two systems sprang up from the two Vedic roots—*Karma-kanda* and *Jnana-kanda*—and grew for a while on parallel lines—*Karmaic* and *Aupanishadaic*—and then began to diverge and finally separated never to meet again. They represented originally two different or divergent

* Mr. Gauranganatha Banerji's monograph on "*India as known to the Ancient World*".

† Mr. O. C. Gangoly's paper on "*The Cult of Agastya*" published in *The Mythic Society's Quarterly Journal* for January 1927.

courses of conduct—ritualism and spirituality—of which the former had to observe and adopt certain social distinctions and conventions for its maintenance which (these distinctions and conventions) became obnoxious to the latter which maintained absolute equality and philosophical or rationalistic truth in all matters alike. One of such essential conventions was the Vedic authority which was questioned and openly pronounced to be untenable. Violent split was now unavoidable and followed eventually resulting in expulsion of Buddhism from India and disappearance of Hinduism abroad. In the Puranic age, we presume, there was no irreconcilable schism. A Buddhist shrine might have been a holy place of worship to the Hindus and *vice versa*. To prove this proposition we may make an impartial and disinterested reference to the modern Buddha Gaya controversy without committing ourselves to any view regarding the rights of either party to it. Both the parties—the Buddhists as well as the Hindus—admit now that Gaya was, at one time and another, their common centre of worship and pilgrimage. Benares or Varanasi where Buddha began to preach his new doctrines was also likewise a holy place to both. This seems to have been the state of the Hindu-Buddhist relationship in the age of the Puranas.

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CAPITULATION OF CHITRADURGA.

By S. Srikanta Sastri, Esq., M.A.

The formidable fort of Chitradurga had been in the hands of Beydar Paleyagars—the Medakere Nayaks—from the time of final disruption of the Hindu Empire of Vijayanagara. The successors of Rama Raya held a nominal suzerainty over the domains while the Nayaks and Paleyagars held the real power all over the country. To mention a few—Nayaks of Madura, Medakere Nayaks of Chitaldurg, Wodeyars of Mysore, Paleyagars of Harapanahalli, Belur, Keladi, Ikkeri, Sante Bennur, Bellary, Chennapatna, Chikkamagalur, Devanahalli, Tarikere, Magadi, etc. Many of them claimed to be viceroys of the Vijayanagara Emperor. Thus Chitra Nayaka—Founder of Chitradurga—was authorized to build the fort by Krishna Deva Raya, while the Keladi Chiefs came into prominence under the same ruler and his younger brother Achyuta Raya. Raja Wodeyar of Mysore had his conquests confirmed by Venkatapati Raya at Chandragiri. Though for all practical purposes these chiefs were independent, yet they owed a nominal allegiance to the defunct Empire of Vijayanagara.

Chitradurga—called also Chintankal and Chinmaladri—had been of strategic importance from the days of the Hoysalas. In Vijayanagara times it was the seat of a viceroyalty and a special mint to coin Durgi pagodas—so called after the Durga—had been established. The Nayaks continued to issue the same type long after the Empire had fallen. The Nayaks were always at war with the neighbouring chiefs especially those of Keladi and Harapanahalli. I hope to deal elsewhere with the relationships of these chiefs which fill an important blank in the history of Mysore before the advent of Hyder and the English.

Vijayanagar had left in its wake those powerful baronages which carried on family-feuds from generation to generation with increasing bitterness and animosity till the dominance of the Rajas of Mysore and above all the conquest—lust of that remarkable historical personage Hyder put an end to all of them—a process which had its completion by the advent of the English.

I do not propose to go into the history of Hyder's conquests of other parts of the country, nor to the previous history of Chitradurg itself but will confine myself to the history of the actual capture of the fort. The main authority I rely on is a Bakhar in my possession—written by one yogyadharaka Bhimajipant in Vilambi, soon after the fort had fallen. It is in Kannada

with a great admixture of Maharashtra words and addressed to the Peshwa Srimanta Maharaj Sri Madhava Rao. The chronicle depicts in glowing terms the happy state of the country before the conquest, all the diplomacy Hyder employed and the prowess of the defenders.

Hyder in 1763 had put an end to the powerful Palayapat of Bednur which had been in the hands of the Queen Regent Virammaji. *The Keladi Nripa Vijaya* ends the story of Keladi with the pathetic words "Siva Bhaktara Samsthana Samapti". Hyder had been aided in this campaign by Medakere Nayak himself who thought he would end the family-feud with Keladi by foreign help. Unfortunately for him, his whilom associate proved to be his enemy. In 1770 Medakere Nayak had allied himself with the Mahrattas when Madhava Rao had raided all the country under Hyder's domination, up to the fort of Nijagal near Nelamangala which was besieged. Madhava Rao was in despair as even after a siege of three months the fort had resisted all onslaughts. At this crisis Medakere Nayak, by his matchless prowess, scaled the fort and secured victory for the Peshwa. Hyder could not forget his defeat and bided his time.

After taking Chikkaballapura, Gutti and other chieftainships, he contemplated the destruction of Chitradurg. But the fort being impregnable, he hit upon a plan to entice the chief out of the fort. He sent a letter to the effect that he was anxious for a private consultation. Medakere Nayak had sent his assistance to Hyder in his campaign against Bankapura and against Madhava Rao at Hanavatti. The Bednur Samsthana also fell because of his help. When Hyder had besieged Gutti which had been captured by Morari Rao Ghorpade, the chief had sent him help. Hyder now promised in return for all these services to give him the country as far as Sira and cancel all arrears of tribute if he would only meet him at Hiriyur. This letter was despatched by the hands of a Duffedar Jah Sudha with two elephants and Arab horses as presents.

The chief deliberated on the course of action in private. He could see through Hyder's scheme as well as anybody. His brother Parasuramappa advised caution and prudence and suggested that Hyder's plan should be exposed by diplomatic exchange of messages instead of entrusting the safety of the Navak's person to the tender mercies of the conqueror. Next day in the open Durbar, before the assembled people the Nayak represented the state of affairs and asked for their advice. Sarvottama Rao said that Hyder had been annoyed at the help rendered by the Nayak to Madhava Rao when he took Nijagal, Savantadurg, Huttaridurg and at the capture of Narayana Pattana, Nuggehalli, Hagalevadi and Banavara. But Hyder being too powerful and not easily put off, he advised the chief to send some excuse for not being able to attend personally. Therefore the Nayak wrote to Hyder that he too

was anxious to meet Hyder, yet it was not possible because of his ill-health. He sent two Vakils, Lakshmana Rao and Sarvabhauma Rao, to explain matters personally with a present of two elephants and four horses.

The message reached Hyder in his lashkar at Sira. He rose to the occasion and replied: "If the chief is not well, let him take rest for three or four days. I am sending a clerk to report progress." This clerk of Hyder was given quarters at Chitradurg and reported faithfully all that took place within the fort. Hyder then returned to Srirangapatna and sent Khandani Savars to levy the annual tribute. When the chief was about to hand over the money, a rumour was spread about at the instigation of Hyder himself that he had died of Bennu Phani. The tribute was consequently stopped. The clerk in Chitradurg wrote about it to Hyder at Hosur who returned instantly with all his forces and encamped at Turuvekere. From thence he sent his cousin Mohiyuddin Sahib to the assistance of Muttoda Halappa Nayak, to capture the cattle of Chitradurg at Budihal. He sent his Savars again for the delayed tribute and when he received it he expressed his intense joy at the progress in the health of the Nayak, and ordered sweets to be distributed and canon fired in his honour. "I hope," he said to the vakils, "that the Nayak is now well enough to come and meet me. Is it true that a huge quantity of gun-powder, bullets and rockets are being manufactured in the fort?" They replied that the fort being beset on all sides by hostile chieftainships of Bedanur, Harapanahalli, Rayadurga, Nijagal and Tarikere, there had been built up a huge store of war materials ready to hand in case of urgency and that there was no need to manufacture fresh material. Next Hyder inquired as to the water supply and strength of the fort. The vakils said that the water would last for twelve years even if no rain fell and that the fort was impregnable. Meanwhile Halappa Naik of Muttod with the assistance of Mohiyuddin Sahib captured the cattle at Musavana Kanive Ghat. The ryots ran up to the fort and complained to the Nayak. Medakere Nayak was furious and sent four thousand horse to recapture the cattle. The force arrested the marauders in the west, under the Sirdars Kutubdin Khan, Salbat Khan, Venkoji Jigdhal and Lakshmana Rao Jigdhal. In the south the retreat was cut off by Bakshi Chenna Mallaya. There was no way to the east. In the north Janardhana Singh and others waited around their king. Thus surrounded on all sides the Mysore forces grew desperate and rushed north. The skirmish continued for five hours. Mohiyuddin Sahib was captured and imprisoned and there was great rejoicing in the fort.

Hyder was once again defeated but his resourcefulness did not fail him. His aims were now firstly, to free Mohiyuddin Sahib and secondly, to deprive the Nayak of Mahratta help. Diwan Purnaiyya advised him to

rouse up the chiefs of Harapanahalli and Rayadurg who were always at feud with Chitaldurg. When the resources of the Nayak were directed against them, Hyder could easily capture the fort. Hyder, thereupon, wrote to Basappa Nayak of Harapanahalli and Krishnappa Nayak of Rayadurg to meet him at Sira. Next he wrote to Medakere Nayak thus. "While Mohiyuddin Sahib was at Budihal, Halappa Nayak came to him and said, 'my cattle have been captured by Chitradurg forces. I want your help to capture my own cattle.' Mohiyuddin Sahib, it appears, rendered assistance without my knowledge. I can never forget the great help you have rendered me in the past. I request you to send back my cousin." Medakere Nayak after deliberation sent back the prisoner with all honour.

Hyder now encamped at Ratnagiri and sent a peremptory note for a meeting. If the Nayak himself could not come, he should at least send at once his son and heir Bharmappa Nayak and his own brother Parasuramappa as hostages or war would be declared. The Nayak refused the ignominious offer and at once prepared to resist. He sent the Dalavays of the frontiers to their respective forts at once and imprisoned the clerk of Hyder at Chitaldurg. He wrote to Poona for an assistance of fifty thousand horse. Molkalmuru, Kanakuppe, Dodderi, Bilichodu, Basavanakote Mayikonda, Anagi, Davanagere, Holalkere, Ramagiri, Hosadurga, Gudikote, Horamale, Hiriyur—all these forts were to be prepared for a desperate resistance. He wrote to the various chiefs of Kadapa, Karnul, Adavani, Kanakagiri and Havanur to send him help. The defence of various Batheris of Chitaldurg was placed under able officers and an account was taken of the provisions and ammunition. The various Batheris were : (1) Ranamandala, (2) Panchakanive Gudda, (3) Nellikai Siddappa Gudda, (4) Madana Gudda, (5) Mukti Sivalaya, (6) Vidumbeswara Gudda, (7) Savanta Gudda ; over the Hill (1) Lalgudda, (2) Jagina Maradi, (3) Patte Darwaz, (4) Hebbulikal, (5) Nagara Suttu, (6) Vanake Gandi Darwaz, and (7) Bairappana Kal. The line of defence was constituted as follows:—From Hebbulikal to Vadavalappana Gudda, from the Muraghi Matha to Tamara Katte, from Rangavvana Kanive to Gonur Kanive, from Devappana Kanive to Hingaldhal, from Siddheswara Kanive to Motalada Kanive. Near the water tank, Kadamari Kallappa Nayak was stationed. In the north near Sante-Bagilu, Aliya Huchhappa Nayak and Sahib Jadhe Bharmappa Nayak and in the east near the Sira Darwaz there was Bhai Parasuramappa Nayak. In the south near Lal Gad Bhau Medakere Nayak. Outside the town from the city to Govindana Katte, Hamir Sahib, Sivaprasad, Dhana Singh, Rama Singh and Lakshmana Singh held the defences.

Next Medakere Nayak gave free permission to the weak, infirm and old, to women and children to leave the fort and take refuge elsewhere ere the

invading army surrounded them and rendered all egress impossible. But the people showed splendid loyalty and refused to leave their sovereign. The Nayak was greatly pleased and there was general rejoicing. Hyder once again sent his vakils for a definite reply. "The bullet is the only answer," came back the spirited response.

The Mysore army now marched at once from Ratnagiri and encamped on the banks of the Vedavati. From thence the vast camp extended as far as Hebbulikal, Cholagatti Gudda, Muraghi Matha and Buddhivantana Maradi in the south. Hyder took up his telescope to view the defences of the city and sent a small force to the fort-gates to test the range of the enemy's cannon.

The siege began on Ashadha Suddha Dasami of Hevilambi Samvatsara. Harapananalli forces encamped at Murghi Matha while the Rayadurg army was at Buddhivantana Maradi. Hyder between the two surrounded the fort with his army and tried to starve the garrison into submission. Near every Darwaza—Fathe Darwaza in the east near Venkata Rama temple, in the south Sira Darwaza, and Laladakote Darwaza near Buddhivantana Maradi—Sirdars were stationed to prevent outside help. Hyder once again sent a message to the Nayak to the effect that if the chief would meet him in person and pay the cost of the expedition—six lakhs of varahas—he would go back to Srirangapatna. The Nayak replied to the vakils of Hyder, Kadapa Subba Rao and Manavalli Srinivasa Rao : "The Nawab, in return for the help I rendered even against my own friends Madhava Rao and Murari Rao at Bankapur, Anavatti and Nagar, is assisting my enemies, the chiefs of Harapanahalli and Rayadurg. He has looted Hosadurga, Janakallu and maltreated the ryots. Now he has come with the evil intention of destroying us by guile. Therefore our meeting place will be the battle-ground alone. You said that he would destroy the fort in a couple of days. Let him try. This fort is not made of wax. Victory lies in the lap of God. If you win I wish you joy of the victory."

Next morning the fusillade began. Hyder's guns, however, were pointed either too high in which case the shot fell over the hill or too low striking the moat. But in one place—Govindana Kattu—there was no moat. Hyder made a surprise attack at the place but was foiled by the desperate resistance of the defenders. Thus two months passed by. Hyder now determined to make an attack on the water reservoir and thus compel submission. A night attack was made at the Vanake Kandi Darwaza, which would have been successful but for the resourcefulness of a woman—so runs the story. She had been there to fetch a pail of water where she noticed some of the enemy making an entry by a hole in the wall. Instantly, with heroic fortitude and fearlessness, she seized a huge rolling-pin (*vanake*) and smote at their heads

as they tried to enter. Meanwhile the rest of the army had applied scaling ladders and by the light of numerous rockets tried to enter the forts. The besieged now mustered strong and repulsed them, on which an attack was made on Phalguneswara Khilla. There the Sirdars Rama Singh, Lakshmana Singh and Sivaprasad vowed that they would compel the invaders to retreat or die in the attempt. Rushing upon the enemy they captured the standard planted at Siriyappana Kal. Hyder was furious and commanded Krishnappa Nayak of Rayadurg to scale the fort at Laladagudda where there was no moat. But the defenders made a sudden sally and routed him. Two thousand soldiers of Rayadurg were surprised by the Nayak's forces which had come behind them by a secret path. Thus the retreat was cut off, many perished and others were granted quarter. Hyder was foiled once more.

Another month passed by without any serious incidents. By this time, a message from Poona to the Nayak fell into the hands of Hyder. The Peshwa encouraged Medakere Nayak to persist in his defence and he was sending Sirdar Gopala Hari with sixty thousand horse for his assistance. Hyder thereupon wrote to the Nayak, " I came here only to test your prowess and not in enmity. If now at least you pay me nine lakhs and send hostages, I will go away." He contemplated bribing the Mahratta Sirdar with the money to be neutral and taking the fort at his own sweet pleasure.

Medakere Nayak had now grown tired of waiting for help from Poona. Nearly seven months had passed by without any message. Therefore he thought he could make peace now and take revenge on a future occasion. His brother Parasuramappa gladly consented to go as hostage. There were only six lakhs of varahas in the treasury. On his word of honour, Hyder promised to raise the siege if the six lakhs were paid then and the remainder a few days later. The money was duly paid and Parasuramappa prepared to go as hostage. But this time fresh messages came from Poona. Sirdar Gopala Hari and Vakil Purushottama Pant with fifty thousand horse, twelve guns, and five thousand rockets had been sent to capture Hyder alive and send him on to Poona. The Mahratta army was encamped at Kapota Gudda on the banks of the Krishna. Therefore Parasuramappa went back into the fort and Hyder's vakils were dismissed peremptorily. The soldiers from Adoni and Kanakagiri returned to their homes. Muttoda was besieged and Halappa Nayak had to flee. Hyder, however, engaged Gopala Hari in battle and made peace with the Peshwa by paying ten lakhs and sent the Sirdar back.

Medakere Nayak heard that two lakhs of varahas were being sent to Srirangapatna and determined to capture the money. Hyder's sepoys however heard of the design and fleeing to Harihar sent for Hyder's help. Tippu was sent at once with twenty thousand horse to chase the Nayak

back to the fort and if possible to capture him. Warned by Hanumanta Gowda of Habanur, however, Medakere Nayak managed to slip back into the fort closely followed by Tippu who, however, could do nothing.

Foiled once again, Hyder adopted the policy of isolation and creating dissension within. No help was possible from Poona or from the neighbouring chiefs. Moreover there were a number of Muslims within the fort who, when properly handled, would prove extremely helpful. Parasurama Bhau must be cut off by placing twenty thousand horse near the Tungabhadra to oppose him. Many deserted the Nayak lured by the love of lucre. Hyder tried to frighten the garrison by continuous fusillade for two days and scaling the fort. The Nayak personally superintended the defences and encouraged the soldiers by his own example. Boiling oil and *ganji* were poured on the besiegers, huge boulders were thrown from the top. This attempt to capture the fort also failed.

Hyder now sent a pious Kazi to Ashraf Khan in the fort and they spoke to Ahmadkhan and Kazi Jumla Sahib : " Hitherto we have served the Kaffirs. Now the champion of our own faith has come to our relief. More than this, how can a petty Paleyagar reward us adequately ? If you join Hyder you will be rewarded well here as well as in Heaven. If you are willing to become Kaffirs you are at liberty to do so." The Muslim leaders consulted among themselves and on Moharram day while going to the tank outside the fort at Mullapur, were received by Hyder and agreed to betray their master. Thus all the Muslims proved traitors. By their insinuations many Mahrattas and Beydars proved disloyal. Even then the Nayak did not give up hope. For three months the siege continued.

On Magha Bahula Bidige, Hyder once more made an attack on the water-reservoir. But the attempt was foiled by Sirdars Balaji Pant and Tammaji who died in battle. At the same time a mine was dug under the moat at Rangayyana Bagilu. While the enemy was entering the mine, the besieged dug a counter mine under the enemy and blew them up.

The only weak spot in the defence was at Hebbulikal—a secret which unfortunately had been known to some of the traitors. Twelve hundred sepoys came by this secret path and surprised the garrison. The Nayak heard that invaders were entering everywhere and could not be checked. At this crisis, the Muslims and people of Hurupkal remained passive. The Nayak felt that the end was at hand. Next morning, he crowned Bharmappa Nayak, and calling upon his followers to follow him in death as in life, he donned saffron-robes and throwing wide open the fort gates, was soon lost in the ocean of invading army.

Colonel Wilks gives the following account of the capture of Chitradurg, which differs in several important respects from the foregoing account :—

" Poligar of Chitaldurg (called Chitrigul) influenced by the assurances of his agent at Poona that the first military officer of state (Hurry Pant Parkia) would invade Mysoor, did not follow Hyder in his campaign against Nizam Ali and Peshwa, the son of Sevai Madhava Rao Narayana Rao and helping Raghoba. . . . Hyder's formidable army marched from Gutti to Chitaldurg and rejecting the submissive officers of the unfortunate chief to atone for the error by a large fine sat down before the place in the month of July. The siege continued for three months with more perseverance than military skill on the side of Hyder and on the part of the besieged with a mixture of heedless enthusiasm and head-long valour characteristic of the Beydar tribe. A temple dedicated to Kali was erected on the top of the Durg. On every Monday the Beydars made a religious sortie. This after a few repetitions was as regularly known in the camp of the besiegers as in the fort. Everything was known except the exact point of attack and notwithstanding all advantages of preparation on the part of the besiegers, the Beydars never once returned without penetrating into the trenches and carrying off a certain number of heads to offer at the shrine of Kali. After the fall of the place, the heads were found ranged in rows of small pyramids in regular order in front of the temple of the Goddess to the amount of about two thousand. . . . .

" A composition was at length arrived at by which Hyder professed to forgive the past and accepted as a pledge of future obedience thirteen lakhs of Pagodas of which five in wrought plate had already been paid, when intelligence arrived that ministerial commander-in-chief Hurry Pant was approaching from Poona with an army rated at 62,000 horse. . . . Hyder determined to put to a severe and immediate proof the professed allegiance of the Poligar. The whole transaction was probably a snare. He destroyed his batteries and trenches and summoned the Poligar to attend his standard against Hurry Pant. If fortune should declare in favour of the Mahrattas, it is obvious that obedience would be fatal to all the hopes of the Poligar and if Hyder should prevail to obey or disobey would leave only a choice of evils, namely, to pay the remainder of the treasure or to stand the siege. To obey presented a chance of good and in consequence of this reasoning, which has been circumstantially stated to me by one of his descendants, he promised—but evaded assistance. . . . . (Retreat of Hurry Pant).

" These arrangements being completed about the close of the year (1777) and himself with the main army, sat down a second time before Chitaldurg. . . . . .The Poligar had a number of Mohammadans in his service, formed into a corps regularly armed of about 3,000 men whom Hyder found means to corrupt through the medium of their spiritual instructor, a holy and unsuspected hermit. (I have seen and conversed with this holy personage whose service on this occasion was liberally rewarded by Hyder.) When the

Poligar discovered he was betrayed. . . . . he ascended a palanquin of state and ordered himself to be carried to Hyder's camp and threw himself at the mercy of the victor in the beginning of March 1779. The plunder. . . . amounted to no more than five lakhs of Rupees. The whole family was of course secured and sent as prisoners to Seringpatam."

In the Bakhar, no mention is made at all of the Nayak's willingness to pay a fine and atone for his error before the siege began. It was Hyder who began real hostilities by cattle-lifting. According to Wilks the Maharatta contingent consisted of 62,000 horse. But the Bakhar says that fifty thousand horse, five thousand rockets and twelve guns had been despatched. The circumstances of Hari Pant's desertion have been glossed over by the Mahratta chronicler in a way more creditable to the Mahrattas than facts would warrant, neither is there any mention of the fact that Hyder called upon the Nayak to help him against Hari Pant—an incident which Wilks tells us "has been circumstantially stated to me by one of his descendants". Hyder, says Wilks, demanded thirteen lakhs of pagodas and that already five had been paid when the news arrived of Hari Pant. The chronicle however tells us that he demanded only nine lakhs and the treasury contained only six lakhs which were paid at once and the remainder promised at a future date. "The plunder that accrued to Hyder after the fall of the fort," says Wilks, "including cash, jewels and personal ornaments of women amounted to no more than five lakhs of Rupees." Colonel Wilks also tells us that Medakere Nayak surrendered to Hyder and that his family was imprisoned at Srirangapatna. The Bakhar however says that only the Nayak's fame, prowess, charity and courage remained on earth and the Raja Sahib's relatives, Parasuramappa, Sahib Jadhe Bharmappa Nayak, Dodda Medakere Nayak and others, returned to the fort, though sorely wounded and lived happily.

Hyder was immensely impressed by the attachment the Nayak inspired in the minds of his subjects. "No severity of military execution could restrain persons of each sex and every age from risking their lives with the constancy and exaltation of martyrs, for the purpose of carrying to the besieged such supplies as an incessant succession of individuals could convey . . . . .Hyder saw the stern stuff the people were made of when judiciously handled and trained would make excellent soldiers. He, therefore, swept off 20,000 of the population, organized the young men into military bands called Chelas, which were greatly helpful to Tippu." The noble independence and heroic exploits of the heroes of the siege are even now celebrated and cherished by the people of Chitaldurg.

Estimation of Forces on Both Sides.

A. Hyder's Army.—One lakh.

1. Cavalry	37,000	5,000 Private Contribution 32,000 Sarkar Horse
2. Nivulla Bar Sepoys	54,000	10,000 Black 9,000 Yellow 10,000 Babbari 5,000 Green 20,000 Red
3. Sappers and Miners (Kamati)		8,000

B. Medakere Nayak's Army.—50,000

1. Cavalry	10,000	3,000 Private Contribution 7,000 Nayak's Horse
2. Foot	29,500	9,800 from the Gadis 3,000 Munition men 1,600 Sappers and Miners 700 Saragavis.
3. Bar Sepoys		5,500
4. Karnatic Horse		5,000

The following list of various coinages in the Toshakhana at Chitaldurg will be of some interest to the numismatists :—

A. Gold Coins.—

Gabaru		Jat Mahal	
Mohar		Darwadi	
Matali		Pralayakaveri Honnu	
Siva Rai Honnu		Pralagatti	,,
Badshaha	,,	Papa Nayaka	,,
Sannagiri	,,	Adavani	,,
Achyuta Rai	,,	Tadapatre	,,
Deva Rai	,,	Pade	,,
Rama Rai	,,	Nisani	,,

B. Silver Coins.—

Riala—10 lakhs; Asara—17 lakhs; Chauri—10 lakhs.

THE MAURYAN INVASION OF THE TAMILAKAM.

By Soma Sundara Desikar, Esq.

In a short note contributed to the *Quarterly Journal of the Mythic Society* (Vol. XVI, No. 4) on the Mauryan invasion of the Tamil land, Mr. K. A. Nīlakanta Sāstri of the Srī Meenākshi College, Chidambaram, concludes his note saying that 'the persistent reference to cutting through mountain passes and making a passage for the chariots of the invaders (the Vamba Mauryas) is, however, not now susceptible of any cogent explanation.' To have a clear idea of this cryptic line, we have to go back to the origin of the story itself. In the beginnings of this century Dr. S. Krishnasamy Ayyangar while controverting the eighth or ninth century theory of Bishop Caldwell on the 'Augustan Age of Tamil Literature', fixed the second century as the probable date with sufficient authority following in the wake of the late lamented V. Kanakasabai Pillai. In 1913 Pandit M. Raghava Ayyangar of the Madras University Tamil Lexicon Committee read an essay on the life of Çéran Çenguṭṭuvan at the Madura Tamil Sangam Anniversary Celebrations in the first instance, and then developed the subject and published it in book form. He devoted chapter XII of the book to the determination of the age of the Çera Emperor and incidentally brought to the notice of the public the Mauryan invasion of the South and fixed the fifth century as the Augustan Age. Dr. S. K. Ayyangar in one of his University lectures (1918, January & February) examined this theory and then putting up his ideas in book form, writes that Raghava Ayyangar, passing in rapid review the late Mr. Kanakasabai's conclusion in regard to the matter, lays down his main position somewhat as follows:—

> " It is well known that among the poets that constituted the Sangam, Kapilar, Paranar, Nakkīrar, Māmūlanār, and Sāttanār took a prominent place. Among these, Māmūlanār appears from certain poems included in the '*Ahanānūru*' to have been contemporary with Chola Karikāla, Çeralāthan, Kaḷvar Kômân Pulli; from this source also appears clearly that he was one who has travelled much in the various parts of the Tamil country and in countries north of it. This poet is taken to be contemporary with Çengüṭṭuvan Çera, as he refers, in Aham 251 to a war between the Mauryas and the chief of Mohur, which is taken to stand for the chief Paḷayan Māran, who is said elsewhere to have fought against the Çera. Quoting from Aham 265, he refers Māmūlanār to a time subsequent to the destruction of Pātalīputra to which he sees a definite reference in a passage quoted. This is the first and in fact the strongest argument of his thesis for ascribing Çengüṭṭuvan to the fifth century A.D.; but he

arrives at this result by a series of arguments which seems to me to find no justification in history. He interprets the expression in the passage quoted as referring to the destruction of Pātalīputra by the Ganges, whereas in actual fact it could mean no more than the disappearance of the great wealth that the Nandas collected in Pātalīputra in the Ganges. This might well have been brought about by the Nandas themselves throwing it into the river rather than letting it fall into the hands of their enemies, in the revolution that subverted their dynasty. Starting from his peculiar interpretation of the passage, he postulates the destruction of Pātalīputra by the floods of the Ganges and finds the period of such destruction in the time intervening the visits of the two Chinese travellers to India, namely Fa Hian in the beginning of the fifth century and Hieun Tsang in the second quarter of the seventh century A.D. He further equates the Mauryas who had invaded the territory of Paḷayan Māran, perhaps in a previous generation, with the army of the Gupta king, Samudra Gupta. He finds support for this in the mention of the Mantaraja who is taken to be "a king of Kerala" and the same as Mandaram Çēral. The rest of his reasoning in the whole chapter is of the same character and minor importance."

The learned doctor after fully discussing the subject concluded (the chapter on chronology—Tamil literature in his *Beginnings of the South Indian History* wherefrom the above quotation was taken) thus :—

"The equation of Vamba Mauryar with the army of invasion under Samudra Gupta : it has already been pointed out that the interpretation of the quotation regarding the Nandas is wrong altogether, and that it is so proved by a similar passage in lines 4 and 5 of poem 251 of Aham ; but *there are a number of references which carry the invasion of Mauryas up to Mohur of Paḷayan Māran.* In one of these passages, at any rate, the Pandit tries to establish the contemporaneity of this invasion with the Paḷayan Māran, which, from the text, is untenable. The term Mohür is used in the passage to stand for the chieftain of Mohur not necessarily Paḷayan Māran. *That reference and the various other references to the Mauryas in Māmūlanār, as well as their cutting their way through rocks in their march southwards, all of them do refer possibly to a great southward invasion of the Mauryas, a newly established dynasty.* We know, now, beyond doubt since the discovery of the new edict of Asoka at Maski in the Nizam's dominions, that Asoka's territory extended right down to the frontier of Mysore within the boundaries of which other edicts were discovered years ago. We know of no wars excepting the famous Kalinga wars that Asoka carried on for purposes of conquest. Chandragupta not having had the time to do it, the further conquest of

territories not included within his empire, but included within that of his grandson, historians ascribed to Chandragupta's son Bindusāra, the father of Asoka, who himself held the viceroyalty of the southern frontiers with his capital at Videsa. *The conquest of the South by the Mauryas must have therefore been made by either Bindusāra the king or by the Viceroy-prince, his son.* The term Vadukar used in this connection by the Tamils is a general designation for all northerners, and indicates the various references before us, and onward move southwards of a certain northern tribe, of which we get perhaps the final glimpse in the movements of the Pallavas till they come into occupation of Kanchi and the extension of their power at least as far south as Trichinopoly and Kumbakonam. All the passages of Māmūlanār, referring to these incidents, refer to them as past occurrences and not as contemporary events. This interpretation of the passages relating to northerners agrees very well with the claim of certain Tamil kings who had won victories over the Aryan army, which attribute is given specifically to the Pandian Nedumçeliyan whose name figures in the *Chilappathikaram. Such a general movement against the north could on general considerations be postulated only of the period of confusion that followed the decline of Maurya power in the north and the rise to the imperial position afterwards, of the Andras and the Andra Brittyas in succession.* The fifth century is hardly the century in which we get anything like a glimpse of such a great movement of people."

This and an article in the *Journal of the Asiatic Society* entitled " Kosar of Tamil Literature " (October 1923) was probably the authority for the statement by Dr. Barnett in the *Cambridge History of India* that " from the reference of the poets to them it would seem that they once made an unsuccessful attack on Mogur and found allies in the Vamba Mauryas or Bastard Mauryas, possibly a branch of the Konkani Mauryas".

On reading the above statement, Mr. K. G. Sesha Iyer of Trivandrum wrote to the *Journal of the Mythic Society* (Vol. XIV, page 375) controverting those statements and said Kosars were never the advance guard of the Mauryas but were the friends of the Mogur chieftain. The last issue of Mr. Sesha Ayyar's article was " who were the Vamba Moriar and did they invade South India ?". After elaborately discussing the matter, taking particularly the stanzas in question, he came to the conclusion that the reading " Moriar " is incorrect and it ought to be " Oriar " according to the variant reading found in the *Puranānūru* (Lyric 175); if it is considered that the reading is Moriar, then, they ought to be imperial Mauryas and concluded as follows :—

"Did these people, whether Moriar or Oriar, actually come to South India? It is clear their objective was South India; but whether as a matter of fact they reached South India we cannot definitely say from the materials available. The relevant poem in this connection is *Ahanānūru* 281. For their southward march, the poem says the Moriar crossed the mountain, sending the Vadukar as an advance guard or, perhaps, opposed by the Vadukar. *Vadukar Münnuṛa* which is the expression occurring in the poem may bear either of these two meanings; but perhaps the former is preferable. Like the Moriar, the Vadukar too are described as Vamba Vadukar, Aham 375: and they were obviously a ferocious people, as their frequent description *Katanai Vadukar*, Vadukar fierce as dogs, would show (Aham 107, 381). If they came as the vanguard of the Moriar army, they sustained an ignominious and crushing defeat at the hands of the Chola Perum Çenni (Aham 375); and we do not hear any conquest or occupation of the Tamil land by the Moriyar. Perhaps for some reason or other the Moriyar never entered South India though the language of Aham 281 (Ten ricai matiram münnia varavirku)* undoubtedly shows that was the point towards which their advance was originally directed.

On reading this article Mr. Nīlakanta Sāstri wrote to say that the reading Moriyar has been established but *the reference to cutting through mountain passes and making a passage for the chariot of the invaders (vin poru nedum kudai yiyerer mariyar, pon punai tikiri, tiri tara-k-kuraitta) could not be cogently explained.* (*The italics all along are mine.*)

Mr. Sesha Ayyar in his learned article contends that even though the reading of Moriyar is established they never entered the South or Tamilakam. I shall show that he is correct in saying that the Mauryas never entered South India. The odes where this information is recorded are three in number (Nos. 69, 251 and 281) and run as follows:—

Āi nalan tholainda mèniyu màmalar-t-
Takai vana-p-piḷanda kaṇṇum vakai yila
Vaṇṇam vādiya variyu nôkki
Yāḷa lānriçi niyé uridini
Nīda linbam vaiki mai varach-
Sai poru-t-tiṛavarāki-p-pullilai-p-
Parā arai nelli yam puḷi-t-tiraḷ kāi
Kāna mada marai-k-kaṇa nirai kavarum
Véni latta mènnā dèmuṛṛü
Vinporu nedu varai yiyarér Môriyar

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* தென்றிசை மாதிற முன்னிய வாவிற்கு.

Pon punai tikiri tiritara-k-kuṛaitta
Varai Iṛan dakanṛanarāyinum ènaiyadüu
Nīdalar vāḷi tôḷi yādian
Madamayi loḷitta pīli vārndu tañ
Çilai māṇ valviṛ chuṛṛi-p-palamā
Ṇambudai-k-kaiya-raraṇpala nūri
Nankalam tarū-um-vayavar perumakan
Çüdar maṇi-p-perumbūṇ āi kānattu-t-
Talainā ḷalari nāṛunin
Nalar mulai yāka-t-tinṛuyin maṛandai.*

—69 *Parankoṛṛanār.*

The maid soothes her lady who was pining on the inordinate delay of her lord that went in search of gold (property). A free translation of the ode will run thus:—O Lady! be soothed! Do not pine, please, at the loss of the colour of the body, at the eyes that were radiant like lilies, nor at the stoppage of writings on the body; be brave; as you are the only favourite, he would not tarry longer (than is necessary) forgetting the pleasures he enjoyed with you, though he—your lord who is able to present you with brilliant ornament by destroying the fortifications guarded by men with strong bows

* ஆய் நலந் தொலைந்த மேனியு மாமலர்த்
தகைவனப் பிழந்த கண்ணும் வகையில
வண்ணம் வாடிய வரியு நோக்கி
யாழ லான்றிசின் நீயேயுரிதினி
னீத லின்பம் வெஃகி மேவரச்
செய் பொருட்டிறவராகிப் புல்லிலைப்
பரா அரை நெல்லி யம் புளித் திரள் காய்
கான மட மரைக் கண நிரை கவரும்
வேனி லத்த மென்ன தேமுற்று
வின்பொரு நெடு வரை யியறேர் மோரியர்
பொன் புனை திகிரி திரிதரக் குறைத்த
வரை யிரந் தகன்றனராயினு மெனையதூஉ
நீடலர் வாழி தோழி யாடியன்
மடமயி லொழித்த பீலி வார்ந்து தஞ்
சிலை மாண் வல்விற் சுற்றிப் பலமா
ணம்புடைக் கைய ராரண்பல நூறி
நன்கலந்த ரூவும் வயவர் பெருமகன்
சுடர் மணிப் பெரும்பூண் அய்காணத்துத்
தலைநாளலரி நாறுநின்
னலர் முலை யாகத் தின்றுயின் மறந்தே.

and arrows that are adorned with the feathers of peacocks—has passed in search of gold that mountain that has stopped the further rolling of the wheel of the golden chariot of the Moriyas who rule the mountain that tower the sky (Himalayas).

Tūdüm chenrana tôḷum cheṛṛu
Môti yoṇṇutar-p-paṡalaiyu māyum
Vīngiḷai nehila-ch-cha ai-ch-chellalodu
Nām padar kūrü maründüyar ketpi
Nandan verukkai yeydinu maṛṛavaṭ
Taṅgalar vāḷi tôḷi vel kodi-t-
Tunai kālanna punai tér-k-kôṡar
Ton mūtālat-t-tarum paṇai-p-potiyi
Linnicai mürasaṅ kadippidittirangat
Temmünai chidaitta ñāṇṛai môkūr
Paṇiādamaiya pakai talai vanda
Makeḷu tānai vamba môriyar
Punai ter nēmi yuriḷiya kuṛaitta
Vilangu veḷḷaruviya varai vā yumbar
Māṡil veṇkoṭ-ṭaṇṇal yānai
Viḷaiyu-ṭ-ṭappiya varungkéḷ vayappuli
Mānila neliya kutti-p-pükalodu
Kāppil vaikum tēkkamil çôlai
Nirambā nīḷidai-p-pôki
Arambo ḷavvaḷai nilai nēkiḷn dôrè.*

—251 *Māmūlanār.*

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* தாதுஞ்சென்றன தோளுஞ் செற்று
மோதி யொண்ணுதற் பசலையு மாயும்
வீங்கிழை நெகிழச் சாஅய்ச் செல்லலோடு
நாம்படர் கூரு மருந்துயர் கேட்பி
னைந்தன் வெறுக்கை யெய்தினு மற்றவட்
டங்கலர் வாழி தோழி வெல்கொடித்
தூண காலன்ன புனைதேர்க் கோசர்
தொன் மூதாலத் தரும்பணைப் பொதியி
லின்னிசை முரசங் கடிப்பிடித் திரங்கத்
தெம்முனை சிதைத்த ஞான்றை மோகூர்
பணியாதமைய பகைதலை வந்த
மாகெழு தானை வம்ப மோரியர்
புனைதேர் நேமி யுருளிய குறைத்த
விலங்கு வெள்ளருவிய வரைவாயும்பர்

This is an ode by the maid to her lady on her sorrow on the departure of her lover. O lady-bird ! Calm yourself, footmen have been despatched to your lord, who has gone to the other side of the mountain—that has streams with transparent waters which stopped the further march and turned back the running of the ornamented cars of the Vamba (unstable) Moriyas who came with a large army intent on war and who was enjoying the pleasures of your company in the wild forest where male elephants with huge tusks soothe the she-elephants and if he hears the sufferings we are undergoing by the loss of the colour of the body and the brilliancy of the eyes, he would not tarry even for a minute though he is to get the wealth of Nanda.

Çaivathü térindici-ṛ-ṛôḷi yalkalu
Mahalü ḷāṇmai achchaṛa-k-kūṛiya
Çorpaḷü tākü menru manjā
Tolkiyan madamayi loḷitta peeli
Vān pôḷ valvi-r-chüṛṛi nôn Çilai
Yavvār vilimbi-ṛ-kamainda novviya-r-
Kanaikura liçaikūm viraiśela-r-kadunganai
Muṛaṇmiku vadukar münnüra môriyar
Tenrisai mādiram münniya varavirku
Viṇṇura vôngiya paniyerum künra-t-
Toṇ kadir-t-tihiri yuruḷiya kuṛaitta
Varai irandavarô Çenranar
Paṛai yaṛain tanna valar namakkoḷittè.*

—281 *Māmūlanār.*

மாசில் வெண்கோட்டண்ணல் யானை
வீளையுட் டப்பிய வருங்கேழ்வயப்புலி
மாநில நெளியக் குத்திப் புகலோடு
காப்பில் வைகுந் தேக்கமில் சோலை
நிரம்பா நீளிடைப் போகி
யரம்போழவ்வளை நிலைநெகிழ்ந் தோரே.

* செய்வது தெரிந்திசிற் றோழியல்கலு
மகலு ளாண்மை யச்சக் கூறிய
சொற்பழுதாகு மென்று மஞ்சா
தொல்கியன் மடமயிலொழித்த பீலி
வான்போழ் வல்லிற்சுற்றி நோன்சிலை
யவ்வார் வீளிம்பிற் கமைந்த நொவ்வியற்
கானகுர லிசைக்கும் விரைசெலற்கடுங்கனை
முரண்மிகு வடுகர் முன்னுற மோரியர்

This is also an ode by the maid to her lady on her sorrow on the departure of her lover. (Translation) Lady ! Be considerate in your actions ; before departing from here, your lord promised to show his valour (and return soon) ; now he has gone to the other side of the mountain which stopped the further running of the chariot wheel—which resembles the splendour of the Sun that rises in the high mountains full of dew and towering to the sky—of the Moriyar with the troublesome Vadukar who are sharp-shooters for their vanguard, whose intention it was to reach the southern sea. He has removed our disreputation like the sounds of a war-drum.

The main idea conveyed by these odes is, the heroes have crossed a certain mountain. If the query why and for what purpose they pass that particular mountain is raised, the reader would be forced to find out an answer from the odes themselves, which are, as usual, complete pieces. Then what is the answer we find in these odes. It is for the purpose of driving out the Moriyar whose intention it was to go to the southern sea ; figuratively, to subjugate the southern kingdoms according to 281. They had for their vanguard people living on the other side of the Venkata hill, who are the next neighbours of the Tamils. The Tamil army was commanded by the chieftain of Mohur (251) though the generalassimo was the Pandiya Nedun-cheliyan-Āriyappadai-kadanda according to *Chilappathikaram*. That they won a victory over their enemy is obvious from No. 69 where it is clearly stated that the hero is engaged in destroying the fortifications of the enemies on the other side of the hill—Venkata. It is pertinent to ask how the Venkata hill was fixed as the limit of the entry of the Moriyar ; it may be pointed out from ode 265 (264 of S. K. Ayyangar, page 89 of the *Beginnings of South Indian History*) where it is expressly stated that the hero crossed the Venkata hill ; the ode graphically describes the people inhabiting that tract.

Niṇam poti viḻuttadi neruppin vaittedu-t-
Tanaṅkaru marapir-r-pé yai pôla-
Viḻarūn rinra vētkai nīṅga-t-
Tukaḷaṛa viḻainda tôpi paruki-k-
Kulā a vilvi-r-kodūnôk-kādavar
Pulā a-ṛ-kaiyar poosa-a-vāya

தென்றிசை மாதிர முன்னிய வாவிற்கு
வின்னுறை வோங்கிய பனியிருங் குன்றத்
தொண்கதிர்த்திகிரி யுருளிய குறைத்த
வரை யிறந்தவரோ சென்றனர்
பறையறைந்தன்னவலர் நமக்கொழித்தே.

Rôrāçu vürüṭṭüm kudumi-k-kurāç lodu
Marā añ çirūr maruṅgi-r-ṟüngüm
Çeṅṅütal yānai vènkatam taḷī
Vemmunai yarüm çura pirandôr.*

That is the northernmost natural boundary of the Tamilakam as is found in the literature of old.

I have to note in passing that I have followed my own MSS. in the readings of the odes concerned. Taking first ode No. 251, the reading of the word *Paṇiyadamaya* is stated to be *Paṇiyamayil* in the *Beginnings of South Indian History* (page 88, note 9) which is also the reading in the printed edition. I am sorry I have to differ from the text supplied by M. V. Swaminatha Ayyar for whom I have profound respect, yet I have to point out that the word *Paṇiyamayil* makes no sense there and the construction too could not be finished. So also the correct reading of *Vaṟaivāyumbar* has been read as *Araivāyümbar*; Pandit A. M. Satagôparāmānüjāchārya of the Govt. College, Kumbakonam, in his learned contribution on Kôśar to the *Sentamil* writes to mean that it may be a place near *Podiya mountain* (Vol. XXIV, p. 23), though the meaning of both the phrases may be taken to be the same in a general sense (*Arai*-Kal). If it is Varai it would point out a mountain and Arai may be taken as a boulder even and would not satisfy the ideas contained in the stanza; *cf.* 281 where it is read as Kuraitta yarai. The language should be so palatable as to be easily pronounced. It is also the case with ode No. 69.

Now taking stanza 251 first for critical study, the Subject or Nominative of the ode is the hero of the poem (Nilainekiḻntôr); the predicate is that he "would not tarry longer" (taṅgalar); though it has no object being an intransitive verb, the questions where and for what purpose may be put and in answer to these questions we get the answer that he has gone beyond the mountain in pursuit of wealth. In passing it may be mentioned that in the classification of the grammar called Aham—poems dealing with the Subjunctive

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* நிணம்பொதி விழுத்தடி நெருப்பின் வைத்தெடுத்
தணங்கரு மரபிற் பேஎய் போல
விளஞாண் றின்ற வேட்கை நீங்கத்
துகளற விளைந்த தோப்பி பருகிக்
குலா அவில்விற் கொடு நோக் காடவர்
புலாஅற் கையர் பூசாஅவாய
ரொராசு வுருட்டுங் குடுமிக் குராசு லொடு
மராஅஞ் சீரூர் மருங்கிற்றூங்குஞ்
செந்நுதல் யானை வேங்கடந் தழீஇ
வெம்முனை யருஞ்சுர பிறந்தோர்.

mood—the lover is permitted to separate himself from the object of his love either for the sake of wealth or learning. All the odes under discussion refer to the separation on account of wealth. In days of yore it was the habit of heroes to go on expedition for amassing wealth which would be presented to the intended. We know from many other sources that the sons of Tamilakam were all brave warriors and they were brought up so by their mothers even from their infancy. And internecine quarrels seem to be a pastime with them. And so these odes also could not be an exception to this fact. Hence the particular hero's object could not be other than warfare under some one's banner. What is the purpose for which he went to the other side of the mountain is the question. That he went there for a fight has to be inferred in this ode. But 69 is more pointed on the point. We read there that the hero would bring precious ornaments (*Nankalan tarūum*) after demolishing the well-guarded fortifications. 281 also gives room for the inference that the object was to fight the enemies of Tamilakam, that is, the Moriyars, who had the Vadukars for their vanguard. Aham 31 stands as a beacon-light in this matter.* This ode also is by Māmūlanār and the poet here says that the hero has gone beyond many mountains where our language is unknown and which place is guarded by the three Tamil kings. The commentator on the above also explicitly says that the hero went far away crossing many mountains.

Take again stanza 69. There also the poet puts into the mouth of the maid the following:—Though forgetting the pleasures he enjoyed with you

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* நெருப்பெனச் சிவந்த வுருப்பவிர் மண்டிலம்
புலங்கடை மடங்கத் தெறுதலின் ஞொள்கி
நிலம்புடை பெயர்வதன்று கொலின்றென
மன்னுயிர் மடிந்த மழைமாறமையத்
திலையில் வேரங்கி நிலையுயர் யாஅத்து
மேற்கவட் டிருந்த பார்ப்பினங் கட்குக்
கல்லுடைக் குறும்பின் வயவர் வில்லிட
நிணவரிக் குறைந்த நிறத்தவதர் தொறுங்
கணவிர மாலை யிடூஉக் கழிந்தன்ன
புண்ணுமிழ் குருதி பரிப்பக்கிடந்தோர்
கண்ணுமிழ் கழுகின்கான நீந்திச்
சென்ற ரென்பிலர் தோழி வென்றியொடு
வில்லலத்துண்ணும் வல்லான் வாழ்க்கைத்
தமிழ்கெழ மூவர் காத்தும்
மொழிபெயர் தேஎத்த பன்மலை யிறந்தே

(ll. 19, 20) has crossed to the other side of the mountain (*Varai erandakan-ranarāyinum*, l. 12). Which mountain did he cross or pass over? Answer to this query should be that mountain that stopped the further march of the rolling of the wheels of the car of the Mauryar. Incidentally he describes the place on the other side as a barren tract where the stags and hinds eat the round, sour goose-berries for their food (ll. 7-8).

No. 281 is more direct and pointed. Here the Maurya's intention is clearly stated and that their place of destination is the southernmost point of the continent; but they were stopped by the mountain. And our hero has gone just beyond that mountain which stopped the further running of the chariot wheel.

One more point has to be conceded rather than considered which is that any poet, anywhere it may be, would not dare to sing about the defects or the losses of his patron, but on the other hand would try to exaggerate even a small thing into a big one. But here poets vie with one another in eulogizing the brave deeds of their patrons; thereby we come to know of the defects of the enemy. Now here also it ought to be the case. And moreover, if it is the defeat of the chiefs of the Tamil land, then the compiler of these odes would not have selected such poems, and would be very zealous and careful in his selections. Viewed in these lights one would be able to understand that these odes also bear the same kind of interpretation.

Now coming to the Kosar mentioned in ode 254 Prof. Dr. Krishnasamy Ayyangar was of opinion that they were the advance guard of the Mauryas, and as such administered a crushing defeat upon their enemies near Podiyil Hill. Mr. K. G. Sesha Ayyar has ably refuted the point and said that it should be rejected as a myth.* Pandit A. M. S. Chārya of the Kumbakonam College in an erudite contribution to the *Sentamil* (Vol. XXIV, pp. 33 to 48) divides the Kosars into three categories as (1) Warrior people of Tulunad, (2) Men of Royal Family, and (3) Civil Judges. And he opines that the Kosars referred to in Aham 251 belong to the first category,

cf. மெயம் மலிபெரும்பூட் செம்மற் கோசர் 15;
இறம்பு இடம் படுத்த வடிவுடை முகத்தர் கருங்கட் கோசர் 90;
கடலாடு மகளிர் கொய்த ஞாழலும் கழனி யுழவர்குற்ற குவளையும்,
கடிமிளைப்புறவிற் பூக்த முல்லையொடு பல்லிளங் கோசர் 216;
காப்புக் கைநிறுத்த பல்வேற் கோசர் 113;
நன்னன் நறுமா கொன்று நாட்டிற் போக்கிய ஒன்று மொழிக்கோசர்குறு 73;
வளங்கெழு கோசர் விளங்கு படை நாறி 205.

Why all the previous writers hold that 'a passage was cut through the mountain passes for the chariots of the invaders' (Moriar Punaiter nemi

* *Q.J.M.S.*, Vol. XIV, p. 277.

yuruliya kuraitta) is not explicable. Perhaps they rely on a similar passage in Puram 175 where the Scholiast says that the Himalayas was cut for the passage of the cars of a certain king who ruled over the world (Venri vèlai yudaiya visumbai-t-tôyüm nediya kudaiyinaiyum kodi yaṉinda tèrinaiyüm yudaiya nilamuḻü thumāṇda vendarathu tiṉṉiya ār sooḻntha sakkaram yiyangudarku-k-kuṟaikkappaṭṭa veḷḷi málaikku appālākiya ulakattirku-k-kaliyum idai kaḻi yākiya aṟṟai vāy).* He also gives a variant and notes that there are men who may take it as Chakravāḻam. This scholia has been regarded by some at least, if not all, as not correct in this particular instance since he misunderstands Moriyar with Oriar. Granting that the Scholiast of *Puranānūru* has misunderstood in this particular place, are we not entitled to hold another meaning wherever it is possible ? And so it comes to this. A particular mountain is spoken of here. The word *varai* is preceded by the word *kuraitta* (cut). It literally means cutting and its meaning is clearly expressed when it is preceded by the word *uruliya* (rolling). When the two words *uruliya kuraitta* are put together it would mean the rolling of the wheels were cut, that is to say, the mountain had stopped the rolling of the cars. Of course it is accepted on all hands that the cars belong to the Moriyas. So, instead of going to a far-fetched and senseless meaning we may be justified in holding that the warriors went above the Venkata—the hill that stopped the further rolling of the cars of the Moriyas.

External evidences are not wanting to show that all the Tamil .kingdoms were independent of foreign power. If really Bindusāra as the Viceroy-prince or the king had subjugated the Tamilakam, then Aśoka would not have left it unmolested and sent embassies. The Tamil bards also would have sung the defeat of their own forces at least in an indirect way. No doubt they would have done so had the Moriyars been their patrons or Tamilians. Unfortunately they were neither. Nor there is a single stanza or ode relating to any king of the Moriya line.

From the long survey of the odes concerned and other poems it may be concluded as certain that the Moriyas were not allowed to enter Tamilakam and the last point they reached was Venkata hill. The battle took place on the other side of the Venkata hill between the combined armies of Çéra Chôla and Pāndiya under the general command of Pandiyan Neduncheliyan who was ably assisted by the Mohur chieftain who took the field and the Moriyas assisted by Vadukars or Telugus.

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* வென்றி வேலை யுடைய விசும்பைத்தோயும் நெடிய குடையினையும் கொடியணிந்த தெரினையு முடைய நீலமுழுதுமாண்ட வேந்தரது திண்ணிய ஆர்சூழ்ந்த சக்கரமியங்குதற்குக் குறைக்கப் பட்ட வெள்ளிமலைக்கு அப்பாலாகிய உலத்திற்குக் கழியும் இடைகழியாகிய அற்றைவாய்.

STUDIES IN BIRD-MYTHS, No. XVIII.—ON AN ÆTIOLOGICAL MYTH ABOUT THE TURTLE DOVE AND OTHER SPECIES OF DOVES.

By Prof. Sarat Chandra Mitra, M.A., B.L.

The Turtle Dove (*Turtur Communis*) is the emblem of conjugal fidelity. A few stragglers of this species of dove have been found in summer in Quetta and Gilgit. Had it been found in plentiful numbers throughout the peninsula of India, it would have been very well known to the people of the Indian countryside. In that case, I should have come to the conclusion that the Dove referred to in the undermentioned ætiological myth is the Turtle Dove beyond the shadow of a doubt.

The Turtle Dove is well known in England for the constancy of love which exists between the males and females of this species, as will appear from the following stanza from Byron's *The Bride of Abydos*, Canto I, Stanza 1 :—

"Know ye the land where the cypress and myrtle
Are emblems of deeds that are done in their clime ;
Where the rage of vulture, *the love of the turtle*,
Now melt into sorrow, now madden to crime."

In the aforementioned stanza, "*the love of the turtle*" is specifically mentioned.

Oliver Goldsmith has also referred to the faithful and constant love of the Turtle Doves in the following lines of his "Edwin and Angelina" :—

"And love is still an emptier ground,
The modern fair one's jest ;
On earth unseen, *or only found*
To *warm the turtle's nest*."

But there are three other species of doves which are very commonly found in the countryside almost throughout the peninsula of India. There are the Spotted Dove [(*Turtur Suratensis*)—Bengali *Chaval Ghughu* or *Telia Ghugu*] ; the Little Brown Dove (*Turtur Cambayensis*) ; and the Indian Ring-Dove [(*Turtur risorius*)—Bengali *Kalhak*, *Kahalaki* and *Pānk Ghughu*]. I am inclined to think that, as these three species of doves are very common throughout India and are, therefore, very familiar to the Indian people of the countryside, the dove referred to in the undermentioned ætiological myth is a member of any one of the aforementioned species.

Dr. W. T. Blanford, F.R.S., who is the author of Vol. IV (Birds) of *The Fauna of British India* Series wherein the aforementioned three species of

doves (*Turtur Suratensis, T. Cambayensis* and *T. risorius*) have been described, does not specifically mention that these doves are remarkable for their conjugal fidelity. But I am still of opinion that this constancy of love between the males and the females is a characteristic trait of all the species of doves.

This being so, the uncultured people of the Indian countryside must have noticed the aforementioned peculiarity in the character of the doves, namely, their steadfast love between the males and the females. They were struck by this habit; and, finding it to be uncommon among other species of birds, have fabricated the undermentioned ætiological myth to account for the origin of this peculiar trait in the character of the doves:—

In very ancient times, Chandraketu was the King of the Malayan Islands and loved his Queen Chitralekhā to distraction. She, in her turn also, almost adored her husband and followed him like a shadow.

Chandraketu had another kingdom which was named Maradwipa and which was situated in the midst of the sea at a little distance from the Malayan Islands. One day, news was brought to Chandraketu that the King of Madradesha had invaded Maradwipa. On hearing this news, Chandraketu fitted out a large fleet of ships, gathered a large army of soldiers and camp-followers, and, after bidding a touching farewell to Chitralekhā, embarked in the ships and set sail for Maradwipa.

Shortly after Chandraketu had set sail, a terrific storm burst over the sea. Being unable to withstand the fury of the storm, the king's ship was capsized, he struggled for a long time with the waves; but, ultimately losing his strength, became faint and unconscious and sank beneath the waves.

One night, Rānī Chitralekhā dreamt a dream in which she saw that her husband had been shipwrecked in the sea and that he was battling with the waves of the tempestuous sea. This dream very much perturbed her mind; and, as soon as the day dawned, she went to the sea-beach. Shortly after her arrival there, the corpse of her drowned husband Rājā Chandraketu was thrown by the waves upon the seashore. She became mad with grief on seeing her husband's corpse and threw herself into the sea. The gods in heaven were filled with pity at the sight of this touching exhibition of conjugal fidelity and metamorphosed the bodies of King Chandraketu and Rānī Chitralekhā into two doves the most noteworthy trait of whose character is the constancy of love between the males and the females, and the habit that they never leave each other's company.*

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* *Vide* the article entitled: "*Ghughu Pakhira Katha*" or "*The Story of the Dove*" in the Bengali Monthly Magazine, *Khoka—Khuku* (Boys and Girls) (published from No. 108, Narikeldurga Main Road, Calcutta) for 1330 B.S., (1923—1924 A.D.) pages 264—266.

The aforementioned ætiological myth bears a striking similarity to the Greek story connected with the metamorphosis of Alcyone or Halcyone, daughter of Æolus. She had married Ceyx who was drowned while he was going to consult the Oracle. The gods informed her, in a dream, of her husband's tragic death. When, on the next morning, she discovered her husband's body lying on the sea-beach, she was stricken with violent grief and cast herself into the sea. Thereafter she, with her husband, was metamorphosed into birds of the same name, that is to say, Halcyons who keep the waters calm and undisturbed when they build their nests on the surface of the sea and sit on them.

STUDIES IN BIRD-MYTHS, No. XIX—ON AN ÆTIOLOGICAL MYTH ABOUT THE BROWN FISH-OWL.

By Prof. Sarat Chandra Mitra, M.A., B.L.

The Brown Fish-Owl (*Ketupa zeylonensis*) is a bird commonly found throughout India, Ceylon and Burma. It frequents well-forested tracts near the sea, rivers and large bodies of waters.

This Indian Fish-Owl generally spends the day in a thickly-foliaged tree and, after sundown, emerges from its hiding-places and flies to the margins of bodies of water for the purpose of seeking its food. It feeds upon fish and crabs, but also occasionally kills birds and small mammals. It utters a loud dismal cry of "*haw, haw, haw, ho*". It breeds during the period commencing from December to March and lays two white oval eggs in the hollows of trees and in the deserted nests of a fishing-eagle or, sometimes, on the ledges of rocks. In this last mentioned case, a small nest is made of sticks.

Dr. W. T. Blanford, F.R.S., at pages 281-282 of Vol. III of the *Birds of India* (in *The Fauna of India* Series) gives the Bengali name of this bird as *Bhutum*. But the Bengali zoologist Rāi Bahādur Rām Brāhma Sanyāl, C.M.Z.S., at page 279 of his *Handbook of the Management of Animals in Captivity in Lower Bengal*, mentions the Bengali name of this bird as *Hatam Penchā*.

Then again, Dr. W. T. Blanford, F.R.S., at pages 264-266 of the third volume of *The Fauna of India—Birds*, also mentions that the Barn-Owl or the Screech-Owl (*Strix flammea*) is called in Bengali *Bhutum Pechā*.

The undermentioned ætiological myth is narrated in many parts of Bengal, which accounts for the evolution of this bird:—

Once upon a time, there lived a *Baniyā* (or trader) and his wife. As the latter had not gone to her parental home for a long time, she made up her mind to pay a visit to her parents as soon as practicable. So, one day in the cold month of *Pausha* (December-January), she, escorted by her husband, started for her paternal home which was in a village about five *kroses* off. Thus fatigued by the long tramp over ten miles of road, and suffering from hunger and cold, they arrived at their destination at a late hour of the night. After her arrival, the *Baniyā's* wife went inside the house, and, meeting with her overjoyed kinsmen, was engrossed in lively conversation with the latter. She left her husband in the outer courtyard of the house, where he sat shivering in the cold. His wife quite forgot him and, after taking her

evening meal with the other members of the family, fell fast asleep. All through the cold night of *Pausha*, the poor *Baniyā* sat shivering in the cold and suffering from the pangs of hunger. At last, he died of cold and hunger and was transformed into the Brown Fish-Owl (*Ketupa zeylonensis*). When, in the morning, the *Baniyā's* wife remembered her husband, she and her mother went to the outer courtyard of the house to look for him. There they found that the *Baniyā* (or trader) had been metamorphosed into the Brown Fish-Owl. Seeing them, the bird cried out: "*Huṅ uttam*" [(हुं उत्तम) or "*Well, all this is very blameworthy*]. Being very much sorrow-stricken on seeing this distressing sight, the *Baniyā's* wife also died and was metamorphosed into a Brown Fish-Owl. Both of them then flew away.

When all the villagers came to see them, the male Brown Fish-Owl kept crying out "*Huṅ uttam, Huṅ uttam*" (or "*Well, all this is very blameworthy*"). From this cry of *Huṅ uttam*, the birds came to be known by the name of "*Hu tum*".*

The name *Bhutum*, which is mentioned by Dr. W. T. Blanford as being the Bengali appellation of both the Brown Fish-Owl (*Ketupa zeylonensis*) and the Screech-Owl or Brown-Owl (*Strix flammea*) may be derived from the Bengali word "*Bhūt*" which means "*a ghost*". Now this name is quite in accordance with the superstitious belief entertained by the Bengali womenfolk about these owls. They look upon these birds as "*the messengers of death*" or as ghosts under the guise of birds. Therefore, whenever a Bengali woman hears the hooting and the weird and dismal call-note of the aforementioned two owls, she says: "Go away; be off; else I shall cut off your nose with a fish-knife." These words are uttered for the purpose of scaring away these supposed ghosts which are believed to be incarnate in the owls.

The name *Hutum*, which is mentioned by Rāi Bahādur Rām Brāhma Sanyāl as being the Bengali appellation of the Brown Fish-Owl, is clearly a contraction of the words "*Huṅ uttam*" which were uttered by the deceased *Baniyā* after he had been metamorphosed into the avian form.

As the *Baniyā* spent the whole of the bitterly cold night of *Pausha* in the outer courtyard of his father-in-law's house, the primitive myth-maker of Bengal has transferred him into the Brown Fish-Owl which is a bird of pre-eminently nocturnal habits and lives and moves and has his being in the darkness of the night.

It will not be out of place to mention here that, not only in Bengal, in India, but also in many other countries of the world, the owl is looked upon as a bird of ill-omen and that its dismal cry is heard with superstitious terror

* For a fuller version of this ætiological myth, see the collection of Bengali nursery stories entitled: "*Ājgubi Janma-kathā*" (or "*Wonderful Birth-Stories*") by Umesh Chandra Nag, Calcutta: Published by the Sishir Publishing House. 1329 B.S., pages 19—26.

by the people thereof. The Bedouins of Tunisia in North Africa also regard this bird with great horror and believe that its cry forebodes death. They relate the undermentioned myth accounting for the evolution of this bird of evil repute :—

" The cry of the owl—in every land a bird of ill-omen—is listened to with a panic shudder by every Bedouin mother.

The owl, they say, is the spirit of a horrible old woman who beat her son to death because he forgot to fetch her a sieve. And in consequence she flies by night in the desert, and should she alight on a *Gourbi* (skin tent of a nomad) the child within is doomed to certain death. Wherefore on every *Gourbi* in the south you may see a sieve or an upturned saucepan with holes pierced in it, placed there that the sight may afflict the owl with repentance and save the child ! "*

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* *Vide* the article entitled " *Where Perfection is Unlucky. Strange Superstitions in the Land of the Arabs.*" Published in the Calcutta Daily, *Englishman*, of Monday, the 7th June, 1926.

REVIEWS.

The Historical Geography of Early Japan.

BY MR. CARL WHITING BISHOP,

The Smithsonian Institution, Washington. 1926.

THIS is a paper read at the joint meeting of the Association of American Geographers and the American Geographical Society and reprinted from the Geographical Review for January 1923. The object of the paper is to investigate into and arrive at a right comprehension of the foundation upon which rests the national life of Japan. The first contemporary accounts of the Japanese people are derived 'without exception' from Chinese sources. The Japanese became wholly an island people about the seventh century A.D., before which they were in close touch with the various civilized communities of the continent. The ancestors of the existing Ainu of Yezo (Hokkaido) were the earliest occupants of the Island who may have lived undisturbed for over several thousand years. Far back in the first millennium B.C., various branches of the great Mongoloid stock from eastern Siberia to the South Chinese littoral with probably in the latter case a slight Negrito admixture started invading the island. The result of the minglings in varying proportions forms the great bulk of the Japanese population. With the foregoing as the theme, the author enters upon a detailed study of the Ancestral Ainu and the Early Mongoloid Invasions of the Island.

The ancestral Ainu were the first to arrive on the island though in different batches separated by long intervals of time. These were divided into several sub-types and the language of this ancient race was essentially the same spoken at present by its survivors, as may be evidenced by the fact that the names of most places can only be explained in terms of Ainu speech. The origin of these people is still very vague, being differently stated. This much may be said as certain: that the Ainu represent an extremely ancient generalized type from which more than one of the wavy haired and heavily bearded races of Europe and Southern Asia have been specialized. The culture, and social, political and military organization are discussed. Then we have an account of the Mongoloids in respect of their original home, their invasion of the island of Japan and their civilization. The culture areas in the Korean peninsula, the introduction of bronze and iron into Japan and the introduction of agriculture are all dealt with exhaustively. The Chinese records disclose that there was a great and long turmoil on the island about the close of the second century which ended with the rise of a powerful queen (almost certainly the "Empress" Jingô Kôgô of Japanese legend) who extended her authority over the various tribes of the Wo. She had no husband but a brother who assisted her in the government. The author apprehends that this might have been an instance of royal brother-and-sister marriage custom which then existed in Korea also.

It is likely that the female rulers of the Wo derived their powers from the belief that they were the representatives of the Sun Goddess. At about the same period there flourished on the main island an independent kingdom. The people of Konu, although of the same race as the Wo, were in hostility with the latter and were ruled over by a king, who was in diplomatic correspondence with the Chinese in Korea. Mr. Bishop infers rightly that there was an invasion from Korea about the latter half of the second century. The powers of rulership of the Wo gradually changed from females to males resulting in the Historical Mikados. During this period also came into Japan from China Buddhism and the art of writing. The occupation of the mainland was gradually extended.

The various internal conquests and the final conquest of the Ainu, who gave trouble until recent years, are touched upon. But for the admixture of the Ainu, Japan would have been a second Korea—"in other words, a feeble imitation of China, without either the will or the force to think and act for herself." The pamphlet is profusely illustrated with the types of the Ainu, their dress and occupation. It is hardly necessary to say that the subject has been masterfully dealt with and does, indeed, high credit to its author.

M. V.

The Earliest Monuments of the Pandya Country and their Inscriptions.

By Mr. K. V. Subrahmanya Ayyar, B.A., M.R.A.S.

(Reprint from the Proceedings of the Third Oriental Conference, Madras.)

The object of the author in writing this paper is, as he says, to furnish a short description of the stone couches and Brahmi inscriptions found scattered in the vicinity of the mountain cavern known as the Pañcapāṇḍavamalai in the extreme south of India, which form the earliest monuments of the Pandya country; and then to read and interpret the epigraphs, ascertaining the values of certain odd symbols employed in them and the language used: and in so doing to suggest their character and early use.

The Brahmi inscriptions in the cavern discovered in 1906 at Marugāltalai in the Tinnevelly District are the earliest lithic records of the Tamil country and the most ancient lithic monuments of the Tamil race, if the inscriptions and the beds are synchronous. The inscriptions are also important as they may throw valuable light on the origin and development of the Tamil and Vaṭṭeluttu alphabets. The employment of Pali in these inscriptions show that it was understood in the Pandya country even at that early date. The late Mr. Venkayya believed these monuments to be Buddhistic. There are no Brahmi inscriptions in the cavern at Vīrasikhāmaṇi. The biggest of the caves is the Varicciyūr cave. There are Brahmi inscriptions engraved on the pillow portion of the beds themselves in the Mēṭṭupaṭṭi cave. These establish beyond doubt the synchronism of the beds and the formation of the cave and ar', therefore, of great importance.

In 1908, some more caves were discovered in the Madura district. The Kunnakkudi cavern contains Brahmi inscriptions. The existence of a rock-cut well in it is a peculiarity. This water source takes the place of the natural springs of other caverns. The author says he accidentally discovered Ammanāmalai cave. Here was found an excellent ancient Jaina hermitage with huge Jain images and well preserved Vaṭṭeluttu inscriptions registering the names of the Jaina preceptors and disciples who presided there in the 8th century A.D. and who are stated to have come from the village Kurandi which the author himself has identified with a place of the same name in Travancore.

Rao Bahadur Mr. H. Krishna Sastri visited Kongarpuliyangulam and examined the caverns there. We are then told that though these caves had been resorted to by Brahmin ascetics, Buddhist monks and Jain priests alike, there are strong evidences to show that they were the abodes of Buddhist monks to the seclusion of other sects. This has been fully argued and convincing proofs are given. The Pandya caverns resemble each other and agree with the Buddhist monuments found in Ceylon. Mr. Ayyar then ascribes the characters employed in the inscriptions with one exception, to the third century B.C. and gives various evidences to support the statement.

As regards the character of these inscriptions, it is a pity that scholars have not paid the attention it requires in spite of Mr. Krishna Sastri's repeated appeals. We ought certainly to be grateful to Mr. Ayyar for his tabulated statement in this connection. The tabulation strongly suggests that the language of the inscriptions may be Tamil. The object of most of the epigraphs is to register the names of the persons who caused the monuments to be made. After these general remarks, the author makes a survey of each of the inscriptions. Mr. Ayyar's work in the field of epigraphy is noteworthy.

M. V.

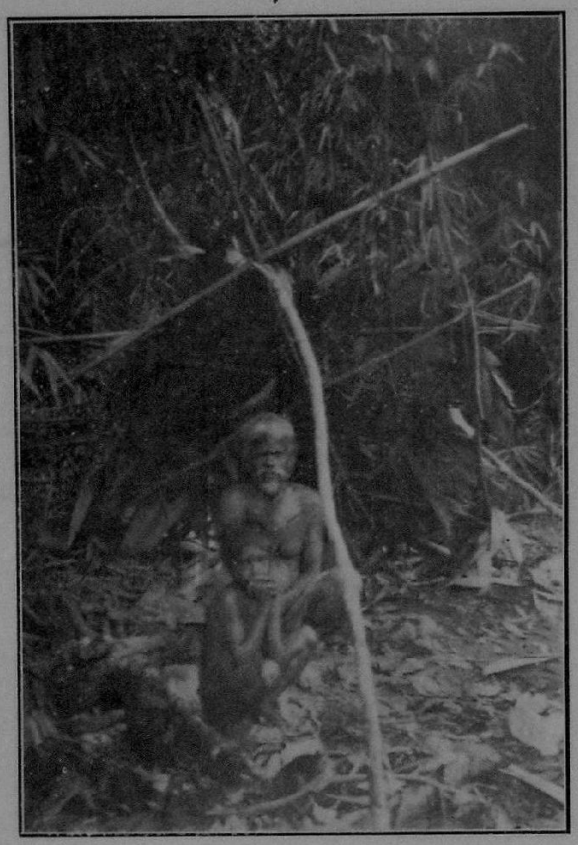
ERRATUM.

In line 22, page 13 of this Journal, Vol. XVIII—No. 1, in the speech made by the Chairman at the Seventeenth Annual General Meeting of the Society, please read "Jews" for "Jains".

List of Subscriptions and Donations received during the Quarter ending 30th September, 1927.

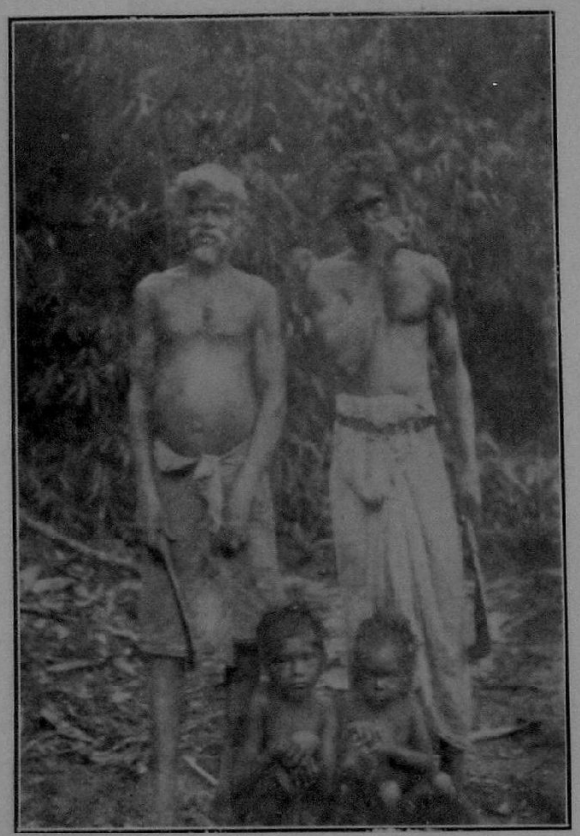
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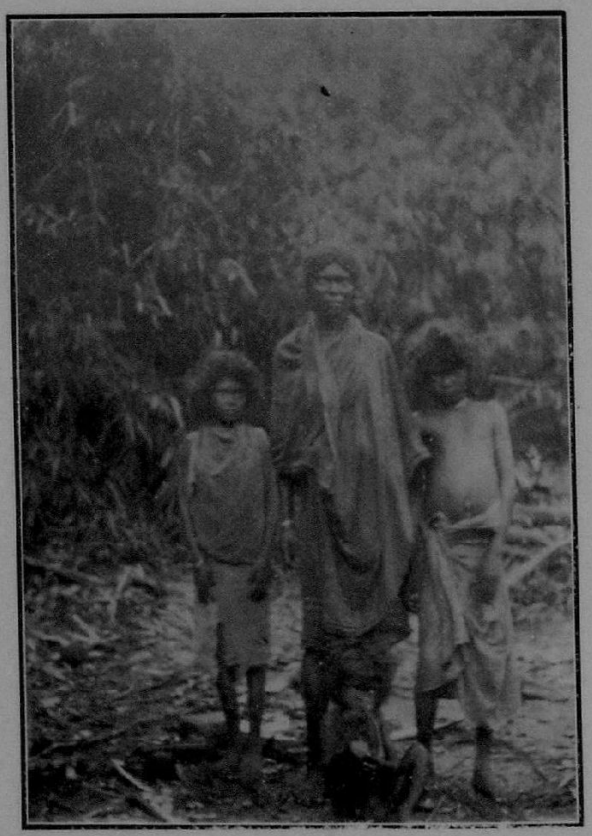
The Hill-Pandaram

(Resting in his home by the side of fire)



The Hill-Pandaram

(Male group)



The Hill-Pandaram

(Female group)

Books received during the Quarter ending 30th September 1927.

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Government of India Central Publication Branch.—

Guide to the Qutb., Delhi, by J. A. Page.

The Smithsonian Institution, Washington.—

1. The Classification and Distribution of the Pit River Indian Tribes of California, by C. Hart Merriam.
2. The Excavations of the Sanctuary of Tanit at Carthage, by Byron Khun De Prorok.
3. The Historical Geography of Early Japan, by Carl Whiting Bishop.

University of Madras.—

1. The Stone Age of India, by Sir S. Subrahmanya Ayyar (Lecture delivered on December 10, 1925.)
2. The Calendar for 1927—28, Vol. 1.

University of Calcutta.—

1. The Journal of the Department of Letters, Vol. XV.
2. Do. do. do. Vol. XVI.

The Author.—

1. Dates of Patanjali and Vatsayana, by H. A. Shah.
2. Jainism (A lecture), by C. S. Megha Kumar.

The Indian Music Publishing House, Madras.—

The Flute—A Study, by P. Sambamoorthy.

The Government of Travancore.—

1. Sri Mulam Malayalam Series, No. XVIII : Bheeshmopadesham, Hamsapattu, edited by Kolatteri Sankara Menon.
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3. Sri Vanchi Setu Lakshmi Series, No. 7 : Aryabhateeyam, edited by Kolatteri Sankara Menon.

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The Mysore Season and Crop Report for 1925—26.

Superintendent, Government Museum, Madras.—

Text of Passages—Gramophone Records of Languages.

EXCHANGES.

Editors of:—

1. "HINDUSTAN REVIEW," *P.O. Box No. 2139, Calcutta.*
2. "INDIAN ANTIQUARY," *British India Press, Mazagaon, Bombay.*
3. "CEYLON ANTIQUARY," *The "Times of Ceylon", Colombo.*
4. "MODERN REVIEW," *91, Upper Circular Road, Calcutta.*
5. "THE HINDU MESSAGE," *Srirangam.*
6. "WEDNESDAY REVIEW," *Teppakulam, Trichinopoly.*
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8. "THE EASTERN BUDDHIST," *39, One Machi, Koyama, (Japan).*
9. "THE CHRISTIAN COLLEGE MAGAZINE," *Madras.*
10. "THE EDUCATIONAL REVIEW," *Mount Road, Madras.*
11. "THE VEDIC MAGAZINE," *Gurudatta Bhavan, Lahore.*
12. "ZEITSCHRIFT DER DEUTSCHEN MORGENLANDISCHEN GESELLSCHAFT," *Halle, Germany.*
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17. "MAN," *The Royal Anthropological Institute, London.*
18. "DJAWA," *Kanarillaan, 13, te Weltevreden, Java.*
19. "MAN IN INDIA," *Ranchi, B.N.Ry. (India).*
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22. "THE JAIN GAZETTE," *Parish Venkatachala Iyer Street, George Town, Madras.*
23. "THE INDIAN SOCIAL REFORMER," *Navsari Chambers, Outram Road, (opposite Hornby Road), Fort, Bombay.*
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26. "VISHVA-BHARATHI," *10, Cornwallis Street, Calcutta.*
27. "NAVASHAKTI," *Dharwar.*
28. "THE SHRINE OF WISDOM," *The Hermetic Truth Society, Lincoln House, Acacia Road, Acton, London (21-3).*
29. "WELFARE," *91, Upper Circular Road, Calcutta.*
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31. "BUDDHIST ANNUAL OF CEYLON," *Colombo.*
32. "KARNATAKA SAHITYA PARISHATPATRIKA," *Bangalore.*
33. "EPIGRAPHIA INDO-MOSLEMICA," *Simla.*

34. "YOGAMIMAMSA," *Kunjavana, Lonavla, Bombay.*
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36. "THE MYSORE GAZETTE," *Librarian, Public Offices, Bangalore.*
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55. "THE INDIAN THINKER," *Anantha Rama Varma Press, Fort, Trivandrum.*

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