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## MISSION SOURCES AS OBJECTS OF INTERDISCIPLINARY RESEARCH. LINGUISTICS, MEDICINE AND OTHER NATURAL SCIENCES

### BRIEF SYNOPSIS

a) The nature of the problem: Germans came to Tamil Nadu from 1706 onwards, to spread the Protestant Christianity. While the other five European powers viz., the Dutch, the Portuguese, the Danes, the English and the French fought with each other, for commercial and political gains, the Germans, showed great interest into knowing the Tamil language, literature, tropical herbology and other natural sciences. Many aspects of the native medical heritage were a total surprise for those visiting Germans. For nearly 250 years, hundreds of Germans wrote down in their diaries all about tropical botany, ornithology, diseases and society and sent all those diaries to Germany. An attempt is made in this paper, to bring to new light, some of the German observations, which would serve as objects for conducting interdisciplinary research in linguistics, medicine and other natural sciences.

b) Earlier work on the subject: Based on the religious activities of the German Lutherans in Tamil Nadu, over the past 300 years, many books and articles were published from 1715 itself; but their study of Tamil language and investigations of the native medicine, geography and natural sciences, it is inferred, were not so deeply dealt with, which will unlock quite a number of interdisciplinary research areas mentioned above.

c) Types of source materials: For my Ph.D. research, I consulted in India and Germany, original source materials in the form of palmleaves, diaries, private letters, LELM (Leipzig Evangelical Lutheran Mission) station files, most of which are unpublished as yet, together with some rare books and articles of the 18th century. In this paper, some such source materials are quoted, their contents investigated and certain inferences are arrived at.

### 1. INTRODUCTION

#### 1.1 Abstract

Though German Indology dates back as early as 1652, with the coming of the German Jesuit Heinrich Roth (1620–1668) into India, one can very well observe that effective and significant German interest for Indology came to be realized only from 1706 A.D. The Germans came to Tamil Nadu, as missionaries from 1706, to



spread the Gospel among the Tamil people. Thus, Tamil Nadu served as the earliest labour field of Indo-German interactions. When two entirely different ethnical races, the visiting Germans and the native Tamils met each other, what were the resultant features in the mixed society? The Germans were struck with a total surprise to find that the natives were not at all barbarous, as wrongly presumed in Europe then. How such a wrong notion, about the Tamil civilization was spread and what Ziegenbalg wrote in his letter to Europe, may in this context, be perused:

“Die meisten Christen in Europa sind wohl der Meinung, dass die Malabarischen Heiden ein recht barbarisches Volk seien, – aber das kommt daher, dass die Europäer, welche unter den Malabaren gewesen sind, ihre Sprache nicht recht verstanden, noch ihre Bücher gelesen, sondern ihre Schlüsse nach dem äusserlichen Schein gemacht haben; gleichwie ich von mir selbst gestehen muss, dass ich mir anfangs, als ich zu diesen Heiden kam, nicht einbilden konnte, dass ihre Sprache eine recht regelmässige Sprache, oder ihr Leben ein bürgerlich eingerichtetes Menschen-Leben sei, sondern mir allerhand falsche Vorstellungen machte über ihr Thun und Lassen, als ob unter ihnen weder ein bürgerliches Gesetz noch ein Moralesetz sei – aber sobald ich mir nur einige Kenntniss von ihrer Sprache erworben hatte und mit ihnen von allerhand Dingen reden konnte, wurde ich nach und nach von jener Einbildung frei, und fing an eine bessere Meinung von ihnen zu fassen ; und als ich endlich vollkommen im Stande war, ihre eigenen Bücher zu lesen, so bemerkte ich, dass die Malabaren dieselben philosophischen Disciplinen, welche die Gelehrten in Europa behandeln, auch ganz ordentlich auf ihre Weise vortragen, und dass sie ein ordentlich geschriebenes Gesetz haben, worin alle theologische Gegenstände behandelt und bewiesen werden. Hierüber verwunderte ich mich recht sehr und bekam grosse Lust von ihrem Heidenthum und ihren eigenen Schriften gründlich unterrichtet zu werden.”<sup>1</sup>

Thus the Germans, who came here, with a wrong notion, that the Tamils were barbarous, not only changed their idea; but also wrote down in their diaries, all about the native Tamils and in short, what kinds of interactions resulted in various fields of linguistics, medicine and other natural sciences are all investigated in my recently published Ph.D. dissertation.<sup>2</sup>

## 1.2 Germans in Tamil Nadu

Now, we shall come to know as to why should at all, the Germans come to Tamil Nadu as early as the very beginning of the 18th century. The Danish king Frederick IV (1699–1730), who was besieged with the pietistic fervour, a sort of religious movement, which was spreading throughout Europe as “a powerful religious excitement,”<sup>3</sup> desired earnestly to spread the Protestant religion in foreign countries, especially among the Tamil people in Tranquebar on the Coromandel coast, which, since 1620, was ceded to the Danish Crown. But it is a strange surprise, to note, that

1 Fenger, John F.: Geschichte der Trankebarschen Mission, Grimma 1845, p. 22.

2 Mohanavelu, C.S.: German Tamilology, Madras 1993.

3 Beyreuther, Erich: Bartholomaeus Ziegenbalg, Madras 1956, p. 4.



this king, who opened the road to Evangelical Missionary activity<sup>4</sup> as far as the East Indies, could not enlist even a single Dane for being sent to the far off Tranquebar to spread the Gospel. The Danes did not like their King spending money on such religious commitment. They expressed their dissatisfaction thus:

“Indessen sieht man hieraus, dass es in Europa noch wohl so viel gibt im Christenthume zu begiessen, dass man, ehe solches geschehen, sich nicht in andere Theile der Welt zu pflanzen, zu begeben hätte.”<sup>5</sup>

But Germany came to the rescue of this king. Many Germans came up to serve as missionaries in the far off Tranquebar. Prof. Francke, a devoted Lutheran pastor in Halle, selected very faithful young Lutheran theologians, who were sent to Copenhagen, where they underwent rigorous religious tests, commissioned as missionaries and were sent to Tranquebar – all through the expenses of the Danish Crown. Hence these Germans were called “the Royal Danish missionaries.” For nearly 250 years from 1706, the Germans were sent to Tamil Nadu for the spread of the Gospel. Each of them was ordered to “handle there in Eastern India *nothing* besides the holy doctrine... and teach *nothing* besides it”<sup>6</sup> and to write down in their diaries and letters proposals to promote missionary activities in Tranquebar. But one may note, that almost all the Germans were fascinated by the multifaceted socio-economic, medical, cultural and other features of the Tamils and some Germans even set aside their missionary zeal and their unresistive curiosity impelled them to know more and more about the flora and fauna, medicines, diseases, etc. of the tropical Tamil Nadu which were unknown in Europe then.

### 1.3 Aim of this paper

At the outset, one may think that mission records might carry informations only about Church history, conversion data, proselytization activities of each missionary and other related ecclesiastical data. But one will soon come to know, that the German missionaries did not fully concentrate on their religious assignments. Different sets of Germans concentrated on different areas in Tamil Nadu, recorded in their diaries all about the native society and sent those letters and diaries to Germany. Not a single observation of the indigenous medicine, herbology, ornithology etc. seemed to have escaped the notice of those Germans. The express purpose of this paper, is to prove that these mission sources can, as well be used as objects, to conduct certain non-religious; but new interdisciplinary research in the areas of ethnohistory, ethnology, linguistics, tropical herbology, ethnomedicine and other natural sciences. This, I believe, will be a new method of interpreting mission sources, deviating from the conventional notion, that they are orthodox church history records, meant for perusal, mostly by the Lutheran pastors, theologians and Church historians.

4 Fenger, op. cit., p. 12.

5 Ibid., p. 269.

6 Fenger, John F.: History of the Tranquebar Mission, Madras 1906, p. 237.



#### 1.4 Source materials

For doctoral and also for the pre and post doctoral researches, in this research area of German Tamilology, thousands of original source materials, in the form of palmleaves, personal diaries and letters, travel accounts, grant notices, historical accounts, zoological and botanical accounts, meteorological observations, topographical notes etc., most of which are unpublished as yet, can be consulted and these are preserved in the Francken's archives in Halle/Saale. Prof. Arno Lehmann said about the research potential of the source materials in this archives thus:

"Let it be said in this connection that there are also many Oleis (Tamil word for palmleaves) written in the Tamil of that time which are not yet being worked at nor translated, but which are very revealing and useful for any Tamil scholar. These Oleis and heaps of letters and printed papers of those early missionaries are to be likened to a green pasture for any student of Tamil and the Tamiland of the 18th century and many a doctorate could be earned by working on that material."<sup>7</sup>

Further informations about the holdings of this archives can be had from my article.<sup>8</sup>

### 2. SUBJECT MATTER

#### 2.1 Linguistics

In this section, a few mission sources are investigated, to show that they can be used for conducting interdisciplinary research in linguistics. It may here be mentioned, that the pioneer German missionaries came here without any knowledge of either the Tamil language or of the Tamil civilization. For spreading the Gospel among the natives, they had to learn Tamil with proper pronunciation and application of grammar. Without any learning aids, such as German=Tamil or Latin=Tamil lexicon and grammar books, they were forced to learn Tamil hastily through Portuguese, which was the lingua franca in Tranquebar then. With the help of one or two native Tamils, the pioneers Ziegenbalg, Pluetschau and Gruendler learnt a rather coarse and colloquial Tamil. The second set of Germans made significant development in their Tamil learning. Especially C.T. Walther's erudition and scholarly approach of Tamil learning is remarkable. He observed the most significant feature of the Tamil language. He wrote in his *Observationes* thus: Uyir Pannirendum Udambu pathinettum (Soul Twelve Body Eighteen).<sup>9</sup>

That is, Tamil has two kinds of alphabets viz. the 12 vowels and the 18 consonants. The vowels were considered by Walther as the very soul and the consonants as the body. The vowels and consonants are like the soul and the body

7 Lehmann, Arno: German Tamil Studies, in: Wissenschaftliche Zeitschrift der Universität Halle, XVII, Halle 1968, H. 6, p. 141.

8 Mohanavelu, C.S.: A Brief Account of Francken's Foundations Archives, Halle/Saale, G.D.R., in: Indian Church History Review, Vol. XXII, No. 1, Bangalore June 1988, pp. 50ff.

9 Walthero, Christophorus Theodosius: Observationes Grammaticae, Tranquebar 1739.



of a person and both are inseparable, is the implied discovery. Now it remains to be investigated, whether any other Dravidian or for that matter, any other European language has this kind of rare significance.

A later German missionary Hermann Beythan specialized in the phonetics of Tamil words. Perhaps he might have thought that improper pronunciation of Tamil words, during proselytization among the natives, might not increase the number of the converts. There are three sets of Tamil mixed alphabets called *vallinam* (the hard set), *idei inam* (the middle set) and *mellinam* (the soft set). Beythan took pains to explain through a diagram to show how every set of Tamil alphabets can be properly pronounced.

Beythan also specialized into various levels of Tamil language. He wrote thus:

“Hier hat sich jene Hochsprache, jene Verfeinerung der dichterischen Sprache ausgebildet, deren Ergebnis man *centamil* ‘gutes Tamil’ oder *tellutamil* ‘gesiebtetes Tamil’ nennt, wofür man auch Hochtamil sagt. ... Es gibt auch eine Schichtung der Sprache nach Kasten. ‘Brahmin Tamil’ ist zu stark mit Sanskrit durchsetzt, wogegen es nicht an puristischen Bestrebungen gefehlt hat... Die Sprache der oberen Mittelklassen, der Pillai und Mudaliyar, kann als bestes Vorbild dienen.”<sup>10</sup>

Now it may be taken up by linguistic researchers, as to find out if any other Dravidian or for that matter, any other language enjoys this kind of classification, based on its purity and the communities, who spoke it. Also, in his book *Praktische Grammatik der Tamilsprache*, Beythan dealt with in detail, word formation, pronouns, verbs, adjectives, prepositions, numerals, conjunctions, interjections and also syntax. Now it is left to the linguistic researchers, to investigate as to find out, if any other missionary or any other European had tried his pen, in this kind of treatment of Tamil or any other language.

### 2.2.1 Medicine

It must here be noted that the Germans, prior to their coming to Tamil Nadu, did not at all know anything about tropical herbs and diseases. Ziegenbalg said<sup>11</sup> that on the snow-covered European soil, no vegetation was possible for several months in a year. This proves that tropical vegetation was quite unknown in Europe then. Another German missionary Baierlein observed thus:

“The greatest cold in this country (Tamil Nadu), however is scarcely as cool as the greatest heat in our land of Germany.”<sup>12</sup>

These remarks prove that the Europeans would not have experienced in their homecontinent, the tropical heat of Tamil Nadu. Consequently, they did not suffer from tropical diseases and hence they knew not about tropical herbology. But those Germans, who came here had to undergo this unavoidable tropical hot climate. Almost all the Germans lamented over this hot climate. Missionary Cnoll wrote thus:

10 Beythan Hermann: *Praktische Grammatik der Tamil Sprache*, Leipzig 1943, pp. 8f.

11 Caland, W. (Hrsg.): *Ziegenbalg's Malabarisches Heidenthum*, Amsterdam 1926, p. 220.

12 Baierlein, E.R.: *The Land of the Tamulians and its Missions*, Madras 1875, p. 15.



"Man kann sich Indien nicht als Europa vorstellen. Unsere Luft und constitutiones aeris sind gantz anders. Die pori nostri corporis sind des Tages, wegen der grossen Hitze, sehr geöffnet; des Abends aber kommt bisweilen eine kühle Luft."<sup>13</sup>

For Karl Graul, the tropical heat of Tamil Nadu was still more dreadful. "Dr. Karl Graul, dem ersten Direktor der Leipziger Mission, dem es war als ob die Hitze jeden Augenblick töten oder wahnsinnig machen müsste, und dem es in Madras zum Zusammenschmelzen und Zusammenbrechen war, als wenn man Glut atmete."<sup>14</sup>

This kind of entirely new climatic change effected many body constitutional changes in them. They came to suffer from tropical diseases such as dysentery, boils, rashes on the body etc. The Germans had brought with them no medicine for such kinds of diseases. The native Tamil doctors cured those suffering Germans. About the vast medical knowledge of the Tamils, Ziegenbalg observed thus:

"In dem Studio medico habens diese Heiden noch ziemlich weit gebracht. Die bücher, die sie hiervon geschrieben, sind unter allen ihren anderen Büchern die besten... Ihre medicinische bücher aber tractiren annoch solide Sachen, die sich mehrentheils in der That also verhalten... Fiehlet man diese Kent-Zeichen unter dem Mittelfinger, so hat man ein gewiszes Merkmahl, dasz es der Pulsz Biddum ist. Der Pulsz, Tscheschtum genant, gehet gantz langsam, als ein Hahn und als eine wilde Taube; wo man dieses Kent-Zeichen unter dem Zeigefinger fiehlet, so kan man wissen, dasz es der Pulsz Tscheschtum sey. Wenn sich der Pulsz Wadum und Biddum mit einander vereinigen, so läuft er sehr geschwind, als der Vogel Mudanadel genant, und als der pfau. Wenn der Pulsz Wadum und Tscheschtum sich zusammen fügen so hat man Husten im Halse, Wasser in der Nase, Schweisz auffm Leibe, und im Leibe Hitze."<sup>15</sup>

The early set of German missionaries were theologians. They could not understand much about the tropical vegetation. They simply wrote the wonderful curative properties of certain botanical specimens. In Germany, it was decided to send a set of botanical and medical experts to Tranquebar, so that they could do some technical analysis of the tropical herbs. Some of them were Schlegelmilch, David Martini, Benjamin Cnoll, Gottfried Klein. With the help of some native doctors, whom the German missionaries employed in their mission schools, they tried to understand the medicinal properties of certain herbs. It may be noted in this context, that there was a sort of spiritual paralysis, as these missionaries showed more interest for the study of tropical herbology and insect collection. They did set aside their very mission of spreading the Gospel. This is proved by the following remarks:

"... die Hauptsache gar liegen lassen und sich mehr um Curiosa bekümmern. ...die Missionare seien Schulmänner, alte Schulfüchse, und entbehren völlig des Glaubenseifers. Die Missionsarbeit ist nur eine Nebensache."<sup>16</sup>

13 Lehmann, Arno: Es begann in Tranquebar. Die Geschichte der ersten evangelischen Kirche in Indien, Berlin 1956, p. 180.

14 Ibid., p. 34; also cf. Lehmann, Arno (Hrsg.): Alte Briefe aus Indien. Unveröffentlichte Briefe von B. Ziegenbalg, Berlin 1957, p. 85.

15 Caland, op. cit., pp. 217f.

16 Lehmann, Es begann..., op. cit., p. 300.



Of all the Germans, it goes to the credit of Gruendler who spent 12 years for the collection of medical palmleaves bundles from the natives, translating them into German in the form of a treatise and sending them in a remarkable haste by the next available ship to Germany. The following passage of Arno Lehmann proves this.

“Fieng einer von uns an, einige medicinische Bücher in Malabarischer Sprache zu lesen, und da er glaubte, dass mit solcher Nachricht dieser Malabarischen Medicorum etwa auch einigen in Europa möchte gedienet seyn, auch diesem Wercke einiger Nutzen zuwachsen könnte; übersetzte er zugleich das vornehmste ins Teutsche, und brachte es in die Form eines Medicinischen Tractats, welcher in diesem Jahr mit den nechst abgehenden Schiffen nach Europa übersendet wird. ...Und einer der ersten Missionare tat noch mehr, ein besonderes: er studierte möglichst viele medizinische Bücher, d.h. Sammlungen von beschriebenen bzw. beritzten Palmblattstreifen, wie man sie im Archiv des Waisenhauses in reicher Fülle sehen kann. Und das tat er vor allem im Blick auf Menschen, die in Europa Interesse an der indischen Medizin nehmen könnten. Dieser Mann war der Magister Johann Ernst Gründler aus Weissensee in Thüringen.”<sup>17</sup>

The inferences that come out from even a casual study of this passage are 1) Gruendler must have been surprised at the knowledge of the natives in the medical field 2) he thought of his countrymen, whom he wished to be informed of these “ere-unknown” medical data 3) to enable them to know all these, he thoroughly read all the available medical palmleaves bundles 4) as the Germans could not read the Tamil scripts, especially those written on palmleaves, did Gruendler translate most important medical data 5) if we peruse the words which are bold-printed, then we come to infer that many of the palmleaves bundles, which he borrowed from the natives, were never returned to them at all. Such medical palmleaves bundles are said to be found in great abundance in Francken’s archives.

### 2.2.2 *Certain indigenous medical data*

The entire medical field of the native Tamils was a total surprise to the Germans. A certain page from Arno Lehmann’s article, in this context, may be investigated:

“In ihren Schulen und Internaten hatten sie zu tun mit dem Kinder-Husten >Kakkuwan< genannt, welcher ansteckend ist. Er komt sonderlich des Nachts mit heftiger Auswerfung des Schleims, oder auch wohl der kurtz vorher genossene Speisen: welches die armen Kinder so angreift, dass man meynt, sie werden vom Odem kommen... Man hat kein Mittel, diese Art Husten gäntzlich zu curiren; sondern die Kinder müssen sich damit qälen, bis drey Neumonde verflossen sind, da er sich von selbst leget. Doch können sie die Heftigkeit desselben einiger massen stillen mit etwas Reiss-Brantewein, wie auch mit gebratenem Fleisch von der Fledermauss, oder vom Crocodil. Eine andere Kinderkrankheit war die >Sogei<. Dergleichen Patienten schwellen dick auf, ihre Augen werden gantz blass, und ehe

17 Lehmann, Arno: Hallesche Mediziner und Medizinen am Anfang deutsch-indischer Beziehungen, in: Wissenschaftliche Zeitschrift der Martin Luther Universität Halle, V, H. 2, Halle Dez. 1955, p. 124.



man sichs öfter vermuthet, sind sie todt... In jener Zeit ist unendlich viel geschrieben worden, auch von Trankebar aus... Die Folgen eines Stiches sind höchst unerfreulich. Dieser Hundert-Fuss heisst auf Portugiesisch Centopea... Eine andere ganz kleine und schmale Art, so gross wie eine Heft-Nadel, heisst auf Malabarisch Sewi-puran, Ohren-Nassel, der in die Ohren kriecht: gleichwie gedachter Assel-Wurm an einigen Orten auch Ohren-Aatzel und Ohren-Mückel genannt wird.”<sup>18</sup>

Such was the vast knowledge of the Tamils, 300 years ago. How many kinds of diseases were known to them? A diary dated 20th February, 1726 tells that a Tamil doctor knew of as many as 4448 diseases.<sup>19</sup> They had authored many medical books too. A few important of them are *Wagada Tschuwari*, and *Udal Kuru Dadduvam* about which, Ziegenbalg himself mentions thus:

“*Wagada Tschuwari*, ein medicinisches Buch, handelt von dem Ursprung der Krankheiten und von dem Kennzeichen einer jedweden Krankheit von dem Fühlen des Pulses und andern dergleichen medicinischen Lehrthümern...”

“*Udelkurudadduwam*, ein sehr artiges philosophisches Büchlein von den Elementen und fünf Sinnen, und von alle demjenigen, was mit den Elementen und fünf Sinnen einige Verwandtniss hat, darinnen sind ihre Principia physica und ethica enthalten gleichsam wie in einer Sciagraphia. Ich hatte in willens solches Büchlein ins Deutsche zu vertiren, konnte aber alle philosophische Terminos nicht recht verstehen, und hatte auch keinen Philosophum zur Hand, den ich consulieren können...”<sup>20</sup>

Now, it is left to the ethnomedical researchers to dig out from Francken’s archives all these medical data to find out what those “similar medical teachings are.” (dergleichen medicinischen Lehrthümern).

Now I wish to project a slide, presumably found in Gruendler’s *Malabar Medicus*. Though there is some difficulty in deciphering the hand-written German words, the Tamil words, transliterated in German, can be easily read. This page contains four different notes on how to prepare four kinds of medicines for the corresponding diseases. It is like a prescription of a doctor. The ingredients used to make the first medicine are Nellennai (Sesamum Indicum-L) of 1/4 measure, Vasambu (*Acorus Calamus*) and Ulli i.e. small onions. The second medicine was prepared with six ingredients Erukkei Ilei (*Calotropis Gigantia*), Notschi Ilei (*Vitex Nugundo*), Agathi Ilei (*Sesbania Grandiflora*), Nelliweli Ilei (*Philanthus Embelica*), Ingschi (*Zingiber officinalis*) and one measure of Nellennei. The third medicine was prepared with the following five herbs: Induppu, Schukku (*Zingiber Officinalis*), Madalai uppu, Murunga pattei (*Moringa Oleifera*) and Saranei. The fourth medicine was prepared with the two herbs Pikkum wirei and Nellennei. The express purpose of my bringing out this medical note is to substantiate that the Germans showed a deep interest for the Tamil medical heritage and also to request this Centre to take up the task of unearthing all such medical details to find out from them as to how many kinds of medicines can still be made and administered to cure

18 Ibid., p. 121.

19 Ibid., p. 117.

20 Germann, W.: Ziegenbalgs Bibliotheca Malabarica, in: Missionsnachrichten der Ostindischen Missionsanstalt zu Halle, XXXII, H. 1 und 2, Halle 1880, p. 91, p. 84.



corresponding diseases. The department of ethno-medicine may take up this project to bring out the Tamilo-German ethno-medical interactions during the past 300 years.

## 2.3. Other natural sciences

### 2.3.1 Geography

The German way of learning was not unidirectional. While they learnt in Tamil Nadu tropical medicine, they interacted with the natives in certain areas like geography, astronomy, mathematics, mountaineering, etc. The geographical knowledge of the native Tamils, 300 years ago, was confined to that of Tamil Nadu and a few neighbouring tropical countries only. A native Tamil, 300 years ago, knew not what an ice block was. Water becoming a solid, was an unknown phenomenon to him. It was certainly the pioneer Ziegenbalg, who explained to the natives, to their unbelievable surprise, about the sub-zero climate of Europe. Later, it goes to the credit of missionary K.T.E. Rhenius, to have informed the Tamils on world geography and climate, more technically through his book *Bhoomi Sasthirum* (World Geography) published in Madras in 1832 in Tamil language. Rhenius gave a long title, *Earth Study, explaining the nature of this earth, its continents, oceans, countries, islands and the history of these country peoples*. "It was written", says Rhenius,<sup>21</sup> "for the purpose of creating knowledge of the Tamils." Thus the efforts and pains, which the Germans had taken to educate the Tamils, about world geography, were quite significant and praiseworthy.

### 2.3.2 Arithmetics

Arithmetics was another area of Tamilo-German interaction. Ziegenbalg himself mentions<sup>22</sup> that he had written "a book on Malabar Arithmetics" in Tamil language, which was printed in 1863 as a 31 pages book entitled *Tamil first book and mental arithmetics*, now found in Francken's archives. On algebra and geometry also, books were written in Tamil for the native school children. It should have been indeed a rare privilege to those native children, to have been taught by the Germans in Tamil language, in these special branches of mathematics. At this stage, a question, as to what were the concepts of the Tamils in the field of mathematics, may arise. The ancient Tamils knew about arithmetics, weights and measures and also calendar system of almanac calculations. The proof for this claim can now be found in the LELM library in Leipzig, where, among other ancient Tamil books, a rare Tamil palmleaves book is preserved. *Yenn Chuvadi* is the title of this book.<sup>23</sup>

21 Rhenius, K.T.E.: World Geography, Madras 1832, Title page.

22 Ziegenbalg, Bartholomäus/Gruendler, Johannes Ernestus: A Letter to the Reverend Mr. Geo Lewis, London 1715, p. 5.

23 Graul, Karl: Notizen, Correspondenzen und Vermischtes. Die tamulische Bibliothek der evan-



*Yenn* in Tamil means numbers and *Chuvadi* means palmleaves book. Also from the saying of the ancient Tamil poetess Auweiyar, we understand that the study of number science was known to the ancient Tamil people. She said: Ennum Ezhuthum Kann Ena Thagum (Numbers and Alphabets are (important) like the eyes). From this, one can infer that the ancient Tamils were well-informed about mathematics. But unfortunately, the coastal native Tamil children, whom the Germans taught geography and arithmetics, did not possess this knowledge, because, for decades and centuries, in Tamil Nadu, education was a rare privilege of the upper class people only. Undoubtedly, it goes to the credit of these missionaries to have given education freely to the down-trodden.

### 2.3.3 Botany and mountaineering

The German interest to learn tropical botany started right from Ziegenbalg. Following the five medical missionaries, German botanists also came here as missionaries. Of them, Rottler and Schmidt are noteworthy. About Rottler's interest for tropical botany, we have Leifer's remark for perusal:

"Inzwischen war er aber fast noch als Botaniker bekannt geworden. Er schickte Proben südindischer Fauna an europäische Institute und Universitäten. Verschiedene alte Sammlungen in Mittel- und Westeuropa sind ursprünglich seiner Initiative zu danken."<sup>24</sup>

Rottler created an unending interest among Europeans for the tropical Indian botany. About the botanical studies of Bernhardt Schmidt, especially of the cryptogamous plants, we have Leifer's note to peruse:

"Ähnlich wie Johann Peter Rottler verband sich auch bei Dr. Bernhardt Schmidt missionarisches Wirken mit der Liebe zu Botanik und Philologie. Schmidt beobachtete besonders kryptogame Pflanzen..."<sup>25</sup>

Besides botany and medicine, the Tamils knew of mountaineering also. The book entitled *Malei Agaradhi*, taken away by Graul in 1853, is still preserved in the LELM library.<sup>26</sup> *Malei* in Tamil means mountain and *agaradhi* means lexicon. Centuries before the arrival of the Germans, Tamil people had known about herbs, mountains and the tropical flora and fauna.

## 3. CONCLUSION

It is common observation that sun's white light is a composite one. It can be split into its constituent seven colours viz. violet, indigo, blue, green, yellow, orange and red. So also can German Indology be split into its various branches of Indology.

gelisch-lutherischen Missionsanstalt zu Leipzig, in: Zeitschrift der Morgenländischen Gesellschaft, Bd. VII, Leipzig 1853, p. 566.

24 Leifer, Walther: Indien und die Deutschen, Tübingen 1969, pp. 60f.

25 Ibid., pp. 61f.

26 Graul, op. cit., p. 560.



Detailed researches will reveal, that German Indology can be split into German Tamilology, German Telugology, German Malayalamology, German Sanscritology and so on. The German effect in these branches are already prevalent and in certain branches, this effect, or better-said, the German participation and mutual interactions had been more conspicuous. The most influenzed field of German Indology is the German Tamilology. That is, the participation in and contributions to the language, literature and culture of the people of Tamil Nadu, by the Germans are the most prominent aspects than any of their similar activities in other Indian language areas. But later on, there had been a loss of balance on the German side, for, the later German Indologists, as Prof. Arno Lehmann rightly pointed out<sup>27</sup>, thought that Indian literature meant nothing but Sanscrit literature and unfortunately shifted their fields of interest to north India, the Buddhist India, the Vedic India or the so-called Sanscrit India. I appeal to the present-day German Indologists, to cast their academic attention more to Tamilology and to take up the thread from where their diligent ancestors left in Tamil Nadu 300 years ago! Multifarious researches in ethno-history, ethnology, linguistics, ethno-medicine, tropical herbology and other natural sciences can be conducted with these mission sources. This Centre for Modern Oriental Studies is requested to come forward to establish the department of German Tamilology, for which I have prepared a draft proposal, outlining the definition, scope and functions.

I may take this opportunity to thank the DAAD, Francken's archives, the organizers of this seminar and Professors Gensichen and Rothermund, without whose continued assistance and encouragement, to be precise, my visit to Germany and in turn this research, would not at all have become possible.

27 Lehmann, German Tamil Studies, op. cit., p. 143.