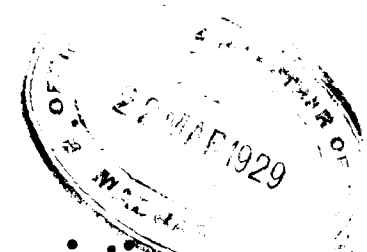


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**The Buckingham Canal : A Survey—Historical,
Geographical and Economic.**

By

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Introduction. The Buckingham Canal is one of the chief inland waterways of the Madras Presidency. It is connected with the canals in the deltas of the Kistna and the Godavari. This salt water navigation canal of 262 miles extends from Pedda Gangam (15°39' N. Lat. 80°15' E. Long.) to Mercanum lake in the South Arcot District 12°12' N. Lat. 79°57' E. Long.) At the former place the canal communicates with the fresh water delta canal systems which extend up to Cocanada. The canal runs throughout its entire length to within three miles of the East Coast and communicates with all the back waters, varying in size from Pulicat lake with an area of 37 square miles to very small backwaters, and with the mouths of rivers of several sizes like Pennar and Palar to small rivulets, and traversing the districts of Guntur, Nellore, Madras, Chingleput and South Arcot.

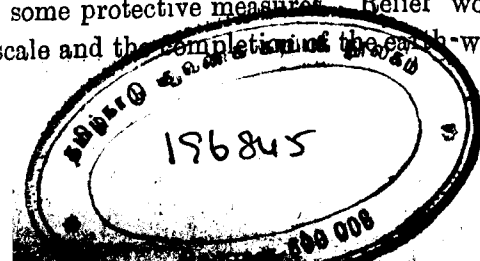
History. The history of the canal dates as far back as 1806. Originally the canal was named after the private individual to whose exertions it owed its origin. Mr. Cochrane excavated a section through shallow land and then available backwaters for a length of eleven miles from St. Mary's bridge (now Hutton Bridge). Gradually additions were made ; and Pulicat lake was the northern extremity of the canal by 1837. In the latter year this private property was taken over by the Madras Government who then as now had to realise

that its serviceable nature as a waterway would depend on its being kept in order. When it came into the hands of Government the canal was in a bad state of maintenance, being much silted up and being fit only for very small craft of 2 to 3 tons. This state of affairs continued for about fifteen years, after which plans for extension northwards were adopted, and the extensive improvements of the then existing canal were earnestly proposed. The first recorded improvement due to these plans was the construction of the Shadayankuppam lock seven miles north of Madras. This lock, as will be shown later, was not any part of the changed engineering design in the construction of the canal, but was built primarily with the idea of keeping water in the canal and in the Cooum sufficiently high " so that the sanitary condition of the city might not become impaired on account of the offensive sewage laden waters of the Cooum." Forty years later this lock was demolished and a new one was built near Ennore on the 8th mile. The northern limit of the canal was Durgarazapatam in 1857, and the canal was known as the East Coast Canal till half a century ago.

Apart from the plans for the improvement of the East Coast Canal there was a new idea of having a canal from Adayar river to the south of Madras running further south. This section was worked on seriously from 1852 and rapid progress was made, so that in the year 1857 the canal extended as far south as Sadras, at the 41st mile of the south canal and the junction of Ksheeranadi (Palar) with the sea. The principal of construction of the canal was, of course, the same as the one followed in the construction of the north canal, namely, the joining of the backwaters and the cutting up of shallow land near the sea. Between 1857 and 1877 the northern section of the canal had been extended from Durgarazapatnam to Krishnapatnam, and thus by a short length of road Nellore was connected with the metropolis. In the latter year there was an impetus to work up this canal system. The notable famine of the Dathu year of the Tamil calendar corresponding to the year 1876-77 and the after-math of the famine necessitated Government to take on hand some protective measures. Relief works were opened on a large scale and the completion of the earth-work of the canal was

East Coast
Canal.

Extension of
Northern Canal.



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decided on as one of the principle items of relief. The work of the canal was pushed up so energetically that the Pennaru river (114 miles from Madras) saw the northern extremity of the canal. The cutting of the canal in 1878 is phenomenal; for, it was in that year that it reached its existing northern limit at Pedda Gangam. This length of 196 miles from St. Mary's bridge to Pedda Gangam has been known as the northern canal.

Simultaneously with the completion of the north canal the Government undertook to connect the canal systems between the rivers Cooum and Adayar. The connecting link known as the junction canal was completed in 1877. (Map. A.)

The southern section of the canal was extended up to the backwaters of the Mercaunem lake in 1882; and this length of 60 miles was connected by means of the junction canal to the northern section of 196 miles, thus connecting Pedda Gangam with Mercaunem.

The three sections, the north canal, the south canal, and the junction canal were vigorously worked during the governorship of His Grace the Duke of Buckingham and Chandos and has been named after him the Buckingham Canal.

Let us proceed to note the canal design. As it is a technical subject, it will only be proper to be brief and adhere to the words of Mr. Russel, the historian of the Buckingham canal project. The engineering history of the canal falls into three periods and illustrates the gradual evolution of the final design, the characteristic Anglo-saxon way of blundering through successfully.

The first of the three periods extends up to the year 1883. The original idea was to dig a canal close to the sea running through backwaters, depressions and low-lying lands without any regulating works whatsoever for regulating the water-level in the channel. Thus the canal was left open to floods from the numerous rivers at whose estuary it was cut to tidal flow and to free communication to backwaters. It was the expectation of the framers of this plan that the bed of the canal would be acted upon by the flux and reflux of the tide

Engineering
History.

Open canal up
to 1883.

and would be scoured by the passage of the land drainage to the sea. During this period it was that the lock at Shadayankuppam was constructed ; but it was not part of the canal design, but was built solely in the interest of the sanitation of the metropolis.

The inherent defects of an unregulated supply for the canal and the experiences of the severe cyclones in the east coast in 1879 rendered the canal subject to damage from high tides, inundation due to storm, waves and too much of silting.

A modified design was, therefore, proposed in 1882. The second period covers from 1883 to 1891. This design provided (1) for throwing back the canal wherever it had been too near the sea and for removing it out of the backwater, (2) for embanking it on the eastern side to exclude backwater floods and turn of river spills, (3) for temporarily shutting off river and backwater floods by means of flood gates or single gates facing towards the river and designed to be readily closed on the approach of land floods ; and (4) for constructing on the east embankment of the canal high masonry sluiced outlets intended to act as sluices supplementary to flood gates.

In accordance with this scheme several diversions of the canal line were carried out and some flood gates were constructed. It was during this period that a single lock was constructed on the north bank of the Adayar river for the special reason connected with the sanitation of the city of Madras.

The result even of this policy was not successful in maintaining the canal in a proper state of efficiency and usefulness ; for, the flood gates had done only little to decrease the heavy silting of the canal-bed which was originally attributed to the entrance of river floods. It was recognised that in the hot weather months the canal suffered from a chronic low surface water level. The flood gates caused delays to traffic when once they had been closed.

The final period commenced in 1893 and sought to remedy the defects that were brought to light by experience in working with the system of flood gates. It was experienced that additional provision was necessary for passing cross drainage out of the canal. So, some improvements were suggested to allow for a locked-in canal with provision for

Flood-gates
1883-1891

Construction of
Locks from 1893
onwards.

passing upland drainage so as to retain a surface water-level to enable craft to sail along and to prevent the constant silting up by daily tidal flow up and down the canal ; and thus to approximate the canal to a still-water canal a number of locks were built.

Though the association of ideas connected with the Buckingham Canal may not be very pleasant to residents of Madras, it will have to be noted that the canal does not give out a bad odour outside the limits of the city. If the improvement of the canal now taken up and the flushing out of the Cooum should be an accomplished fact, citizens of Madras will not have any cause for dissatisfaction at the way in which the canal region serves as fostering home of infectious diseases of various kinds.

The physical features of the Buckingham Canal Region.

The canal runs through a flat sandy country throughout its entire length. Geologists tell us that the east coast has been shifting slowly into the sea during the different geological ages and that the present coast has been gradually formed out of blown sand. The geological history of this region may be summed up in the words of Mr. H. Narayana Rao as " successive stages in the process of outward march of the sea-coast and the consequent lengthening of the courses of rivers together with changes in the courses of the rivers." There are numerous small rivers in which navigation cannot be carried on, because many of them are dry in most parts of the year, and the others flow into the sea through a wide estuary that it is not possible even for country craft to navigate in them.

The coastal strips of South India on the west and on the east are generally spoken of as one natural region ; but, barring the fact that both the lands are situated on the coast there is not much in common between the two. The most striking difference between the two coast lands is that in the west coast the lagoons are suited for carrying on trade even by steam launches, for the back-waters of Malabar are sufficiently deep to enable goods to be easily and cheaply transported from place to place. The back-waters on the east coast form a contrast to those on the west in as much as they are not continuous or have not a fairly regular supply of water. In the rivers of the

Contrast
between East
and West Coast.

west coast logs of wood felled are floated down the rivers, but that is not possible in the east coast rivers.

The east coast region through which the canal passes has a number of fishers' villages along the banks of the canal. Their main occupation is to go on the sea, and they are not attracted to work on the canal because they have not been made to feel that they can earn their living by navigating boats as well. Before the canal was opened up, the region ought to have presented a dreary appearance; but now along the banks one generally meets with numerous plantations, of Casuarina and Cocoanut, both of which thrive well, while none others can really be made to grow so well. The Cocoanut is the native of the soil, but the exotic Casuarina has gained a naturalized citizenship, since it grows well and is in constant and ever increasing demand. In addition to the suitability of the soil for the growth of the products concerned, there is a ready market for the articles named and some others which are available at a small distance from the bank of the canal. The region has economically been made use of; for, had it not been for the opening of the canal, it is very doubtful if the neighbouring would have come under plantations at all. The lands at a distance from the canal are mainly agricultural.

These features of the relief—viz., a flat country, a sandy soil, and a large number of small water-ways and backwaters—stimulated the early engineers to choose the site for the canal. These advantages had the counter-balancing disadvantages; for, difficulties of silting up and over-blooding at some seasons and lack of proper supply of water at others have been constantly experienced.

The Navigation on the Canal.

This purely navigation canal has proved so far quite unremunerative to the Government, though the traffic on it both with regard to tonnage and money value has been considerable. The cost of maintenance has always exceeded the actual revenue derived. Up to the year 1898 the capital outlay on the canal was 86 lakhs of rupees. In 1908 the capital was estimated at 90 lakhs of rupees. The capital has not been increased largely thereafter and now stands approximately at about 91 lakhs.

The annual receipts under the different items amounted to about Rs. 70,000 during the decade ending 1890 while the cost of maintenance then stood at about Rs. 97,000 for each of the years. From the following table the annual receipts for the 12 years from 1910—11 to 1921—22 will be seen to be on an average about Rs. 80,000. The annual cost of maintenance has far exceeded the income by over a 100 per cent at least.

Statement showing the financial Results.

Year.	Revenue.			Expenditure.		
	Naviga- tion.	Miscel- laneous.	Total.	Total Revenue Manage- ment.	Total Estab- lish- ment.	Total cost of Maintenance.
1910—11	69,910	2,412	70,323	7,032	14,122	81,290
1911—12	73,566	1,873	75,439	7,583	20,977	1,34,028
1912—13	71,190	1,262	72,452	7,266	21,802	1,29,593
1913—14	71,276	2,236	73,512	7,466	24,192	1,44,554
1914—15	63,896	2,574	66,470	6,835	27,300	1,58,850
1915—16	66,608	2,186	68,794	6,916	22,258	1,34,462
1916—17	63,147	3,338	66,485	6,721	19,307	1,13,168
1917—18	75,626	3,001	78,627	7,924	21,178	1,30,325
1918—19	80,328	6,369	86,697	...	30,276	1,92,483
1919—20	75,765	5,381	81,146	...	26,406	2,21,332
1920—21	73,952	2,775	76,727	...	33,080	2,20,360
1921—22	77,104	1,199	78,303	...	41,895	2,38,670

The Canal can roughly be divided into three regions from the point of view of its efficiency as a navigable water way. From its northern extremity up to the Swarnamukhi river for a distance of about 120 miles, the Canal can always be depended on as a safe means of transport. In this region the Canal is locked in, and the sea bars are practically open all the year round, thereby ensuring sufficient supply of water.

The second portion of north canal immediately to the south of the Swarnamukhi river is not quite as favourably situated as the northern part of the Canal. The want of double locks and the

numerous sea-bars which sometimes do not close for about six months in the year render it not as useful as the portion to the north of the Swarnamukhi river. All the same the two parts put together (*i.e.*, North Canal) are better fitted for navigation than the southern part. Boats of heavy draught can easily travel in this.

In the South canal the cargo traffic is at best uncertain. For it has been so constructed that it is better fitted for passenger traffic than for heavy traffic. The passenger traffic is chiefly from the city of Madras to Thiruporur for the monthly Krithigai festival and to Seven pagodas for the new moon days or the various days of festivals in the Vishnu temple of the place. In Covelong there is a Xian church and a mosque to which people also go. The only goods of importance carried in this region are cocoanuts from Edakainad and Casuarina.

The Canal supplies a felt human need ; for, the most important of the articles carried on it are rice, salt, fuel, building materials (including shells) and timber. It will easily be noted that many of them especially fuel and shells are in very great demand in the city and have a large bulk but comparatively low value. It is for this reason if not for others the Canal serves a real purpose. The Canal has competing with it the M. S. M. Railway which extends a long distance along its course. The usefulness of the Canal depends upon its being the means of supplying cheap articles needed to a large and populous town and affording facilities for the growing of such articles where none others can easily be raised.

The traffic in salt is very important, as its manufacture is a Government monopoly and as the practice has been adopted of storing it in Madras.

The Casuarina plantations and the Avaram plantations together with Cocoanut gardens have greatly increased along the coast on account of the facility of transport. So far year after year there has been a steady increase in the demand for and supply of these articles on the Canal.

In this connection we may note the importance of Srihari-kottah island in the Gudur Taluq of Nellore District. This long low bank of alluvial deposit a few feet above sea level has an area of about 200 square miles. The island is covered with jungle and

forms one of the chief sources, of supply of firewood for the Madras market by means of the canal. Recently many large plantations of Casuarina have been made by the Yenadis, the inhabitants of the island.

The small islands round the Pulicat lake are full of marine deposits of shells. These shells form an important article of export along the canal for the manufacture of chunam, an essential requisite for building and plastering purposes. There are several other useful articles transported along the canal, rice, paddy, oil-seeds, bamboos, metals and the like.

The canal, though useful even in ordinary times, counted for its greatest utility in times of scarcity when it was the means of connecting two fertile delta regions with the comparatively poorer country further south. It will be seen from the accompanying tables and diagrams that the trade in the articles is really large.

Description and quantities of goods carried.

	1910-11.		1911-12.		1912-13.	
	Total in Tons.	Value.	Total in Tons.	Value.	Total in Tons.	Value.
		Rs.		Rs.		Rs.
Rice and Paddy ...	10,700	4,44,480	20,123	7,19,330	14,774	6,32,406
Salt ...	1,22,365	33,55,217	420	33,600	110,115	32,58,333
Building						
Materials ...	48,851	1,46,553	46,077	1,38,228	49,900	1,49,854
Timber ...	1,296	1,03,680	940	75,200	843	67,500
Firewood ...	81,912	4,91,472	76,444	4,58,664	65,567	4,17,402
Casuarina Post ...	...	...	54	324	...	...

	1913-14.		1914-15.		1915-16.	
	Total in Tons.	Value.	Total in Tons.	Value.	Total in Tons.	Value.
		Rs.		Rs.		Rs.
Rice and Paddy...	12,633	15,06,807	13,221	14,94,390	13,537	15,39,327
Salt ...	66,410	26,56,400	78,594	36,15,324	2,687	1,26,289
Building Materials...	52,353	1 59,027	32,945	98,989	40,383½	4,79,179
Timber ...	789	74,955	446	37,464	545	47,960
Firewood ...	67,461	10,79,376	65,602	10,49,632	63,648½	6,36,485
Casuarina Posts.	115	746	...	...	42	680

Description and quantities of goods carried.

	1916-17.		1917-18.		1918-19.	
	Total in Tons.	Value.	Total in Tons.	Value.	Total in Tons.	Value.
		Rs.		Rs.		Rs.
Rice and Paddy...	14,311	17,85,740	16,462	19,89,150	19,295½	28,03,230
Salt ...	3,563	1,92,402	18,821	11,85,723	3,292½	2,30,475
Building Materials ...	44,932	17,97,280	40,562	16,63,042	44,314	6,60,085
Timber ...	619	46,747	361	42,237	336½	54,553
Firewood ...	74,274½	7,42,743	89,795	10,77,540	121,847½	17,10,407
Casuarina Posts...	...	...	...	...	...	...

To give an idea of the different commodities carried with their weight and value the following average for the three years 1919-1922 is given.

DESCRIPTION.	1919 - 1920.		1920 - 1921.		1921 - 1922.		Average.	
	Total.	Value.	Total.	Value.	Total.	Value.	Total.	Value.
Cotton, raw & manufactured.	19	113747	...	...	12	58111	...	...
Woollen goods do.	...	...	...	...	...	...	...	...
Dyes and tans	...	...	9	17478	6½	11195	...	...
Rice and paddy	15337	1012840	7444½	797530	11838	2001128	...	...
Other food-grains	1137	229654	...	...	571½	115463	...	...
Hides and skins	19	28628	...	...	19	28628	...	...
Liquors	...	...	4	10220	4	10220	...	...
Metals	21½	11676	21½	41086	37½	11512	...	...
Oils	19½	78873	55	46145	81½	21424½	...	...
Oil-seeds	...	...	...	...	76	61837½	...	...
Onions	...	...	...	...	...	...	...	...
Provisions	4509	5951880	1819	2663016	...	...	...	...
Salt	7016	392896	3495	188730	2277½	3873323	...	...
Spices	...	...	...	...	3103	249729	...	...
Sugar and Jaggery	44	12100	17	7004	...	...	...	...
Tobacco	958	1849498	1	652	31½	10309	...	...
Building materials	46934	1924294	40626½	436639	479½	925275	...	...
Miscellaneous goods	717	83889	1348	32708	41537	1293348	...	...
Timber	361	64258	328½	62050	1228	102143	...	...
Firewood	121238	1818578	86895	955845	345	65817	...	...
Bamboos	22	902	13	585	102228	1319011	...	...
Coal and coke	142	2556	73	813	14	598	...	...
Total Boat traffic	198566½	15576699	142284½	5895130	119	2161	...	...

Conclusion.

Should the paper be a mere narrative of facts I should stop here. The Madras Geographical Association, however, does not care for facts alone. We have to look into the future and the potentialities of the canal. Taking stock of facts we have a canal of 262 miles along the sea shore, dug and at various periods, with a capital of about a crore of rupees sunk in it. The concern is at present quite unremunerative to the Government and costs the general tax-payer about a lakh and sixty thousand rupees every year. As unbiassed students of Economics, we have to look at the possibilities of the canal. The future does not promise to be very rosy so far as the remunerative nature of the canal is concerned. It passes through a region which is sparsely populated and almost all the persons living to the west of the canal look to transporting their goods by Railway, since it affords a quicker means of transport though not a cheaper one. The main difficulty for obtaining proper amount of tonnage in the canal seems to be the lack of good roads leading to it. The villages on the western side of the canal are getting to be fast depopulated on account of the migration of the inhabitants into the interior.

Ennore has ceased to have attractions as summer residence. The abandoned bungalows all along the canal up to Pulicat bear eloquent testimony to this fact. The fact is that somehow people get inland and so the canal serves only those people who live between the sea and the canal and the number so living is very small. Even passenger traffic is not likely to increase. The tendency if judged aright from the way in which the Thirupporur passenger traffic is drifting is to prefer fast and costly transport by buses rather than to have cheap transport by the canal. The only place where there can be any passenger traffic at all is between Covelong and Pulicat and this is not likely to be of a respectable nature to yield large revenues.

A second handicap to the usefulness of the canal is the lack of proper facilities for back traffic. Almost all boats coming to Madras from the north with goods have to go back almost empty.

The Government has been alive to the way in which the canal serves as a drain on its resources and in the current year have taken on themselves the task of improving the junction and southern canals to be fit for boats of 3 feet draught and to enhance the fees for plying the boats, which were fixed when the canal first became a waterway. It is however quite doubtful if even a 50 per cent. increase of fees alone would go a long way to improve the situation. The outlook seems not to be attractive enough even for the canal to pay its way, not to speak of its becoming remunerative.

So what can be the future of the canal? The future should be such as can be of advantage to the resources of the Government and the utility of the public.

In ordinary times the canal proves somewhat useful to the city, but its maximum utility may be felt only in times of scarcity. So to abandon the canal would be discreditable to the Government and disadvantageous to the people. But the inevitable will have to be faced if no other course is possible, after trying the two ways suggested to make the concern remunerative or at least not as unremunerative as it has been thus far.

The solution which readily suggests itself is that the Government can try the improvements they have undertaken and work the canal for sometime, and if the enterprise still proves quite unremunerative, can hand over the concern to a private body—a canal improvement trust consisting of non-officials and expert officials—and be prepared to give the trust a sum equivalent to the net working expenses of an average of the five previous years and write off the interest on capital outlay. The contract should be for a sufficiently long period so that the Improvement Trust would be able to advertise the canal, construct feeder roads, attract traffic and encourage public travel by the canal at least between convenient stations. It is hoped that at least thereby the Government would be free from further losses year after year which it has so far been incurring by its direct management. The loss by interest is 2.5 lakhs and net working expenses 1.5 lakhs, and thus the total comes on an average to 4 lakhs every year.

The canal by its past history and present plight cannot but impress on the Government the very great necessity for well-planned and concerted action for famine relief works in future. The Government should investigate the possibilities in every area in case a famine should occur there. It is hoped that the Government would bestow on the problem the attention that it deserves.

V. K. SOURIRAJAN.

An ordinary meeting of the Association was held on 17th October 1928, when Mr. V. K. Sourirajan, M. A., L. T., of the Hindu High School, Triplicane, read a paper on "*The Buckingham Canal: a Survey-Historical, Geographical, and Economic.*" Mr. C. W. E. Cotton, I.C.S., C.I.E., occupied the chair.

After a few introductory remarks from the Chairman, the paper printed above was read. A discussion then ensued in which the following members took part.

Mr. M. Subramania Iyer stated that the running of the Buckingham Canal could be made a business proposition, and made to pay handsomely by developing it as a means of traffic.

Mr. P. S. Loganathan said that he differed from the previous speaker that the Canal could be worked as a business proposition. After all, the traffic passing through the Buckingham Canal was limited and could not compete with railway traffic. The yearly expenditure of nearly four lakhs of rupees on the maintenance of the Canal could as well be reserved for purposes of famine relief. He would, therefore, suggest the closing up of the Canal rather than wasting nearly four lakhs of rupees yearly on it. If, however, the Canal could do quite as well as the railway, it was then their duty to work it properly.

M. R. Ry. Rao Bahadur R. Krishna Rao Bhonsle suggested that the paper might be sent to the Government through their Chairman for such action that the Government might think fit. The question whether to close up the Canal or not is not a simple matter.

Mr. N. Subrahmanyam stated that there was competition between the Canal and the Railway only in transporting certain food products such as rice. But in transporting such other articles as were cheap and yet bulky such as firewood, shells, etc, the Canal was the only means of supply to the City.

The Chairman in the course of his concluding remarks thanked Mr. Sourirajan for his thought-provoking and instructive paper. He said he was particularly interested in water-ways owing to the interest that his uncle Sir Arthur Cotton used to evince in them both as a means of transport and as agents of irrigation. His uncle, however, was more particularly interested in the latter aspect, and was responsible for several big schemes.

The speaker personally had a greater knowledge and acquaintance of the waterways of the West Coast in Malabar. There the backwaters were numerous and were joined to one another by means of canals. Owing to the greater monsoon on the west coast, the backwaters were always deep even for steam navigation; and, what was more important, there was a lot of cargo to be carried about, owing to the great area of fertile country tapped by the backwaters. The Buckingham Canal can in no way stand comparison with the backwaters of Malabar. It did not tap a large area, and even the area it tapped was in no way comparable to the tropical luxuriance of the Malabar Coast. If feeder roads were constructed leading to the Canal so that the hinterland could be brought into communication with the Canal, the freightage available for transport over the Canal might be considerably increased.

Regarding competition between the Railway and the Canal, he thought there was not much of it as the cargo carried by the boats were cheap and bulky articles which were best transported in boats. In this connection having in view the cheap cargo carried, he thought that any rise in the fees would be a difficult task.

Mr. Sourirajan had suggested among others the scrapping of the Canal because it cost the tax-payer heavily every year. They should not look at the question in that light. Supposing a road costs far more to maintain than the revenue to be derived from it in the way

of toll-gate fees, would they demand its abolition? Certainly not. They should look to the great amenities provided by the Canal. Supposing the Canal were scrapped, they would have to pay a far greater price for their fuel, building materials, etc., than they were now doing. By all means let them improve the Canal, and make it as much a financial success as possible. But the mere fact that it worked at a loss on paper could not support any argument for its being scrapped.

The meeting closed with a vote of thanks to the Chairman and the Lecturer.

The Geographical Basis of Ancient South Indian Culture.

It is proposed in this study to follow the ethnological method and trace the growth of human culture in South India in ancient times as conditioned by the physiographic environment in which the people lived.

Our knowledge of ancient times has accumulated so far as to enable us to draw, by the exercise of scientific imagination, imaginative sketches of life in the past.

The ancient Tamils noted that the habitable parts of the earth's surface were divisible into five regions or *tinai*s as they named it. *Tinai* seems to be derived from a root *ti*, or *tin*, which means a stretch of land and has given birth to the words *tittu*, a sand-bank, a little hill, a dry spot in a river bed, *tittai*, *tidar*, *tidal*, a sand-bank, a flat shoal, highland, *tinnai*, a raised-platform. The root *tin* also means strength, firmness, and the word *tinai*, was used also in the sense of the earth in general. The ancient Tamils observed that the land-surface of the earth consisted of five natural regions and the manifestations of human life were conditioned by the characteristics of the *milieu* in which each tribe has grown. The five *tinai*s were called (1) *Pā'ai*, dry waterless sandy regions, (2) *Kurinjī*, the hill country, (3) *Mullai*, the jungly tracts that intervene between the uplands and the lowlands, (4) *Marudam* the lower courses of rivers, the penoplain worn down by centuries of erosion till its level has become approximately the same as that of the river in flood, and (5) *Neydal* the littoral tract, that which skirts the sea. All these five kinds of natural regions are found in the Tamil country, though on a small scale, and as man has continuously inhabited South India from very ancient times he successively passed from region to region and developed the types of culture which it might be calculated to produce.

The earliest region to be inhabited by man was the *kurinjī*, the tracts where stand the low hills resulting from the age long erosion of the Deccan plateau by the never failing yearly monsoon rains. Below the hilly regions was the thickly wooded tropical forest named after the demon *Dandaka*, in which abounded the rivals of early man in the struggle for existence—his big-limbed foes, the tiger, the elephant, the wild buffalo, the python, as well as the minute insect pests which are even more destructive of human life than the larger animals. In the *kurinjī* early man could easily find shelter from the sun and the rain and from his animal foes, behind boulders and within natural caves. He had not then invented pots for storing

water, but he found reservoirs of water in the rocky pits which abounded in the hilly region when the natural springs failed him. The pebble that he could pick up from under his feet served him as a primitive tool and the abundant supply of flints of various shapes stimulated his inventiveness and he learnt to shape the axes, and the spears, the choppers and the scrapers that he needed. Hence was evolved in this region the earliest stage of human culture, that called palaeolithic; the artefacts belonging to this stage are chiefly found in the kurijji regions which abound in the Cuddapah, Nellore, North Arcot and Chingleput districts.

Early man in kurijji land at first subsisted on fruits, nuts and tubers. But the variations in the supply of these articles of food due to seasonal changes soon impelled him to add the flesh of animals to his dietary. This fact, more than the necessity for guarding himself against his animal foes made him an expert hunter. Hence man's first position was that of the hunter and his earliest mode of life that of the nomad. Palaeolithic implements all the world over are of the same patterns and this proves that the early man was a great wanderer over the face of the earth.

This environment in the kurijji regions also led to two other very great inventions of the hunter stage of human culture, namely the bow and arrow and the process of making fire. The bamboo grows abundantly in the kurijji regions of Southern India and the Kuravar, as the inhabitants of that land were called, shrewdly noted the elasticity of the trunk of the bamboo and bent split bamboos, tied a bit of dried creeper to them and learnt to shoot thence long thoras. This was the origin of the bow in the use of which the Indian hillman has at all times been an expert, as is proved by the facts that the Indian Bowman was a muchprized component of the armies of Darius and Xerxes and the Indian shikari to-day can kill a tiger with a single arrow from his bow.

The other invention of the early Kuravar, the greatest of human inventions, was the making of fire. Early in the palaeolithic age the inhabitants of the kurijji land noted the origin of forest fires by the violent friction of bamboo stems against one another during the fierce monsoon winds, and learnt therefrom that he could start a fire by rubbing together two pieces of wood. The first use to which fire was put was the roasting of the meat of the animals which they hunted.

While the males of the settlement were out hunting, the women were engaged in picking fruits, digging for roots, and garnering the seeds of the cereals that grew of their own accord around their places of abode, especially wild rice (aivananel), bamboo-rice (a ūngil arisi), and panicum (tinai).

The other duty of women was to look after their children.

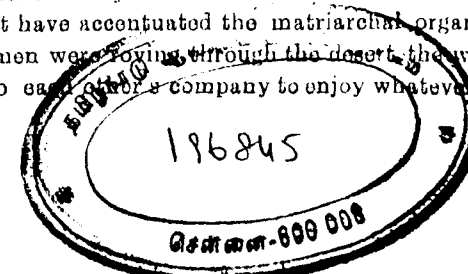
Man at this stage of culture did not learn to build houses; they were scarcely necessary, the South Indian climate was so beneficent that no shelter other than the covert afforded by trees or big boulders or natural caves was needed for protection from sun and rain. Houses were first built

by man not so much for shelter as for the safe storage of primitive wealth in the form of food-stuffs and the early palaeolithic man had not yet felt the need of storing provisions. The necessities of a nomad life and the want of permanent homes did not encourage the free development of domestic instincts on the part of the men; hence the matriarchal form of tribal life was first developed.

Another circumstance encouraged the formation of this type of life. Primitive man was not encumbered with elaborate forms of the marriage-rite. Love at first sight and its immediate consummation, followed in some cases very leisurely by a tribal feast, constituted the wedding ceremony. The marriage tie, we may take it, was not always of a very permanent character. All these causes, and more especially the want of development of personal property and a sense of attachment to a permanent house, encouraged the persistence during long periods of the matriarchate.

Love of personal adornment had always characterised men and more especially women. The Kurava women spent their leisure moments in picking shells and stringing them together for the purpose of making garlands of them for decorating their person. Their lovers presented them with trophies of hunt, like the claws of the tiger which they shot, and these worn, round the neck, became, in much later times, the prototype of the tāli, so much prized in South India as a symbol of a married woman. Another kind of personal adornment was the leafgarment, a number of leaves tied together with a bit of dried creeper and worn round the waist, a custom which still prevails among the most primitive of the jungle tribes.

The pālai, the dry sandy desert, can scarcely be considered as a subdivision of the habitable regions of the earth's surface. When drawn by the chase of the wild animals, the sturdy hunter would be compelled to make a temporary abode in the pālai region. But the call of the desert finds an echo in the bosoms of those who are born with a love of adventure and wander-lust is the main motive power that impels the lives of many men who possess strong sinews and a stout heart. The men who lived in the desert region for a short time or all their lives, were the maravar, men of marām, heroism and kaļvar, the strong men, (from kaļ, strength, whence kaļru, the elephant, the strong animal *par excellence*, also the shark, and kaļ, liquor, the strength giver, and kaļam, the field of battle). The pālai region being infertile and its men being noted for prowess in arms, the maravar and the kaļlar took in later times to the profession of soldiering and of preying on the rich but weak inhabitants of other regions and marām has come to mean cruelty and kaļlar, thieves. But in early times men took to the pālai regions chiefly on account of their love of adventure. Life in these regions must have accentuated the matriarchal organisation of tribal life, for while the men were voyaging through the desert, the women and children were thrown into each other's company to enjoy whatever domestic amenities were available.



When human beings multiplied in the *kurinji* regions and the available food supply began to shrink, they began to migrate to the next region, the *mullai* or forest land. By that time they had taken the next great step in the advancement of human culture, the domestication of animals, like the buffalo, the sheep and the goat—the dog having already been domesticated in the *kuravar* stage. This led to the growth of the second rung in the ladder of human progress, the pastoral culture. Cattle breed fast, especially in the *mullai* and hence arose the institution of private property, the possession of which facilitated the fission of tribes into families.

The primitive form of what may be called natural marriage the union of lovers at first sight, unimpeded by the observance of marriage rites and formalized merely by the presentation of a tail of tiger's claws and a garment of strung leaves for the waist was called *kalavee* in early Tamil literature and was, in the pastoral regions, replaced by *Karpu* in which the marriage ritual precedes the consummation of love. The essential portion of this ceremony was the feasting of the men and women of the tribe underneath a *pandal*, the ordinary tenement of pastoral men, decorated with flowers and leaves.*

The institution of the *Karpu* form of marriage and the development of private property led to the evolution of the patriarchal form of society.

The father of the family, being the possessor of a large, growing herd of cattle, acquired the great influence of wealth. The joint family system now arose, because pasture lands parcelled out into tiny bits would become too small to maintain a flock: and the family which resulted from the sub-division of the tribe, could maintain itself against competition only if its members held together and constituted a growing unit. The patriarchal head of a large family developed into a king. That the institution of kingship first arose among the pastoral tribes in *mullai* land is proved by the facts that the Tamil word for a king, *kōn*, also means a cowherd and that for a queen, *āyechchi*, means a cowherdess.

Pastoral life outside India, as in the steppes of Central Asia, differed from the life of the *Īḍiyar* of the *mullai* land, i.e., the people of the midregion between the hills and the plains, in two respects: (1) the use of tents (2) the constant shifting of the herdsmen tribes from one patch of grass land to another. The invention of tents was needless in South India on account of the equability of the climate all the year round. A few fanlike palmyra leaves thrown on a frame of dried sticks propped up by some bamboo pillars proved enough to afford shelter to man and beast. The fertility of the soil and the periodicity of the monsoon ensured the growth of pasture on the same spot year after year. So that it was not necessary as in the steppes to break tent when the grass round a settlement was eaten up by the herd, or parched up by the summer sun, and to seek pastures new. The pastoral life in South India hence was not seminomad but was a settled life capable of developing the amenities of civilisation.

* Aham 86.

The life of ease made possible by the leisurely tendance of cattle in the forest led to the invention of the flute, the *kalai*. The flute was a bit of bamboo with a few holes drilled along its length and from it was produced melodious music which relieved the cowherd of the *ennui* due to the long hours of waiting while the cattle grazed.

One section of the pastoral people were the *Kurambar*, who tended the short legged well-fleeced variety of sheep called the *kurumīadu*. They learned to weave kambalis from the wool of their sheep and even to-day these *kurambar* inhabit the *mullai* regions of the Madras Presidency and follow their traditional occupation of kambali-weaving though the inevitable steam-engine has now established itself in *mullai* tracts and the weaving of wool with the power-loom is depriving the *kurambar*, as also other kinds of handicraftsmen, of their age-long means of earning their daily bread.

The next region to be occupied was the *neydal*, the sea-board. The broad bosom of the sea, heaving and falling as if animated, invited the adventure loving men to court its dangers and venture forth to obtain its inexhaustible wealth of tasty fish. From fishing near the coast they went on to fish in deeper waters. Hence the environment turned the *paradavar*, as the inhabitants of the littoral tracts were called, into boat-builders and fishermen. The first boats were primitive barks made of two logs tied together. Catamarans of several logs bound together to form a float or *tōṇ*'s, wicker-work baskets covered with leather, followed next. The chief produce of this region was fish and salt. The *paradavar* had to take them into the interior and barter them for other forms of food-stuff. Their environment again made the *paradavar* turn merchants. Placing their wares in double bags on the backs of oxen, as their modern-day descendants, the *balayas*, do today, they trudged along the marshy paths and exchanged their goods for the produce of riverine plains. From the *paradavar* also rose the race of ancient Indian sailors who, later on, carried Indian goods in boats to Africa and Arabia, in the West, and to Malaya and China, in the East.

The last region to be occupied was the *marudam*, the low lying plains between the *mullai* and the *neydal*, and that was at the close of the palaeolithic period. With the neolithic age began modern civilization. The domestication of plants, especially the rice, the plantain, the sugar-cane and the mango, probably begun in the relatively settled life of the pastoral age, was completed.

The arability of the land in this region taught the *ujavar*, the ploughmen of the *Marudam*, the method of raising cereals after ploughing the ground; and the easy slope of the land in the margin of the rivers taught the *Vellalar*, the rulers of the flood, the method of conveying the life-giving water to their fields. Thus were the arts of agriculture developed to such perfection in early days that modern science can add but little to the traditional wisdom of the South Indian farmer. Beyond the river-valleys lay the

land whose soil was made by the mixture of the rain-washed detritus of the traprock of the Western Ghats and the decaying vegetation of the Dandaka forest. This was the birth-place of the cotton plant and neolithic man learnt to spin the cotton fibre into thread and weave the thread into cotton cloth.

Men now began to build houses of timber wherein to stock their superfluous store of food grain and cotton cloth. The barter of superfluous articles for things which were not easily available in the marudam region, like salt and the sea-fish with the paradavar, and milk and milk-products, especially ghee, with the idayar, and stones and stone tools (and after the discovery of iron, iron tools) with the kuravar, led to the development of carts for transport by land and the circle of the evolution of civilisation was complete. The perfection of neolithic culture and the arts and industries of the marudam region represent the last great step of human civilisation.

The five subdivisions of habitable regions occur contiguous to each other and in a small fraction of the earth's surface in India south of the Vindhya. It is, therefore, easy to understand how increase of population and alterations in the natural supply of foodstuffs brought about here, at different periods, the migration of men from region to region and the consequent development of the different stages of human culture, the hunter, the nomad, the pastoral, the coastal, and the agricultural, due to the differing stimuli provided by the changing milieu. In other words, the geographic control of the growth of human civilisation can be worked out and set forth clear as on a map by a study of man's progress even in this restricted portion of the surface of the earth. Some writers conduct the ancient "Dravidians" with the accuracy of a Cook's guide through the north-eastern or north-western mountain passes along the western or the eastern coast of India and drop them with a ready-made foreign culture on the banks of the Kāveri or the Vaigai. Others discover an Aryan race and an Aryan culture, though repellent of the Indian soil, but yet crossing the N. W. gates of India and creeping slowly along the banks of the Sindhu and the Gaṅgā without leaving a trace of that culture in the imagined land of its birth. But the above account of continuous evolution of South Indian culture—whose growth in South India is evidenced by the presence of artefacts of the palaeolithic, neolithic and early iron ages throughout the country and is traceable in the earliest strata of the Tamil language and literature, shows us that growth of civilisation in the Tamil land is mostly due to geographical causes operating *in situ* and not to historical events such as incursions of foreigners.

Besides cooking and clothing, another great invention of man is speech. Speech may be either rhythmic or arhythmic. Whether prose preceded poetry in speech as is assumed by most people, or whether, as is more probable, poetry and prose were later differentiations of an original method of speech which was partly rhythmic and partly arhythmic, it is difficult to determine; but it is certain that in the development of literature, poetry preceded prose by long ages. The words *paṇ* and *pāṇ*, meaning song, (whence *pāṇi*, sing

lāṭṭu, a piece of music), belong to the earliest stratum of Tamil, proving that singing was one of the earliest recreations of the Tamils. *Pāṇar*, originally singers and, after the institution of kingship in the pastoral stage of culture, royal bards and panegyrists, followed an ancient and honoured, though ill rewarded, profession among the Tamils. The ancient *pāṇar* were the friends and councillors of kings during the long ages when pure Tamil culture flourished, but when Aryan culture from North India mingled with that of South India during historic times, the persistence of the *Pāṇar* in the over-indulgence in meat-food and drink brought about their social degradation into one of the lowest and most untouchable castes of South India.

This account of ancient South Indian culture will not be complete without taking note of another great element of human culture. Man is not only a tool-making, cooking, clothing, and speaking animal but also a religious animal. Man alone of the higher animals has besides inventing the fire and tools and speech, also invented methods of invoking or compelling the help of what he conceives as superhuman beings to avoid the real or imaginary evils that threaten him and to secure the things he ardently longs for. These methods consisted of religio-magical rituals, the differentiation between religion and magic belonging to later stages of civilization. This religio-magical ritual comprised ritual feasting, ritual singing and ritual dancing. In later times feasting and singing and the drama became differentiated from each other as secular activities, but this differentiation took a long time to be established. In early times the Gods and the ritual of their worship were evolved in each region separately and in accordance with the geographical characteristics of that region. A brief account of these will be presently given, derived from the earliest strata of Tamil literature, now available.

Early Tamil literature, like all literature produced in the early ages when scholarship had not begun to quench the inspiration which poets derive from their environment, is a true mirror of the early life of the Tamil people. Neither in poetic form nor in imagery, neither in language nor in art was it at all influenced by the contemporary Sanskrit culture of North India whose dominant influence on all the departments of life in South India commenced in historic times, probably about 2000 years ago.

Even after the influence of the Sanskrit language and literature began to be definitely exercised, there was a concurrent flow till the sixth century A. D. of two types of literary tradition, the pure, unalloyed ancient Tamil tradition and that which came to be gradually more and more moulded by Sanskrit literature, in form as well as content. Much of early Tamil poetry has disappeared with the efflux of time, because in early days writing was the handmaiden of business, administrative or mercantile, and it was regarded as a sacrilege to write literature but on the tablets of human memory. Hence it happened that religious literature, like the Vedas, was specially memorised with great care and has been preserved for the use of posterity, whereas the earlier Sanskrit secular literature is

represented only by stray mantras which have got an incongruous lodging in the Rigveda Samhita, e.g. the remains of an old ribald ballad (R.V.I, 126-8). Early Tamil literature being all secular, much of it was lost, as is proved by the fact that the commentators on the *Poruḷadibhāram* of the *Tolkāppiyam* have been unable to find illustrative examples of many of the turns, sub-incidents of love and war described in that work. But yet enough of that literature remains to prove that the life and manners of the ancient Tamil people and the literary conventions they evolved, were the result of their reaction to their geographical environment and not influenced by historical causes like their contact with their contemporaries outside South-India. On account of the unsettlement, religious, social, and political, caused by the Mahābhārata war, streams of Brāhmana monks seeking retirement from the turmoil of life, as well as lay Brāhmanas inspired by love of adventure, began to pour steadily into South India. One of them was a great scholar, trained in the methods of grammatical investigation, belonging to the Agastya gotra, not of course the Agastya of the Rigveda hymns, nor even the Agastya of Sri Rāma's time in the Pōdivil hill in the heart of the Pandya country; and the Tamils called him Ahattiyānār. He acquired a complete mastery of the Tamil tongue and the then existing Tamil literature. It is the clash of language with language in the minds of scholars that has always led to the investigation of grammatical facts and Ahattiyānār composed a grammar of Tamil (using the word grammar in a wide sense so as to include linguistics, rhetoric, and poetics), called *Ahattiyam*. This work is now lost and is represented only by a few quotations scattered in the works of scholiasts (*uraiyāṣṭriyar*) of very much later times. Ahattiyānār was followed by several generations of grammatical writers of whom the leading light was *Tolkāppiyānār*. Legend makes *Tolkāppiyānār* the direct disciple of Ahattiyānār, but as *Tolkāppiyānār* frequently refers to several preceding scholars, (*pulavar*), that preceded him, we may take it that he was removed from Ahattiyānār by many generations.

Tolkāppiyānār was a Brahman settler in Southern India belonging to the Kāppiya or the Kāvya clan, descended physically or spiritually from Kavi or Sukra, son of Bhṛigu. His treatise is called after him the *Tolkāppiyam*. This work is at the same time a grammar of the Tamil language, a grammar of the life of the Tamil people, and a grammar of the Tamil poetry, developed long before the influence of Sanskrit began to act on Tamil minds. In the last part of this work called the *Poruḷadibhāram*, can be found recorded the ethnological notions of the Tamil people and their age-long literary traditions based on the geographical conditions of life in the Tamil land.

The Tamil land was for geographical purposes divided into five *tināis*, and, when poetry arose, each region developed its own kind of poems suited to the peculiar conditions of life prevalent there, so that *tinai* came also to mean a class of poetry suited to a particular region. As love and war are the human activities that most appeal to poets, poetry was divided into two main divisions,

ahattimāi, love poetry and *purattimāi*, war poetry, *aham*, inside, referring to the emotional satisfaction which a man cannot share with others and *puram*, outside, to that which he can. The main incidents in the course of love and the poems which dealt with them were at first considered as five, correlated, to the five regions. The incident appropriate to *Kuṛinji* was love at first sight and immediate consummation thereof. The romance of hilly scenery and the possibilities that the *kuṛinji* affords to young men and women for meeting in solitude, is the reason why poems on this subject appertain to this region. The sturdy mountaineers and the buxom girls of the hilly tracts are described as more prone to love than the weaklings of *mullai* or *marudam*. *Pālai* poems deal primarily with the parting of lovers and also with the parting of the heroine with her relations and friends when she decides to elope with her lover. The desolation of the *pālai* region is appropriate to such parting. The heroine waiting for her lover appertains to *mullai*, because in pastoral life the woman has to stay at home the livelong day when her man goes out to tend his flock. He may divert himself by making his flute, the *kuḷal*, utter sweet music and by observing the beauties of the still calm life around him as well as hearing the love songs of birds and watching the gambols of his wards. But she has to bear his absence patiently waiting at home and this is fit subject for the *mullai* poets. In the *neydal* the separation of the lovers is for longer periods, for the fisherman spends several days on the sea catching fish and his mistress awaits his return, her mind laden with anxiety and the *neydal* poets depict this. In the *marudam* after the seed is sown and till the harvest is garnered, men and women have nothing to do; so there is much opportunity for the lovers to get tired of drinking in with their eyes each other's beauty, and there is every temptation for lover's idle quarrels to break out, causing temporary pain till the quarrel ends with the sweet kisses of reconciliation. These five topics are described by *Tolkāppiyānār* as the *uripporul*, the specific topic of the *tināis*.*

புணர்தல் பிரித விருத்த விரங்க
ஆட விவற்றி னிமித்த மென்றினை
தேருங் காலைத் திணைக்குரிப் பொருளே.
கொண்டுதலைக் கழியினும் பிரிந்தவ னிரங்கினு
முண்டென மொழிப வேரிடத் தான
கலந்த பொழுதுங் காட்சியு மன்ன.

The heroes of each *tinai* are also *uripporul* or essential objects. They are the chiefs of the tribes who live in each *tinai*. The *Pānar* sang from early times with an eye to profit and dealt with the love feats of chiefs and not of the ordinary poor men. Says *Tolkāppiyānār*:—"The names of the chiefs of the *tināis* (like the names of the tribes living there) are of two kinds,

those derived from the nouns and verbs (qualities and actions pertaining to the *tiṇvis*). The men of *mullai* and *kurinji* are (respectively) herdsmen and hunters; (their chiefs) are the heroes of the *tiṇvis*, the women (living in these regions) are the heroines). Similarly the heroes of the other regions are the chiefs of the tribes living there." The names of the tribes (and their chiefs) so briefly referred to by *Tolkāppiyānār* are enumerated in great detail by his commentators who give numerous names of the tribes, all derived from the characteristics and actions peculiar to these regions.

It may be pointed out here that some of the names of the tribes peculiar to the *tiṇvis* have become caste-names. e.g., *kuṟavar*, *maṟavar*, *paradavar*, *Idiyar*, *vellār*. It is but natural for the inhabitants of the different regions and especially those that followed occupations which prevented their migration from district to district, to develop the custom of endogamy and endogamy has been the cause of the never-ending process of the fission of the people of India into an endless series of castes and sub-castes. But to *Tolkāppiyānār*, the artificial division of men into four *varṇas* with reference to their duties in the fire-ritual was a matter of sacred tradition; Aryan tradition would restrict the heroism of the poems to the three higher castes and *Tolkāppiyānār* finds it difficult to reconcile this with the Tamil literary convention which requires men from outside the pale of the higher castes to be the heroes of poems. He, therefore, says, the people who according to the Vedas are entitled to command others, that is, the men of the higher caste and others like them are the specific objects (here heroes of the five *tiṇvis*).[†]

பெயரும் வினைபு மென்றாயிரு வகைய
திணைதொறு மரீஇய திணைநிலைப் பெயரே.
ஆயர் வேட்டுவ ராடேத் திணைப்பெய
ராவயின் வருடங் கிழவரு முளரே.
ஏனோர் பாங்கினு மெண்ணுங் காலை
யானு வகைய திணைநிலைப் பெயரே.
எவன் மரபி னேனோரு முரிய
ராகிய நிலைமை யவரு மன்னர்.

Besides the *uripporu*, specific objects, there are the primary topics, *mudapporu* of the *tiṇvis*. They are the times and places propitiatory to the five incidents of love. The places are the five regions already discussed. The times suited to the five *tiṇvis* are described as follows:—The learned say that *kār*, the cloudy season when the sky is black and the evening (*mā'ā*) are suited to *mullai* and *kūdir*, the cold weather, and *yānam*, the middle of the night, (to) *kuṟiñji*. The teacher says that *munpani*, the season

of the evening dew also belongs to *kuṟiñji*. *Vaiharai* (from P. M. to dawn) and especially *vidiyai*, day-break, are appropriate to (love's quarrels which belong to) *marudam*, and *erādu*, afternoon, to *neydal*. *Pālai*, the *tiṇai* that stands in the middle, is held to belong to *nappahai*, the middle of the day and *vēnil*, the hot weather.* The season of the morning dew also belongs to it.

காரு மாலைபு முல்லை குறிஞ்சி
கூத்திர் யாம மென்மனார் புலவர்
பனி யெதிர் பருவமு முறித்தன மொழிப
வைகுறு விடியன் மருத் மெற்பாடு
நெய்த லாதன் மெய்பெறத் தோன்றும்.
நடுவுநிலைத் திணையே நண்பகல் வெணிலொடு
முடிவுநிலை மருங்கின் முன்னிய நெறித்த
ரின்பனி தானு முறித்தென மொழிப.

How each time is specially propitiatory to the corresponding love incident is so self-evident that the subject need not be discussed at length.

One more set of topics (*poru*) remains and it is that of the seed-topics (*Karupporu*) or essential objects of each *tiṇai*. They are the gods, food-stuffs, beasts, trees, birds, drums, occupations, musical instruments, etc., appropriate to each region and the department of poetry pertaining to it.*

தெய்வ முனுவே மாமாம் புட்பறை
செய்தி யாழின் பகுதியொடு தொகை
யவ்வகை யிறவுங் கருவென மொழிப.

Of these seed-topics *Tolkāppiyānār* enumerates only the gods. The rest are noted by the commentators and are briefly referred to below, to show what keen observers of nature the ancient Tamil poets were and how anxious they were to be absolutely true to nature. The food-stuffs peculiar to *mullai* are the millets and the lentils; the beasts, the deer, the stag and the hare; the trees, *korai* (cassia), *kurundu*, and the tall *pudal* grass; the birds, the jungle-fowl and the partridge; the occupations, grazing herds, and the garnering of millets; the amusement, bullracing; the flowers, *mullai*, which gave its name to the region, *pidavu*, *talavu* and *tōrri*; and the sources of water-supply, the mountain streams

Appropriate to the *kuṟiñji* are *aiyanam* (mountain-paddy), bamboo-rice and *tinai*; the tiger, the elephant, the bear and the boar; the *ahil*, the *atti*, the teak, the *timisu* and the *vēngai*; the parrot and the pea-fowl; honey gathering, collecting tubers, raising the *tinai* and the extermination of locusts; the *kuṟiñji* flower, *vēngai*, *kāndal* and the *sunakkuvai*; and mountain streams and tanks. The essential objects of *marudam* are red rice; and white rice; the buffalo and the beaver; the *marudam* tree, the *kāñji*, and the creeper

Vanji; the duck, the water-fowl, the swan and the nightingale; sowing paddy, transplanting, weeding, harvesting; bull-racing; the lotus and the red-waterlily; and rivers, wells and ponds.

Pertaining to the *neydal* are the food-stuffs bartered for fish and salt; bullocks and buffaloes carrying bags of salt, the crocodile and the shark; the *punnai*, the *ñāḷai* and the *ḷaṇḍai*; the sea-crow; fishing, salt-manufacture and the sale of fish and salt; the flowers *kaidai* and *neydal*; and wells in sandy tracts and salt marshes. Suited to *rālai* were foodstuffs resulting from highway robbery and pillage; emaciated elephants tigers and wild-dogs; the dried-up *iruppai* tree, the mango, the *uḷḷai*, the *ñemai*, the *pālai*, the *kaḷḷi*, and the *sūrai*; the eagle, the kite and the pigeon; the occupations, highway robbery and plunder; the flowers *maṇḍai*, *kuraḷai*; and wells with scant water.

Critics of poetry in all other languages go into hysterics over a poet's reference to a single flower or a solitary bird in its proper *milieu*. What then should be the meed of praise which ought to be allotted to the hundreds of ancient Tamil *Pāṇar* who so systematically observed the environment of man in each natural region and so accurately described the correlation of human life to its natural surroundings.

There remains yet to discuss the gods of these regions. Says *Tolkāppiyar*, (The regions) are in order called *mullai* *kuṇṇi*, *marudam* and *neydal*, being respectively, the forest region beloved of *māyōn*, the hilly country favoured by *Śēyōn*, the land of sweet-waters desired by *vēndan* and the world of heavy sand dear to *varuṇan*.

மாயோன் மேய காடுறை யுலகமுஞ்
சேயோன் மேய மைவரை யுலகமும்
வேந்தன் மேய தீம்புன லுலகமும்
வருணன் மேய பெருமண லுலகமும்
முல்லை குறிஞ்சி மருத நெய்தலெனச்
சொல்லிய முறையாற் சொல்லவும் படுமே.

Before discussing the aptness of the gods to the regions it has to be noted that *Tolkāppiyar* omits in this enumeration the region of *rālai*. It was an unsettled question with the ancient Tamil thinkers whether the habitable regions were five or four; for the *rālai* is scarcely fitted for permanent occupation by man. Hence though the *tiṇais* were always regarded as five, the natural regions were sometimes treated as four and poets called the habitable earth the four-fold land.*

குடிசெழிஇய நானிலவோடு.

Now to return to the gods. *Vēndan* is *Indiran*, the god of the rice-land and the king of the gods and *Varuṇan* the lord of the sea and the sea-coast, *Māyōn* is the god of wonders, whose name is derived from the Tamil root *māy*, to be astonished, whence Tamil *māya* and Sanskrit *māyā* (for which

no convincing Sanskrit derivation has been found except the jingle *ṣāṇā Śāṇyā*) which presupposes a long evolution of high metaphysics before the word was invented. *Māyōn* is *Kannan*, beloved of *Iḍayar* girls, later amalgamated with the historic *Kṛṣṇa*, lord of *Dvārakā*. *Seyon* is the red god of the hills. The word *Sivan* also means the red-god, translated into *Rudra* in Sanskrit; but the red god of destruction garlanded with death-dealing serpents, also the personification of the energy of creation, symbolised by the member of virile energy, the *lingam*, worshipped from the stone-age onwards, this *Sivan* was displaced in early poetry by his red-coloured son *Muruban* who rode on the serpent-killing pea-fowl. *Muruban*, being a hunter god, may be derived from the same root as *muradar*, hunters (Sanskritized as *Murundas*); or the name, as is usually held is from Tamil *muruhu*, which means both beauty and youth, for *Muruban* is *Kumāra* the beloved boy-god.

But are these Aryan gods or Tamil Gods? Before answering this question it has to be remarked that modern European investigations of ancient Indian History have thrown the study of Indian theogony into much confusion by their theories of the multiplicity of warring races and rival tribal gods in old India, theories hanging like the sword of Damocles by a single slender (and that, mistaken) hair of evidence, they speak of Aryan gods and non-Aryan gods, northern divinities and southern divinities, competing for popularity, now rivals of each other, then amalgamating with each other and reincarnating in new ways. They speak of *Indra* as being a deity special to the Aryans of North India but we find descriptions of his worship in early strata of Tamil literature, the mode of worship being fireless (*anagni*) and characteristically different from the Aryan mode. They speak of *Śiva* and *Vishṇu* as being originally Tamil gods who were gradually imported into the Vedic pantheon the latter in the earlier stages of the evolution of Vedic ritual and the former later on. They speak of *Varuṇa* as being a foreign deity imported into India because of the equation of Sanskrit *Varuṇa* with Greek *Ouranos*, an equation since proved to be phonetically impossible. We can see ancient Indian History in proper perspective, only if we keep constantly in mind the following facts derived from a study of artefacts of early Indian man and the testimony of early Sanskrit and Tamil literature:—The bulk of the people of India have been one and indigenous to the soil and not settlers from foreign countries; their culture has progressed from the beginning in a straight line, the rate of progress being different in different times; and sporadic intrusions of foreign tribes and elements of foreign cultures have affected but the outer skin of the life of the people, the fundamental national outlook having been the same throughout the ages.

The different shades of the ancient culture of the Indian people in different parts of the country are different instances of geographical control; they are corresponding reactions of the people to the different kinds of physical environment and not due to the intermixture of different races

at different times. The evidence of the vedic mantras shows that there was much intercourse between northern and southern India in the age of the Rishis and the Ārya and Anārya lived the same kind of life and possessed the same kind of culture, their only point of difference being that the former was devoted to the fire-cult, whereas the latter were opposed to it; they worshipped practically the same Gods but the Ārya offered sacrifices, animal and vegetable, through Agni and with the accompaniment of Sanskrit mantras while the Anārya was *Anagni*, fireless, and offered the same sacrifices without mantras and without lighting the holy fire. This difference of cult did not constitute a difference of culture, Indian culture being the same throughout India in ancient as in modern times. This is the traditional view of Indian history. We can thus understand that the gods of the *tinai*s were neither specially northern gods nor specially southern gods; they belonged as much to South India as to North India. Each was special only to his own region because he was conceived and his worship was evolved with reference to the geographical characteristics of his region and the five regions exist as much in Āryan India as in Tamil India and that on a more magnified scale.

The appropriateness of the gods to their regions in the Tamil country is thus explained by Nacchinārkkinīyar, the commentator of the *Tolkāppiyam*:—"The guardians of the cows in the *mullai* region in order to secure the safety of their herds which yield the material for sacrifice to Māyon, dance the *kuravai* dance and offer much boiled rice; then he manifests himself. In the *kuṛiñji* land, Kuṛavan and others gather and, collecting the materials suited to it, dance the *veṇiāṭṭam* and then Muruhan manifests himself."

"Indira is the king of the gods and the sweet-voiced cloud. The gods easily understand the playful delights of love, such as dancing, singing, and feigned dislikes of lovers. For enjoying the pleasures of the quarrels and subsequent reconciliations of lovers, they celebrate the worship of Indiran and invoke him, then he manifests himself. The *vaḷaiyar* of the *neydal* land, when their fishing expedition proves a failure assemble with their children on the sea-coast, paint there the horn of the shark and bless Varuṇan; then he manifests himself."

This description of the old Tamil forms of worship shows they were characteristically different from those of the Vedic fire-cult, and absolutely aboriginal to Tamil India. The Tamil gods, then, were not imported Āryan gods but the gods worshipped by the Tamils from time immemorial, not in following their own fireless method of worship. Hence it is absolutely wrong to hold that the gods of the *tinai*s were adopted by the Tamils after the Āryans had begun to influence the minds of the southerners².

1. Vide *Tirumurhārruppadai*, ii
2. For a further discussion of the subject, vide my *Pre-Āryan Tamil Culture*.

With regard to the *pālai* region omitted by *Tolkāppiyānār*, Nacchinārkkinīyar says that as *pālai* does not occur independent of the other regions, the four gods of the four other *tinai*s pertain to *pālai* also. But other writers regard the sun-god as the deity of the *pālai* tract; yet others consider that the great mother Bhagavati, in one or other of her manifestations, is the regnant deity of the *pālai*.

Besides the five classes of the *Ahattinai* described above, there are two more, called *kaikkīḷi* and *perundinai*; but they are abnormal manifestations of love, the former being love for an immature girl incapable of returning the passion, and the other, being violent love-making. These have nothing to do with geographical causes and need not be further referred to here.

After *Aham*, love, the next subject of poetry is *puṇam*, war. That the operations of war depend upon the terrain on which they are conducted is so well known that it is unnecessary to expatiate on it at length. And they are divided into five according to five *tinai*s. They are *veṭchi*, *vañji*, *uḷṇai*, *tumbai* and *vāhai*, so named, like the five *tinai*s of *Aham*, after the flowers of the region, worn symbolically during the military operations of these regions. In old India, declaration of war invariably preceded actual fight and the old method of the declaration of war was the lifting of the enemy's cattle herded in the *kuṛiñji* tract and this was done at midnight. Hence *veṭchi* corresponds to *kuṛiñjittinai*. *Vañji* is the expedition into the enemy's territory, next to *kuṛiñji*, (i.e.), the *mullai* region, and it occurred in the rainy season. Hence it corresponds to the *mullaittinai*. *Uḷṇai* is the siege of the enemy's forts which were situated in the next region, *marudam*; as for the *marudattinai* to which it corresponds, the hour suited to it is the dawn. *Tumbai* is battle on the open plain. The sandy stretches of the *neydal* are appropriate to it; battles end in the afternoon and as the heroine weeps for the absence of her lover, so *tumbai* corresponds to the *neydal*. *Vāhai* corresponds to *pālai*, because it is associated with the parting of the soldiers from their friends when going to the wars and when, after success in wars, they resolve to give up the world and take to the life of the ascetic.

As *aham* possesses two supplementary *tinai*s, so *puṇam* has two additional sub-divisions, *kāñji*, and *pādāṇ*, dealing respectively with the transitoriness of the world and the one-sided life of the hero for fame. But these have no geographical affiliations and need not be discussed.

We thus see that the investigation of the geographic basis of the evolution of early human life and its culture, social and literary, is fruitful in results and it has led us to see that

- (1) the ancient Tamils were autochthones and progressed from the stage of primitive men through the nomad-hunter, pastoral and piscatorial stages of culture to the highest, the agricultural, manufacturing and commercial stage, owing to the play of geographical causes, without the help of foreign people;

(2) they developed forms of poetry and evolved a literary tradition of their own, also without foreign help;

(3) they reached to conceptions of gods peculiar to each region, and invented rites of worship without invoking the help of the fire-god, as their northern brethren did, rites which still are observed, notwithstanding the later developments of religion which are owing to the mixture of Northern cults with Southern ones.

Indian history, unlike the histories of other countries, where either the earlier chapters are wanting or the tale has to come to an abrupt end after a few centuries, is the story of man's continuous life and growth in this country, from the earliest times to the present day. The vast size of India and the great length of its history make it impossible that the story of India should be a continuity of dynastic history, too often mis-called political history; hence the continuity of Indian history consists in the unbrokenness of the evolution of the many branches of the people's culture—social, political, religious, literary and artistic, very little influenced as they are by their kings, however magnificent they were, for the time being. It has been my privilege to conduct investigation into the growth of national life from early times and I have hence thankfully accepted the opportunity for devoting my whole time to it which the Madras University has recently afforded me. I request that this essay may be regarded as the first fruits of my research as Reader in Indian History, in the University of Madras.

P. T. SRINIVASA IYENGAR,

Reader in Indian History.—Madras University.

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An ordinary meeting of the Association was held at 5-30 P. M. on 31st March, 1928 in the Presidency College with Mr. S.V. Ramamurthi, M. A., I. C. S., in the chair. Mr. P. T. Srinivasa Ayyangar, M. A., University Reader of Indian History, read a paper on "*The Geographical Basis of South Indian Culture.*"

The Chairman introduced the lecturer as his old master at Vizagapatam, and congratulated the University of Madras on having chosen such a brilliant and versatile scholar as the University Reader of Indian History. He was sure that in a short time he would show a good amount of original research to his credit.

He, then, pointed out how India, in common with China, had, while being cut off by land practically from the rest of the world, certain geographical relations and advantages, as a result of which the two countries evolved certain types of culture, which, while being distinct, were yet in some ways similar.

Mr. P. T. Srinivasa Ayyangar then read his paper on "*The Geographical Basis of South Indian Culture,*" printed above.

On the conclusion of the paper in the course of his remarks the Chairman observed that the audience wanted time to chew and digest the bold theories and the brilliant surmises of the lecturer, and were not therefore ready to enter into a discussion on the spot. If this paper was the first fruit of his new office, he had no doubt that in the next few months there would be very much more of such interesting material being made available for the public.

With a vote of thanks to the Chairman and the Lecturer the meeting came to a close.

Books and Journals Received.

Geography Through Map-Reading : No. 1 to 5.

(British Isles, Europe, British Empire, Africa and Asia)
Oxford University Press.

The Manurial Problem and its solution :

Bulletin No. 90 of the Madras Agricultural Department.
Macmillan's Tamil Atlas.

(Macmillan and Co., Madras.)

"மனிதனின் இருப்பிடம்" by C. Morrison, Macmillan and Co.,
1919, Price as. 8.

"Our Home" by C. Morrison. Macmillan and Co., Tamil
Edition, 1923, Price As. 8.

*Geography of Pudukkottai State including Civies and State
History*, By K. R. Venkataraman, Inspector of Schools,
Pudukkottai State. V. K. N. Rajan and Co., Narasingampet,
1928. Price As. 6.

The Preparatory Geography by Barton and Bunting. Books
1 to 5. (Clarendon Press, Oxford.)

Human Geography of India, Burma and Ceylon by C. Mor-
rison, (Telugu and Tamil Editions: Macmillan and Co.)

**Mosaic Disease of Sugar-cane* : Bulletin No. 92 of the Madras
Agricultural Department.

**Cultivation of Plantains on Wet Lands of the Godavari
Delta* :—Bulletin No. 93 of the Madras Agricultural Depart-
ment.

**The year-book for 1927* : Madras Agricultural Department.

*Some Geographical Factors in the Campaigns of Assaye and
Argaum* : by J. N. L. Baker (Reprint from the Army Muga-
zine).

Notes on the Natural Regions of India : by J. N. L. Baker.

Foundation Exercises in Geography : by E. G. R. Taylor
Parts 1 to 5. (George Philip and Son).

Travellers Round the World : (Geographical Readers in
Tamil) by Mrs. Devasahayam. Primer and Readers 1 to 5.

**A Soil Survey of the Malabar District* : Bulletin No. 91 of the
Madras Agricultural Department.

**Digest of Operations of the Department of Agriculture* :
Nos. 67 to 78 (January to December 1928).

**Rural India* :—Vol. II, No. 9 to Vol. IV, No. 1.

**South Indian Teacher* : Vol. I, No. 4 to Vol. II, No. 1.

**Mitteilungen Der Geographische Gessellschaft in Hamburg* :
Vol. XXXIX 1928.

**The Geographical Review of New York* : April, July, October,
1928, and January 1929.

**The Educational Review* : March 1928 to January 1929.

**Our Home Magazine*. April to December 1928.

**Quarterly Journal of the Andhra Historical Research Society* :
January and April 1928.

Teaching : September 1928. Vol. I, No. 1.

**Report of the Operations of the Department of Agriculture*,
1927—28.

**Geography* : Autumn 1928, No. 82.

**The Journal of the Mythic Society* : January 1929.

(Those marked * are exchanges.)

News and Notes.

With this number, the Journal completes its third year. There has been steady support for it from all quarters, but more must be forthcoming to enable it adequately to carry out its important functions. We hope to get such support more and more in the coming year.

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The event of the year in the Educational Progress of South India is the remodelling of the S. S. L. C. course. This has been long overdue and it has come at last. Vitally affecting the education of youths at their most impressionable age, the S. S. L. C. has an importance all its own. Intended by its sponsors to give initiative and freedom to Teachers and to provide for the varying needs of the several High Schools of South India by making it elastic and adaptable and by laying stress on the day-to-day school-work, it has grown into as wooden a system as that which it supplanted. The Dyarchical system of Internal Marks and External Marks has dismally failed. A calculus of Marks has been invented and an elaborate Machinery of Marks set up for evaluating the Marks of both sorts. So mechanical and cast-iron it has become that the vital elements of the Scheme have been trampled out. The ever-shifting Rules of Moderation promulgated, often, *after* the Examinations have been held and marks received, have only added to the confusion, dragging in the element of uncertainty. Marks  on the education at School. Instead of day-to-day learning, there is day-to-day examining. Marks have further brought in a scale of values for the several subjects studied: and but little attention is paid to whatever does not pay in Marks.

* * * * *

The new Scheme is expected to make provision for Geography on the compulsory side. A compulsory subject is one that must be studied by one and all, irrespective of special interests or tastes, or aptitudes. Only the fundamentals such as impart the right outlook, has to be included in the Syllabus. The Committee set up contains, we are glad to find, several active members of this Association. And provision has also been made for Geography being presented as one of the optional subjects.

M. SUBRAMANIAM, Editor.
K. S. Printing Works, Madras.

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