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Philippine education prior to Magellan.

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EDUCATION IN THE PHILIPPINE ISLANDS PRIOR TO THE DISCOVERY OF THESE ISLANDS BY MAGELLAN (MAGALLANES).

In studying the culture of any people we learn that no group has been absolutely independent of influences from other people. No man indeed can say that he has attained anything of value absolutely by himself; an individual must give credit to the contributions of other men, nations and races. Respectfully submitted to the faculty of the University of Louisville, Kentucky, as part of the requirements for the degree of Master of Arts in Education.

MORRIS UBERTA LIVELY, A.B.

Which is respectfully submitted to the faculty of the University of Louisville, Kentucky, as an study of part of the requirements for the degree of Master of Arts in Education.

We are also influenced by the oriental countries. Students of the philosophy of religion have lately turned their attention toward the great religions such as Hinduism, Buddhism, Jainism, Brahmanism, Shintoism and others with a view to finding the fundamental truths of the great schools of thought and to find the reason why they have influenced our people as spiritual food for centuries.

Especially in this true of the Philippine Islands. The Filipinos are a people within close sailing distance of their neighbors, Chinese, Japanese, Japanese and Mongolians, and each of these races has made its contribution to Philippine culture. Again, elements appear today...
In studying the culture of any people we learn that no group has been absolutely independent of influences from other people. No man indeed can say that he has attained anything of value absolutely by himself; an individual must give credit to the contributions of other men, nations and races of people past and present. So must a nation glean its culture from that of other people. The Roman Empire is a splendid example of this gleaning of culture. Their culture came from contributions made by the Greeks, the Jews and from the people of northern Africa as well as an infiltration of occidental culture from the orient by the way of Constantinople. Closer at hand we can study our present day culture in the United States. Here we see the contributions that have been made by the European nations in matters of science, theology, art, music and other cultural subjects. We are also influenced by the oriental countries. Students of the philosophy of religion have lately turned their attention toward the great religions of the east such as Krishna, Buddhism, Jainism, Brahism, Shintoism and others with a view to finding the fundamental truths of these schools of thought and to find the reason why they have furnished the people with spiritual food for centuries.

Especially is this true of the Philippine Islands. The Filipinos are a people within close sailing distance of their neighbors, Chinese, Japanese, Javanese and Borneans, and each of these races has made its contribution to Philippine culture. Again, elements appear from
a farther distance, and prior to Magellan we shall see that the Philippine education especially was influenced by India and Arabia.

Canon Rawlinson in his Ancient History lays down a principle that all writers on historical subjects should take cognizance of, and that is the presentation of clear and full geographical descriptions of the country about which he is writing before he attempts the real work of writing the history of that people. His precept must be followed in writing the history of these islands. A study of a map will show that the Philippines are many small islands widely enough separated that each island shows its own culture to a great extent. Thru all these islands, however, a similar culture which was brought about by trade, war and intermarriage can also be traced.

Dr. Horn in his 'The Philosophy of Education', sums up the work by saying in brief that "Education is the constant adjustment of the biological, physical, mental, moral, social, and spiritual human being to his Creator". This thesis can be taken as a wonderful philosophy of education. Today we virtually see education from one of two viewpoints, the utilitarian, whereby man looks upon an education as merely a utility for assisting him in the acquirement of a certain social position, or wealth, the Altruistic whereby man realizes that his education must be used to better the condition of his fellow man. Neither of these conceptions can be said to be found in the education of the primitive Filipinos: as we shall see later, theirs was an education mainly to meet their immediate needs, to supply food, to conquer an enemy, to propitiate a wrathful god, to overcome taboo and otherwise adjust them to their environment.

Canon Rawlinson-Ancient History, the World's Greatest Classic Collection


Again, the writer upon the subject of education among a primitive people has a task on his hands in setting forth exactly what can strictly be termed 'education'. When he says that the teaching of a certain custom, e.g. tribal tattooing, teeth filing, ancestor worship, games by children, eschatological beliefs, tribal architecture, head hunting and other primitive practice are 'education'; the Sociologist may say that these are the more's of the people; the Mythologist may say that these customs come entirely within his realm; and the student of religion may assert that these practices are influenced by the religious beliefs of the people. Mythology, religion and folk lore form such an important part of the education of any primitive people that they must be accepted as an integral part of the education proper. History of Education bears out this assertion. The history of the education of primitive and medieval people shows that their main education was along religious lines and in the legends and tradition of the group. Hence we who look for education alone must admit that these studies must be given their due recognition and that no exact lines of demarcation can be drawn which set off education in one circle and mores in another and religion in another and so on, but we must all admit that these studies form a series of concentric circles and that each is closely allied with the other.

THE GEOGRAPHY OF THE PHILIPPINE ISLANDS.

All history rightfully takes full cognizance of geography, for the two go hand in hand; because of this fact we are safe in saying that the future history of any nation can be partially foretold by its geography and physical features. The education of any people, especially that of primitive man, fits itself to natural surroundings, to survive.
against its foes and the elements of nature, and to provide food and clothing. This is well shown in a study of education in the Philippine Islands. The inhabitants of Mindanao were expert navigators and builders of water craft at the coming of Magellan. The Igorrotes of the mountain regions of Luzon have from the earliest times built systems of terraces on these mountains at which western civilization today marvels. The people from Manila were traders and from their intercourse with foreigners had built up a culture, including a written language and a literature.

A close study of a map will show that this archipelago lies about five hundred miles off the Southeast coast of Asia between 4° 40' and 21° 10' north latitude and between 116° 40' and 126° 34' east longitude. These islands are bounded on the north and west by the China Sea, on the east by the Pacific Ocean, and on the south by the Celebes Sea and the coastal waters of Borneo. Even the principal islands are not of any great size. Luzon, the main island of the archipelago, contains only 40,969 square miles, while Mindanao, the second island in importance, contains only 36,292 square miles.

While the principal islands of this archipelago have been named, there are some twenty others having an area ranging from 106 to 682 square miles which are practically barren rocky masses; besides there are 2775 islands which contain one square mile or less (mere rocks projecting out of the ocean). The total number of islands is estimated at some 3000.

As to Physiography, a close study of the relief of these islands will show that the interior of each is covered with great mountain systems having a general direction of north to south, these mountains in some instances being of great height, ranging from 4000 to 10,000 feet above the level of the sea. Many of these mountains are volcanoes which
erupt from time to time, such as Mount Banajao in southern Luzon (altitude 7382 feet) and Mount Apo in Mindanao (now extinct) which rises to a height of 10,312 feet. Submarine mountain ranges connect not only the various islands within the archipelago, but also connect the Philippines with Borneo and the Celebes. These last named submarine mountain ranges add another feature which we cannot afford to overlook while we are studying the geography of these islands, namely numerous channels, straits, and other water courses.

The geographical location determines the climate and hence affects the education of their inhabitants by separating each tribe from its neighbors wholly within the tropics; consequently they have only the two seasons, the rainy and the dry. However, we must not assume that the Philippines are tropically hot in all sections, for it must be remembered that the mountains of the various islands afford a protection from the tropical sun.

These features when considered have all influenced the education of these people. The Filipinos are not a single tribe, but a number of scattered tribes, each having its own dialects, customs, habits and culture. As would naturally be supposed, we find that those living nearest to the coast were the most civilized and show the effect of intruding civilizations more than those of the interior and the mountain fastnesses.

As is their coming to their present surroundings and inhabiting these islands we have no written records. Most students of ethnology and
THE PEOPLE OF THE PHILIPPINE ISLANDS.

The Filipinos may be roughly classified into two main groups, namely, the NEGRITOEES and MALAYANS. All writers on the Philippine Islands agree that the Negritoos were the aborigines of these islands. No one, however, has been able to determine where they came from. He can conjecture that they came from Africa, Borneo and other places, but no proof or theory has he been able to establish their origin. Antonio de Morga in his work, *Sucesos de Las Islas Filipinas* speaks of these people as having black skin and kinky-hair and residing in trees, and possessing no culture worthy of note. Further, Landor, Worcester and other writers of the 19th and 20th centuries refer to them in the same way. Hence, we can infer that they are practically impervious to civilization. Even today in the interior of these islands we find them in their original state of barbarity, caring nothing for, and very likely knowing nothing of the cultured Spaniard, American and Malay. They have no records by which they can be identified racially and no legends as to their origin. They are the great puzzle of the Philippine Islands. The supposition is that they were the aborigines and that, with the coming of the Malay, they were pushed back until they finally took up their domain in the forests.

The other great group of the Filipinos is the Malay race. As to their coming to their present surroundings and inhabiting these islands we have no written records. Most students of ethnology and de Morga, Antonio - *Sucesos de Las Islas Filipinas* - Mexico - 1600 - translated by Blair and Robertson - Their Volume XVI, Pages 111-13.


anthropology, however, believe that the Malay Peninsula was the stepping stone from India and Asia for these people to reach the present geographical and political subdivision known as the Philippine Islands.

De Morga, *Pigafetta,* and other early writers speak of their culture, their alphabets, system of writing, and other arts, all of which will be discussed in another part of this thesis.

However, the word 'Malay' is a very broad term when applied to these people and really means nothing more than common ancestry. In the days of De Morga we find them divided into tribes influenced by geography and other causes, just as we find them today; each with its own peculiar dialect; some with an advanced culture of writing, for example, the Tagals; some with a sea faring knowledge, for example the tribes on the coasts of Mindanao; others with fairly advanced knowledge of engineering, agriculture, and fertilization, as in the case of Iggorotes of northern Luzon, and still others with no cultivation of any kind, as the Negritos. Each tribe has its own peculiar beliefs pertaining to eschatology, mana, taboo, marriage relations and other religious and social customs. That the Malay people of the Philippine Islands are related to the other Malay people of the Pacific Islands is shown from their similarities of language, habits and physical measurements.

Cavagliero Antonio Pigafetta Account of the Philippine Islands 1519-1520 in his Voyage Around The World.

Pinkerton: General Collection of Travel. 1808 Volume II, Pages 288-420.

Marga, Antonio de - Sucesos Islas Filipinos - Hakluyt Society, London, 1868 - Chapter VIII.
A CLASSIFICATION OF THE PHILIPPINE TRIBES.

This abstract of the tribes of the Philippines which have been classified to date is made from a report made to Professor Ferdinand Blumentritt as shown at page No. 527 ff "Annual Report of the Smithsonian Institute, 1899".

The following is a key to the abbreviations used in this abstract:*

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*Dr. Blumentritt does not use this abbreviation.
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While Professor B. Ementritt gives the origin of our Igorotese as blank the writer of this thesis infers from study of other writers on the Philippines that these people are of Malay origin—albeit with a possibility of some Japanese blood. Other remarks should be added their great engineering and agricultural knowledge which is shown by their famous rice terraces in the mountains of Luzon and the system of fertilizing their crops by means of water run thru these ditches which has passed over animal waste.
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<td>Tribes once civilized who have fled to mountains general name for all such Heathen</td>
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<td>--</td>
<td>C</td>
<td>--</td>
<td>--</td>
<td>Span name for Chinese early settlers</td>
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**NOTE:** IN RE MOROS—This is Spanish for Moors and applied by Spaniards to Mohammedans. Their language and alphabet a great mixture of Arabic as will be shown later q.v.
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<td>Mi</td>
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<td>In the beginning there lived a being so large that he could not be compared with any known thing. He was a giant when he was a child, which were his home, he occupied all of the space. He rubbed himself with his hands on his skin and the dead skin which he rubbed off his body he placed on one side in a heap, and by and by his pile became so large that he himself did not know how to do with it. Finally Hamu decided to make the earth; so he let very hard and very hard to get the dog skin into shape and when it was finished he determined to make the beings like himself, the smaller to live on it, the larger to live on it.</td>
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Sawyer, Frederick H., *THE INHABITANTS OF THE PHILIPPINES*
Charles Scriber's Sons, New York, 1900, is an excellent work to consult further relative to the customs and habits of the various wild tribes of the Philippine Islands. Part I Chapters XXIII to XXX inclusive give a full description of all tribes of Luzon and adjacent islands. Part II, Chapters XXXII to XXXIV inclusive, The Visayas and Palawan. Part III, Chapters XXXV to XL inclusive Mindanao including the Basilan. Part IV, Chapter XXLI The Aboriginal Inhabitants, in which chapter he treats in full the Aetas or Negritos (Spanish for 'Little Negroes').
SPECIMENS OF PHILIPPINE FOLK TALES.
(Copied in full from a compilation and annotation of these tales as made by Mrs. Mabel Cook Cole in her book - Philippine Folk Tales. She spent four years among the wild tribes of these islands. Her notes are used here as footnotes.)

THE STORY OF THE CREATION Bilaan, Mindanao.

In the beginning there lived a being so large that he cannot be compared with any known thing. His name was Melu, and when he sat on the clouds, which were his home, he occupied all of the space above. His teeth were pure gold, and because he was very cleanly and continually rubbed himself with his hands his skin became pure white. The dead skin which he rubbed off his body he placed on one side in a pile, and by and by this pile became so large that he was annoyed and set himself to consider what he could do with it.

Finally Melu decided to make the earth; so he worked very hard in putting the dead skin into shape, and when it was finished he was so pleased with it that he determined to make two beings like himself, tho smaller, to live on it.

Taking the remnants of the material left after making the earth, he fashioned two men, but just as they were all finished except their noses, Tau Tana from the earth appeared and wanted to help him. Melu did not wish any assistance and a great argument ensued. Tau Tana finally won his point and made the noses which he placed on the people upside down. When all was finished Melu and Tau Tana whipped the
forms until they moved. Then Melu went to his home above the clouds and Tau Tana returned to his place below the earth.

All went well until one day a great rain came, and the people on the earth nearly drowned from the water, which ran off their heads into their noses. Melu, from his place on the clouds, saw their danger and he came quickly to the earth and saved their lives by turning their noses the other side up.

The people were very grateful to him, and promised to do anything he should ask of them. Before he left for the sky, they told him they were very unhappy living on the earth all alone, so he told them to save all of the hair from their heads and the dry skin from their bodies and the next time he came he would make them some companions. And in this way there came to be many people upon the earth.

The boy was greatly interested in seeing the jar grow larger, more beautiful, and smoother with each stroke, and he stood still for some time. Suddenly the moon looked up and saw him watching her. Instantly she struck him with her paddle, cutting off his head.

But the sun was not near, but he knew as soon as the moon had cut off his son's head, and hurrying to the spot he put the boy's head back on and he was alive again.

The Bilaan were but little influenced by the Spanish occupation and the striking similarity herein of the account of the creation of man as recorded in the book of man is credited to Mohammedan influence. And because you did this ever after on the earth people will cut off each other's heads.

A similar story is also told in Borneo.
HOW THE FIRST HEAD WAS TAKEN. IGORROTE. Luzon.

One day the moon, who was a woman named Kabigat, sat out in the yard making a large copper pot. The copper was still soft and pliable like clay and the woman squatted on the ground with the heavy pot against her knees while she patted and shaped it.

Now while she was working a son of Chal-Chal, the sun, came by and stopped to watch her mould the form. Against the inside of the jar she pressed a stone, while on the outside with a wooden paddle dripping with water she pounded and slapped until she had worked down the bulges and formed a smooth surface.

The boy was greatly interested in seeing the jar grow larger, more beautiful, and smoother with each stroke, and he stood still for some time. Suddenly the moon looked up and saw him watching her. Instantly she struck him with her paddle, cutting off his head.

Now the sun was not near, but he knew as soon as the moon had cut off his son's head, and hurrying to the spot he put the boy's head back on and he was alive again.

Then said the sun to the moon, "You cut off my son's head, and because you did this ever after on the earth people will cut off each others' heads."

The Igorrotes claim to have taken human heads ever since Lumawig lived on earth and taught them to go to war.
This so frightened the children that they fled in all directions, seeking hidden rooms in the house—some concealed themselves in the walls, some ran outside, while others hid in the fireplace, and several floated away. When the world first began there was no land, but only the sea and the sky, and between them was a kite.* One day the bird, which had no place to light, grew tired of flying about, so she stirred up the sea until it threw its waters against the sky. The sky, in order to restrain the sea, showered upon it many islands, until it could no longer rise, but ran back and forth. Then the sky ordered the kite to light on one of the islands to build her nest, and to leave the sea and the sky in peace.

Now at this time the land and the sea breeze were married, and they had a child which was a bamboo. One day when this bamboo was floating about on the water, it struck the feet of the kite which was on the beach. The bird, angry that anything should strike it, pecked at the bamboo, and out of one section came a man and from the other a woman.

Then the earthquake called on all of the birds and fish to see what should be done with these two, and it was decided that they should marry. Many children were born to the couple, and from them came all of the different races of people.

After awhile the parents grew very tired of having so many idle and useless children around and they wished to be rid of them, but they knew no place to send them. Time went on and the children became so numerous that the parents enjoyed no peace. One day, in desperation, the father seized a stick and began beating them on all sides.

*Kite: A bird something like a hawk.
This so frightened the children that they fled in all directions, seeking hidden rooms in the house--some concealed themselves in the walls, some ran outside, while others hid in the fireplace, and several fled to the sea.

Now it happened that those who went into the hidden rooms of the house later became the chiefs of the island, and those who concealed themselves in the walls became slaves. Those who ran outside were free men; and those who hid in the fireplace became negroes; while those who fled to the sea were gone many years, and when their children came back they were the white people.
THE SUN AND THE MOON.

Visayan.

Once upon a time the Sun and the Moon were married, and they had many children who were the stars. The Sun was very fond of his children, but when he tried to embrace any of them he was so hot that he burned them up. This made the Moon so angry that finally she forbade him to touch any of them again, and he was greatly grieved.

One day the Moon went down to the spring to do some washing, and when she left she told the Sun that he must not touch any of their children in her absence. When she returned, however, she found that he had disobeyed her, and several of the children had perished.

She was very angry and picked up a banana tree to strike him, whereupon he was very angry and threw sand in her face, and to this day you can see the dark marks on the face of the Moon.

Then the Sun started to chase her, and they have been going ever since. Sometimes he gets so near that he almost catches her, but she escapes, and by and by she is far ahead again.

Such stories as this have been handed down among the Visayan from father to son.
One day when a monkey was climbing a tree in a forest in which he lived, he ran a thorn into his tail. Try as he would he could not get it out, so he went to a barber in the town and said:

"Friend Barber, I have a thorn in the end of my tail. Pull it out, and I will pay you well".

The barber tried to pull the thorn out with his razor, but in doing so he cut off the end of the tail. The monkey was very angry and cried:

"Barber, Barber, give me back my tail or give me your razor!"

The barber could not put back the end of the monkey's tail, so he gave him the razor.

On the way home the monkey met an old woman who was cutting wood for fuel, and he said to her:

"Grandmother, Grandmother, that is very hard, use this razor and then it will cut easily."

The old woman was very pleased and began to cut with the razor, but before she had used it long it broke. Then the monkey cried:

"Grandmother, Grandmother, you have broken my razor! You must get me a new one or else give me all the firewood".

The old woman could not get him a new razor so she gave him the firewood.

The monkey took the wood and was going back to town to sell it, when he saw a woman sitting beside the road making cakes.
"Grandmother, Grandmother," said he, "your wood is most gone; take this of mine and bake more cakes".

The woman took the wood and thanked him for his kindness, but when the last stick was burned the monkey cried out:

"Grandmother, Grandmother, you have burned up all my wood! Now you must give me all your cakes to pay for it."

The old woman could not cut more dry wood at once so she gave him all the cakes.

The monkey took the cakes and started for the town, but on the way he met a dog which bit him so that he died, and the dog ate all the cakes.

Writer's note: Although Mrs. Cole makes no comment upon this tale, it seems to me that it originated during the Spanish regime, for it wasn't until then that razors were in common use.
HOW THE TINGUIAN LEARNED TO PLANT.

In the very olden times the Tinguian did not know how to plant and harvest as they do now. For food they had only the things that grow in the forests, and fish from the streams. Neither did they know how to cure people who became ill or were injured by evil spirits, and many died who might otherwise have lived.

Then Kadaklan, the Great Spirit who lives in the sky, saw that the people were often hungry and sick, and he sent one of his servants, Kaboniyan, to the earth to teach them many things, and it happened this way:

Dayapan, a woman who lived in Caalang, had been sick for seven years. One day she went to the spring to bathe, and there entered her body a spirit who had rice and sugar cane with him, and he said to her:

"Dayapan, take these to your home and plant them in the ground, and after awhile they will grow large enough to reap. Then when they are ripe, build a granary to put the rice in until you shall need it, and a sugar press to crush the cane. And when these are finished, make the ceremony Sayung, and you will be well".

Dayapan was filled with wonder at these strange things, but she took the rice and the sugar cane and went home as she was commanded. While she was trying to plant them in the ground the spirit again entered her body and showed her just what to do. Since then the Tinguian have planted crops every year, and as they do as Kaboniyan taught the woman they have plenty to eat.
When Dayapan had reaped the first rice and cane, she began to make the ceremony sayung, and the spirit came again and directed her. And when it was finished and she was cured, he told her to take a dog and a cock and go to bathe in the river as a sign that the ceremony was finished. So she went to river and tied the dog and the cock near the water, but while she was bathing the dog ate the cock.

Dayapan wept bitterly at this and waited a long time for Kaboniyan, and when at last he came, he said:

"If the dog had not killed the cock no person would die when you make this ceremony; but this is a sign, and now some will die and some will get well."

Dayapan called all the people together and told them the things that the spirit had taught her; and they could see that she had been made well. After that, when people became ill they called Dayapan to treat them. And it was as the spirit had said; some died and others were made well.

Mrs. Cole's note: This tale is of special importance to the Tinguian since it explains how they learned two of the most important things of their present life - to plant and to cure the sick. It also shows how death came into the world.
CONTRIBUTING FACTORS TO PHILIPPINE EDUCATION.*

As was posited earlier in this thesis, NO RACE OF PEOPLE, NOR ANY INDIVIDUAL, CAN DRAW A CIRCLE AROUND ITS CULTURE AND SAY WITH A CERTAINTY, "THIS ELEMENT IS OUR OWN CREATION", but the culture of any people, like that of an individual, is a series of concentric circles, which, when examined closely, show the contributions of other people. So it was in the Philippine Islands prior to the discovery of these islands by Magellan. A study of their education and customs will show that contributions have been made by many different people; in fact we may say that their civilization shows strata of culture from different races and ages. However, a great deal of our work in this field is a conjecture and is found out only by deductive reasoning, for we have no written records of their life prior to Magellan, other than those records made by the Chinese. From the language, customs, religious beliefs of the Filipinos we shall see that the Hindu, Japanese, Chinese, Arabs, and to some extent the Aztec Indians from Mexico, as well as the natives from Borneo and other neighboring islands have made their contributions to Philippine education and culture.*

Kroeber - "The People of the Philippine Islands" - American Museum of Natural History - New York, 1919, - is a work well worth consulting for reference to outside contributions to Philippine culture.
THE CHINESE CONTRIBUTION.

The Chinese have always been considered a mysterious people on account of their exclusiveness. The Great Wall of China is a true symbol of their desire to be let alone. They have not been a colonizing people and we find no evidences in history that they have ever gone forth on a mission intent either to establish their religious beliefs or to conquer a country for the usufruct of their own nationals. While they may exploit the resources of a country and may establish colonies of Chinese therein, and they may inter-marry to some extent with the natives nevertheless they do not amalgamate. Their culture consequently has been kept to themselves.

That the Chinese have an old civilization extending far back into antiquity is disputed by no one. They have given to the world such a wonderful instrument as the Mariner's Compass is an historical fact, and that they had and used gunpowder and a printing press years before these things were used by the European people is another recognized historical fact, but they did not contribute these things to world culture.

The Chinese have long had a knowledge of navigation and have practiced that art. Marco Polo,* in the records of his travels in the thirteenth century, speaks of the Chinese Junks and describes them as being built of fir; having fifty to sixty cabins; one deck; built with double planking, held together with iron bolts, caulked inside and out with a mixture of line, chopped hemp, and wood oil, which made them water tight;

The words of Marco Polo and this history of Chinese Navigation taken from a history of navigation written by David Hannay entitled, "The Sea Trader: His Friends and Enemies" - Little Brown and Company, Boston, Pages 6 and 24.
the hold of their ships was divided into four compartments; and they carried a crew of from 200 to 300 men. Marco Polo even ventures the conjecture that their vessels were once much larger than they were at his time.

In the thirteenth century all European navigators knew the terrors of Chinese pirates in the waters of the Far East. David Hannay in, *The Sea Trader His Friends and Enemies*, gives an interesting picture of the Chinese Junk 'Keying' which was the first vessel ever to round the Cape of Good Hope.

That the Chinese are close observers is obvious. Their chronicles are today the only authentic history that we have of the Philippine Islands and other countries of the Far East prior to the discovery of the islands by Magellan. Without their records the history of this section would be a speculation and would be shrouded in mystery. Their literature gives many accounts of geography and ethnology of this part of the world. From the annals of the Ming (also called Ming Shih) dynasty - chapter No. 323, we learn by a series of maps of all of the islands of the Pacific, together with a knowledge of the Philippine Islands, Spain, Portugal, and other countries.

The geographical literature of the Chinese shows that they were well acquainted with the Philippines; for example, Tung Hsi Yang K'ao in his chronicles of the eastern and western oceans mentions the island of 'Lu-sung' (our Luzon, native Tagalog Luzong). Another writer during the
Sung Dynasty records commercial intercourse with Borneo between the years of 960-1279 A.D., which intercourse, without a doubt, must have brought a knowledge of Borneo, Mindanao, Palawan, Sulu Archipelago, to the Chinese. They describe herein their commercial relations with these people. Negritos — (Hai Tan) — are also mentioned, as well as head hunting in what is now Formosa. The people of Pangasinan (Luzon Island) are spoken of as the Ping Ka, and a record is given of an embassy from Pangasinan having visited China in the years 1406-1408-1410. Another record made by the Chinese shows that during the Hung Wu dynasty, in the year 1372, an embassy from Luzon arrived at the Chinese court with tribute. These accounts show a long commercial and social intercourse between the Chinese and the Filipinos. From the chronicling of Chao Ju Kua in the 13th century it is seen that they had a good knowledge of Mindoro and Mindanao. In a further writing of the Ming Shih Dynasty we find a reference to the residence in the Philippines by the Chinese.* "Formerly people of Fuh Kein lived there because these places were conveniently near. Traders - 10,000 in number - long residence". From these facts it will be obvious that there was opportunity for a Chinese contribution.

Although most writers on the Philippines give the Chinese influence on Philippine culture as being none, it does not seem logical that two people could have for so long a time maintained commercial relations without some mutual interchange of ideas, customs and language.

* Annals of the Ming Shih Dynasty Chapter No. 323, Page No. 11, as quoted by Berthold Lauper. The Smithsonian Institute Quarterly Volume IV, Pages 248-284 - Publication No. 1734 Washington, 1908.
De Morga says that there were Chinese workers in all trades in the Philippines at the time of his visit in the sixteenth century. Juan de Conception places the number of Chinese in the Philippines in 1638 as being approximately 38,000.

The Chinese made various contributions to Philippine industry and they brought many ideas of fruitful work. John Crawford in his work *THE HISTORY OF THE INDIAN ARCHIPELAGO* makes mention of various contributions by the Chinese to these regions. While describing the native system of weights and measures in Java, he speaks of the native measure 'bung-kal' being equal to the Chinese 'tabil' (average 25 pwt.) and ten tabil equal to one Kati and 100 Kati equal to one pikul, all of which, he says, were then Chinese weights and measures. He further mentions rice as being measured by the 'Chaing'. He speaks further of the navigators having a rude compass, 'pandoman' which came from China.

We know that the natives of Mindanao, Borneo, Sulu Archipelago, Palawan, and Tawi Tawi have from antiquity been great navigators (that is locally and considering their state at that time the adjective 'great' can be rightly applied to them). And it is perfectly reasonable to suppose that some of their knowledge at least of shipbuilding and navigation could have been derived from Chinese sources.

We can say that the Chinese contribution to Philippine education was almost confined to a knowledge of commercial methods, and if we exclude from the word 'education' and 'culture' all knowledge except that which tends to individual refinement and advancement, the Chinese contribution was NONE; otherwise, they made a distinct contribution, particularly in travel and commerce.

The main contributions of the Chinese can be summed up as follows: Prior to Magellan's coming they were in the Philippines in great numbers, and had long been trading commercially with these islands. Some efforts had been made to propagate their religious doctrines. They taught the Filipinos their main ideas of trade and fruitful industry and work; the extraction of saccharine from sugar cane and the manufacture of sugar, and introduced the first sugar cane mills with vertical stone crushers and iron boiling pans. Tribes from various parts of these islands have been found in possession of Chinese pottery and Chinese gongs.

northward to the Philippine Archipelago. Again, they could have come in from the west by the way of China and Japan. It seems most likely that the Hindus came by the way of Java, because of ruins of Buddhist temples and Indian architecture that exist in Java today and are evidence that the Hindus occupied Java at one time. There are several such ruins scattered over the island of Java. The main one at Borobudur is rich in stone carvings, and shows grotesque designs of hideous figures, such are so predominate in Indian architecture. These grim ruins of a former day are today crumbling in Java, and remain a mystery as to their origin or chronology. The reason for believing that the Hindus were never residents of the Philippines in the absence of any such ruins in these islands.

As to the supposed coming of the Hindus to Java and their migrations over this part of the world, we can only speculate. Various writers place their coming at different times, but the consensus is that they came to Java about the thirteenth century. Some writers place their
THE HINDU CONTRIBUTION TO PHILIPPINE EDUCATION.

That there is a direct Hindu element in the early Philippine education is a fact that we can definitely assume. As to Hindus ever having lived in the particular region that we now designate as the Philippine Islands, it is indeed highly problematical and speculative. The indications are that they did not. Their contribution was by indirect means, chiefly commercial. As to the lands that they used for stepping stones to spread their culture in the Philippine Islands, this is also problematical. The most likely course was by way of Java and Borneo, thence northward to the Philippine Archipelago. Again, they could have come in from the west by the way of China and Japan. It seems most likely that the Hindus came by the way of Java, because of ruins of Buddhist temples and Indian architecture that exist in Java today and are evidence that the Hindus occupied Java at one time. There are several such ruins scattered over the island of Java. The main one at Boro Bodo is rich in stone carvings, and shows grotesque designs of hideous figures, such as predominate in Indian architecture. These grim ruins of a former day are today crumbling in Java, and remain a mystery as to their origin or chronology. The reason for believing that the Hindus were never residents of the Philippines is the absence of any such ruins in these islands.

As to the supposed coming of the Hindus to Java and their migrations over this part of the world, we can only speculate. Various writers place their coming at different times, but the consensus is that they came to Java about the thirteenth century. Some writers place their

Shumaker M.M., Islands of The Southern Seas, G. P. Putman's Sons, New York, 1898, Chapter XXVIII, for a complete description of Boro Bodo.
coming as early as the tenth century; however, this seems to be without foundation. A history of navigation throws no light on the subject, although it records travel by the Hindus. This travel seems to be of a local and coastal nature. The history of India gives us no light. From the conquest of Alexander the Great to the Mahommedan invasion of India after the ninth century the history of India is blank; hence we can only conjecture as to the date of their coming to the Philippines.

Sanskrit words are a part and parcel of every tongue, and Sanskrit exerted an influence upon the language and native alphabets of the Philippines. A comparison of the alphabets of the natives of the Philippines with the Sanskrit and Arabic will be given in this thesis. That the languages of the Philippines show a distinct Sanskrit element is admitted by all who have made a study of Philippine grammar. Lieutenant MacKinley, United States Army, who made a study of Tagalog language (The Tagalogs are admitted by all to have had the highest state of culture at the coming of Magellan, having not only a written and spoken language, but also a literature) in his book, *A Handbook and Grammar of the Tagalog Language* *says* that of 17,000 native Tagalog words which he studied and traced the meaning of, 284 were of direct Sanskrit origin, some of which, of course, were borrowed thru the Malay migrations. To show the universal effect of Sanskrit upon all languages he cites for example, our word 'foot':

| Sanskrit  | Pada          |
|------------------------------|
| Latin     | Pedes         |
| Tagalog   | Paa           |
| Spanish   | Pie           |
| English   | Foot          |

The influence of Sanskrit upon Tagalog is given, as this language is the most important and widely used and understood of all the Philippine languages and dialects.

Lieutenant MacKinley, in giving his speculation as to the Sanskrit element, quotes Professor H. Kern, an eminent Javanese student, in saying that the Sanskrit element came by the way of Sumatra and Cambodia rather than by the Celebes. His hypothesis is based upon a study of the languages of the Celebes in which he found the Sanskrit element negligible.

John Crawford, in his work, "History of the Indiana Archipelago," goes into detail to show the effect of Hindu culture on these islands, especially Java. In writing of the Javanese division of the day, he says that it was divided into five distinct parts, each named for some deity of Hindu mythology; and he goes further to show that their astronomical, (or rather astrological) knowledge came mainly from the same source.

Kroeber in his book, "People of the Philippines," credits the Hindus with having taught to some extent the indigenous population of the islands the art of writing, together with the industrial arts of metal working and commerce. His speculation is that due to the Hindu influence a once higher state of culture existed in the Philippines than was found by the Spanish explorers.

While this subject is one for erudition, and would be a great contribution to Philippineology, all the knowledge that we now have comes from indirect sources such as philology, a study of grammar, unless documents or inscriptions which we do not possess at this time, are brought to light.

Kroeber - People of the Philippines - Published 1919, by the American Museum of Natural History, New York City, Chapter II.
In summarizing the Hindu contribution to Philippine Culture we can say that their contribution has been mainly toward the written and spoken languages of the country. We are unable to point out exact contributions as we are in the case of the Chinese. We are safe in assuming that an indirect contribution has been made thru Java and other countries within close sailing distance of the Philippines.

As is well known, this religion began in Arabia about the year 570 of the Christian Era. Its doctrine was propagated principally by the sword. The 'infidel' who refused to accept its tenets was automatically condemned to death. Hence by the year 600 A.D. the Arabs were spreading the doctrines of Islam by a series of wars, and that by 697 they had spread thru north Africa. Along with these conquests the Arab tongue was spread.

The propagating of Islam brought closer commercial relations with other nations. China, Korea, Japan and India were lined with commercial routes. Therefore it is safe to assume that Islam very likely gained its foothold in Hindoos and the other southern islands of this archipelago by the way of China.

The Arabians have always had a great veneration for education and despised ignorance in all forms. In the ninth and tenth centuries, we see...
THE MOHAMMEDAN OR ARABIAN CONTRIBUTION TO EDUCATION.

From the records that we have available, and from the study of language and alphabets among the indigenous population of the southern islands of this archipelago, we gather that the Arabian or Mohammedan element was the greatest single contribution to the education of the Phillipines. As to the exact date of the coming of the Mohammedan missionaries, or the exact country from which they came, we are in the dark as we were about the Hindus.*

As is well known, this religion began in Arabia about the year 570 of the Christian Era. Its doctrine was propagated principally by the sword. The 'infidel' who refused to accept its tenets was automatically condemned to death. Hence by the year 600 A.D. the Arabs were spreading the doctrines of Islam by a series of wars, and that by 697 they had spread them thru north Africa. Along with these conquests the Arab tongue was spread.

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The Arabians have always had a great veneration for education and despised ignorance in all forms. In the ninth and tenth centuries, we see

Kroeber: People of the Philippines - American Museum of Natural History - New York 1919 - Chapter II.
Bagdad as the intellectual centre of the East, with some thirty colleges located there, and that Cairo and Damascus were also seats of learning which were patronized and subsidized by the Caliphs. Many investigations were carried on pertaining to medicine, mathematics, astrology, alchemy, the natural sciences, necromancy, the magical arts and divination and books written on these subjects. Another thought of the Arabian contribution to education in the Philippines is that their missionaries very likely came from Abyssinia, Afghanistan and other eastern countries where Islam had gained a following, as well as from Arabia, each of which countries would have made its contribution to education.

De Morga speaks of a similarity between the Greek alphabet and those used by the inhabitants of the Philippines. Charles Edward Russell in his book, The Outlook for the Philippines points out that the Hebrew alphabet was employed by the Filipinos at the time of the Spanish discovery. While we have not found other writers who mention the Hebrew alphabet as one of those in use at the time of the Spanish discovery, it is not unreasonable to suppose that a Hebrew element could have been found especially when we consider the fact that the Arabs of this time were fully conversant with Greek and Hebrew philosophy and writings. The Kuran of Islam reveals itself as containing a heterogeneous mass of Biblical knowledge without proper identification and chronology. Another fact that leads us to accept this assertion by Mr. Russell is that our


only copy of the Hebrew scripture is the Greek copy of the same (the Septuagint) and, as the Jews were at this time dispersed all over the world, the Hebrew element in the Philippine alphabet is easily accounted for in that way.

The theology of Islam is unique indeed. In it there is no ethical conception of SIN as in the Hebrew and Christian world. Sin to a Moslem is the personification and essence of Conceit, Van Pride, and Haughtiness; hence the sinful man is one who shows these qualities. They have a distinct eschatological doctrine, and believe in a condition of eternal bliss for true believers and a torment for the damned and unbelievers.

Each of these future existences is to be in the physical state as contrasted with the spiritual conception as held by the Christian world. Sexual intercourse between persons out of the wedded state was permitted, but fornication by married women was forbidden under penalty of whipping. Polygamy is one of their practices, the usual number of wives in Mindanao being four. They established ablutions and other ceremonial washings, by which we can account to a great extent for the constant bathing habits of the native Filipinos. Their religious practices were all brought to the Filipinos.

One great contribution by the Mohammedans to education in the Philippine Islands was the establishment of actual schools for the teaching of the children. Pigafetta, in his account of his visit to Mindanao in 1519, tells us that they had schools for the instruction of the children in reading and writing, in the Koran and the faith of Islam, although De Morga tells us that the Filipinos in Luzon, even the women and children could read and write. He does not describe the actual method of instruction.

Several alphabets have been in use in the Philippines and in this section we shall show the various ones that have been found which are accepted by all Philippinologists to be the mother alphabets. The Sanskrit, and Arabic, have been accepted by all investigators on the subject of Philippine alphabets to have been direct contributing factors. The Greek and the Hebrew alphabets are added, the Hebrew by suggestion of Mr. Charles Edward Russell, and the Greek by authority of De Morga, who adds that "their alphabets closely resembled the writing of the Greeks".


THE MODERN ARABIC ALPHABET.

Contributed by Mr. N. E. Joseph, Merchant, 406-408 South First Street, Louisville, Kentucky.

Note: This copy of the Sanskrit alphabet is placed herein for purpose of comparison of the native alphabet with this alphabet.

THE SANSKRIT ALPHABET.

As taken from Arthur F. Mac Donnell's Sanskrit English Dictionary.*

Note: This copy of the Sanskrit alphabet is placed herein for purpose of comparison of the natives' alphabets with this alphabet.

As shown by Charles Edward Russell, **THE OUTLOOK FOR THE PHILIPPINES.*** facing page No. 48. He gives these as being the alphabets used at the time of the coming of the Spaniards.

<table>
<thead>
<tr>
<th>Language</th>
<th>Alphabets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mangyan</td>
<td>A B D E F G H K L M N ñ o ñ s t v y</td>
</tr>
<tr>
<td>Tagalog</td>
<td>n o y m c e t l j k h n n</td>
</tr>
<tr>
<td>Tagbanua</td>
<td>S t o s s o k l</td>
</tr>
<tr>
<td>Comingtang</td>
<td>u o i y n y k n</td>
</tr>
<tr>
<td>Bulacan-Tondo</td>
<td>u o i y n y k n</td>
</tr>
<tr>
<td>Visayan</td>
<td>u o i y n y k n</td>
</tr>
<tr>
<td>Pampangan</td>
<td>o e n y n y k n</td>
</tr>
<tr>
<td>Pangasinan</td>
<td>ó ñ e i y n y k n</td>
</tr>
<tr>
<td>Ilocano</td>
<td>u o i y n y k n</td>
</tr>
<tr>
<td>Asaka</td>
<td>H o i y n y k n</td>
</tr>
<tr>
<td>Toba</td>
<td>o n y k n</td>
</tr>
<tr>
<td>Bugui</td>
<td>M e y n y k n</td>
</tr>
<tr>
<td>Bornean</td>
<td>N d y n y k n</td>
</tr>
<tr>
<td>Javan</td>
<td>L e z h e h w w e h w w h w w</td>
</tr>
<tr>
<td>Arabic</td>
<td>١ ٢ ٣ ٤ ٥ ٦ ٧ ٨ ٩ ٠ ١ ٢ ٣ ٤ ٥ ٦ ٧ ٨ ٩ ٠</td>
</tr>
<tr>
<td>Hebrew</td>
<td>א ב ג ד ה י ק ל מ נ ו נ ס ט ו י</td>
</tr>
</tbody>
</table>

DE MORGA'S VERSION OF TAGALOG WRITING

(De Morga shows a system of Tagalog writing as shown by the Monk Thevenot)

Three vowels which have the function of five, viz.,

a  e-i  o-u  

For the alphabet he gives the following translation:

ba  ca  da  ga  ha  la  ma  na  pa  sa  ta  ya

\[ \text{The point"} \cdot \text{" is very important in pronunciation and if placed above the written character has the sound of e or i. e. g.,} \]

\[ \hat{o} \quad \text{bi or be} \quad \text{and} \quad \ddot{\varepsilon} \quad \text{pi or pe etcetera.} \]

The same written point when placed below the character when written gives the sound of o or u. e.g.,

\[ \ddot{o} \quad \text{bo or bu} \quad \text{and} \quad \dddot{\varepsilon} \quad \text{po or pu etcetera.} \]

Two sounds may be indicated together as follows by means of the dash.

\[ I \ U \ \text{ca-ma or} \ \dddot{\varepsilon} \ \text{que ma or} \ \dddot{\varepsilon} \ \text{co mu et cetera.} \]

De Morga says that their writing was from the top to the bottom of the page; began at the upper left hand corner and then down.

He assigns their system of writing as having come from the Hindus and Javanese.

Note: All vowel pronunciations shown hereon take the Spanish accent rather than English.

The vowels are: a ā e ē i ī o ō u ŭ
The consonants are: ba da ca la ma na ga ta ō ya sa us ŭgā

The angle "\̣" is the distinguishing mark for pronunciation in this alphabet. If the same be placed above a consonant, it is followed by the vowel sounds of e or i; if the same be placed under the consonant it is followed by the vowel sound of o or u. e.g.,

ō be or bi et cetera or ŭ bo or bu et cetera,

Mr. Landor*, in his book, gives the following as "mysterious" symbols which he saw placed over the cradle of a sleeping babe in the Celebes. While they may have no significance other than their oddity and to show the superstition of the natives thereof, nevertheless it is worthy to note that the Hebrew symbol of a triangle within a triangle is used five times. As shown in his book these symbols are, viz.,

\[ \text{Symbols} \]

AN OUTLINE OF THOSE THINGS WHICH THE LITTLE FILIPINOS WERE TAUGHT.

We have no written records concerning the elementary instruction given to the little Filipinos to guide us, and can only draw our conclusions after an examination of their religious practices, systems of writing, arts, trades and folk lore. We have some slight records from the Celebes, Tawi Tawi, Palawan, and Negros, but these are very slight indeed, as the first settlements of the white people were made on the Luzon and Mindanao.

RELIGION AND FOLK LORE.

Religion and Folk Lore are used together under one heading for the reason that when we come to study each of these subjects as practiced by an uncivilized people we find that they are so intertwined one with the other that we cannot draw a distinct circle and say, "That which we shall put in here we shall call RELIGION, and that which we shall leave out of this circle we shall designate as FOLK LORE". Likewise with primitive peoples we can not say exactly what is superstition and what is actual worship; nor can we tell exactly when a sacrifice made by them is a propitiation or a love offering.

SPIRITS.

Primitive man has always held a strict belief in spirits which bring to him evil or harm. To him each grove, and each tree therein, each rock, or any peculiar physiographical condition is very likely to have 'mana'. Hence the young of the land are naturally brought up in these superstitions and fears.
ESCHATOLOGICAL BELIEFS. Each tribe that we have a record of has held a firm belief in an existence beyond the grave, even the savage Negritos, whose religion has been defined as Aeta, or ancestor worship, 'The Cult of the Dead', * the doctrine of which is that the departed ones reside in some mysterious place where they are cognizant of the daily actions of those yet on this earth, and, the ancestors having gone on, they possess 'mana' which they can transmit back to those who yet remain here as mortals. At the coming of the Spaniards to Mindanao the majority of the inhabitants of this island were mohammedans, and had taken over the eschatological doctrine of Islam, that there is a physical after life with a state of bliss for the true believers in Islam, and a state of torment for the unfaithful and the indidel.

HEAD HUNTING. The Igorrotes of northern Luzon are especially noted for head hunting, and to this day are known by the term of 'Head Hunters' at the root of this practice is the belief that the head is the seat of life and that the power that once existed in the head of the deceased passes into the head of the slayer. Likewise brain eating was practiced among certain tribes of northern Luzon*. However, we must not be led to believe that head hunting was a practice especially confined to the Igorrotes of Luzon, for Dr. Blumentritt shows that it was practiced in other islands and among other tribes. Furthermore, a study in general


of the 'Cult of The Head' shows that it is ancient practice, as we find it in Borneo, Egypt, and among the Melanesians, and even among the Jews, as is shown in two specific instances, one of which is where the heads of Oreb and Ze-eb were brought to Gideon (Judges 7:25) and where the head of John the Baptist is brought on a platter to Herodias (Mark 6: 24-28).

MAJOR DEITIES. The Philippine Islanders were mainly polytheists. (This classification is made for those tribes which did not embrace Mohammedanism) And a list is given here of their main deities, and especial reference is made at this point to the copy of the Philippine folk tales which are a part of this thesis and show their polytheistic beliefs.

Diwata-Maguinduza The god of heaven Mindanao
Dumaneg-Daninguin The god of earth Mindanao
Al-alai Apparition of ghost of deceased persons Luzon
Paraen and Benguelen (his bride) - Minor Deities - Palawan
Maguimba A major deity. Mindanao
Tagma-sa-dugat Lord of the sea Mindanao etc.
Tagma-sa-yuta Lord of the earth " "
Tagma-sa-manga-bugand Lord of the woods " "
Tagma-sa-manga-suba Lord of the rivers " "
Tagma-sa-Saquit Lord protector of the sick " "
Tas-sa-Sulup or Tic Balan Lord of the woods Luzon
Maybabaya: The all-powerful Mindanao

Damalonglong: God of the north

Ougli: God of the south

Tago-lambang: God of the east

Magbabaya: God of the west

Tighiama: Creator of the world Mindoro

Manama: Governor of the world Tadlag

Tadlag: God of love

Todlibun (Virgin): Wife of Tadlag

Dewata: Protector of the household

The belief in transmigration of the soul. Was found among the Tagbuanos of Palawan wherein they believed that the souls of the deceased came back to this earth again in the form of lizards and other animals, which had the power to cure physical defects and help in times of adversity. This same tribe also had a belief in a bird called the "darait", which was considered to be a totem of 'good luck'.

Great benefits came to these people from their knowledge of navigation which would have contributed in a great many ways to their education, a few of which we shall mention here:

Commerce and Industry: It is inconceivable that their commercial education should not have been helped greatly by their visits to other lands. This would have brought a knowledge of industrial values other than their...
NAVIGATION.

The coastal people of the Philippines, and more especially those of Luzon, Mindanao and the Celebes, have long been famed for their knowledge of Navigation, and the name of 'Celebes Pirates' has long been borne by the inhabitants of these islands. However, piracy was not confined to these Celebes Islands alone, but is spoken of in descriptions of Mindanao and other islands in the southern part of this archipelago.

Shipbuilding was a distinct art and was taught to the youth of these islands, according to the records of the earliest visitors to these islands, Pigafetta speaking distinctly of the maritime life of the people of Mindanao says that they had ships for war, for commerce, and for pleasure, and that commercial relations were maintained with China, Manila, and Java. This would show that the inhabitants of Manila and Java in turn had ocean-going vessels. John Crawford* mentions the fact that the Javanese had long had a compass which they probably borrowed from the ChineseNavigators.

Great benefits came to these people from their knowledge of navigation which would have contributed in a great many ways to their education, a few of which we shall mention here:

COMMERCETE AND INDUSTRY: It is inconceivable that their commercial education should not have been helped greatly by their visits to other lands. This would have brought a knowledge of industrial values other than their own; and a knowledge of wares and products other than the ones produced at home. This is well shown by the number of Chinese goods which have been found along the coast of the Philippines and on the larger islands discovered even in the interior of Luzon.

own, and a knowledge of wares and products other than the ones produced at home. This is well shown by the number of Chinese gongs which have been found throughout all of the archipelago, and by the Korean pottery discovered even in the interior of Luzon.

GEOGRAPHY. No man can travel by land without taking full cognizance of the geography of the country over which his travels take him, for landmarks are the only absolute guide that he has for identification of any part of the country. The location of rivers, harbors and other natural protection in cases of monsoons and storms would have been the result of the inter island trips both by land and water we are led to believe that they carried on. In this manner, their general knowledge of geography was increased.

ASTRONOMY. Along with their knowledge of geography would have come at first a naive knowledge of astronomy. When man leaves the natural landmarks of the shore, the stars are his only course for guidance. However, jejune their astronomical reasoning may have been as compared with modern astronomy, we must admit that they had a knowledge of this science. In fact Crawford in his book, History of The Indian Archipelago, Volume I, records the calendars, astrological and chronological, that he found when visiting that country in 1820. We find in this a division of time by a lunar system, introduced by the Hindus and the Arabs. The day is measured by the sun's shadow, there is a week of five days. They used a dual year.

Crawford, John: History of The Indian Archipelago, Edinburgh, 1820, Volume I, Book III, Chapter II.
system, one for astronomical purposes, and the other for the rural, or agricultural, year. These years in turn were divided into cycles, similar to our Zodiac systems, e.g.,

Mang-Kara, Fawn ---- Mend, Goat ---- Kalahang, Centipede ---- Wichitra, Worm,----Mintuna, Fish ---- Was, Scorpion ---- Maisha, Buffalo.

An eclipse was called the 'Dragon' or 'Grahana'.

Likewise with their division of the circumference:

North-----------Utara
South-----------Salatan
East-----------Timur
West-----------Barat
West (True)-----Tapat
North-east--------Padig
East (True)--------Jati
South-east--------Tang-gara
North-west--------Laut
Southwest--------Daya

In addition to the eight points shown above (true east and west excepted), we find an additional eight points which are formed by adding 'sa-mata' to the given directions, e.g., sa-mata Utara: West North West, et cetera.

WEATHER CONDITIONS. As each given ocean, or body of water of any importance, has its 'peculiar' trade winds, it is but natural that these early navigators would have taken cognizance of these physical disturbances and would have made efforts to overcome them; and would have transmitted this knowledge from father to son.

LANGUAGES. The constant trading with foreign people would have added new words to the vocabularies of these traders, as shown above in the Chinese and Arabian Sanskrit words.
SHIP BUILDING. In order that one may sail the seas and overcome Nature in that manner, one must have a method of conveyance. The Filipino's knowledge of shipbuilding was evolved from the skiff to the sea-going vessel for foreign commerce. Naturally this increasing travel by the seas would have brought to the front a group of skilled artisans along this line. Such work would have developed a knowledge of mathematics, especially in strength of materials to withstand the ravages of the sea, also in elementary mathematics of dimensions, curves, and angles.

With these thoughts we are safe in positing the assertion that navigation contributed greatly to the primitive educational system of the Filipinos.
MUSIC is the natural expression of a man's soul for the deeper feelings and finer emotions of nature. A study of any people, primitive or modern, the highest civilized or the most barbarous and savage, even to cannibals, shows us that they have songs; and along with this desire for natural expression of the soul comes the invention of instruments by which these finer instincts can be reproduced. The music of any people will be fitted, naturally, to their mode of living. Among the more primitive peoples their music is first of the martial type, and second, of the religious type.

This natural expression of man was found among the Filipinos, and all writers agree that the Filipinos were, and are now, natural musicians. Each tribe has always been found to have its own tribal airs and its peculiar musical instruments.

THE DANCE. Following the expression of the soul by means of music, the next step that we see in all men is the dance. Most generally they have a dance for every occasion, such as the religious dance for propitiation of the gods, the dance for the harvest, the dance for before and after the battle. The inhabitants of the Philippine Islands were no exception to this rule and we find records from several sources of the ceremonial dance by old and young, with games of dancing for the children.
SWIMMING AND ATHLETICS.

These were but natural consequences to a people who lived constantly by the sea shore. All records, from De Morga and Pigafetta down, speak of the constant practice of bathing and swimming, together with ceremonial ablutions (an introduction of Islam), and the scrupulous cleanliness of these people. Their homes might be dirty, but their bodies were always clean, and the daily bath in the river or the bay was the rule rather than the exception. Common weapons used, except by the Tagals in the vicinity of the present site of Manila, who had brass cannon at the coming of Le Caspi (considered by all authors as an introduction by the Arabs who had established Islam there prior to the coming of Le Caspi).
MILITARY TRAINING.

Warfare, and the doctrine of the survival of the fittest, and that, "To the Victor Belongs the Spoils", has always been the practice of primitive man. Hence all accounts from the early writers show battle with the natives for possession of their land. The bow and the arrow were the common weapons, and the natives were especially well trained in these arms and had a system of officers to command the warriors in battle. The bow and the arrow were the common weapons used, except by the Tagals in the vicinity of the present site of Manila, who had brass cannon at the coming of Le Gaspi* (considered by all authors as an introduction by the Arabs who had established Islam there prior to the coming of Le Gaspi).

The Igorots of Northern Luzon, however, deserve especial notice in this connection. Driven to the interior mountainous regions of Luzon as they were by the stronger coastal tribes, they naturally had to make these mountains produce their food. These people have produced a system of terracing which has long been a marvel to the engineers of the world. These terraces were constructed around the mountains at a given angle for drainage. The next step in this great system is irrigation of these terraces to insure sufficient water for the rice crop, and last, and considered by some writers the greatest, is water to the growing rice crop. With this thought in mind we are safe in

Le Gaspi, Miguel Lopez de, The First Spanish Governor of the Philippine Islands - For reference see de Morga's Sucesos Islas Filipinas Hakluyt Society London 1868, Photograph on title page and page 368.

See photograph opposite page 53.

AGRICULTURE.

We cannot say that agriculture was highly developed among the Filipinos, with the exception of the Igorrotes who will be discussed in a paragraph separately. The Negritos and other interior tribes were mainly of a nomadic nature, and merely planted sufficient 'caramotes' for their immediate needs; other vegetables planted were turnips and some maize and rice for bread. Their animal husbandry was likewise neglected, and aside from the record of pigs, a few fowls such as ducks, chickens and geese and the carrabao, we have no record of a developed system of animal husbandry. As a nomadic people, and with no market for these provisions outside of their own consumption, we do not see them developed.

The Igorrotes of Northern Luzon, however, deserve especial mention in this connection. Driven to the interior mountainous regions of Luzon as they were by the stronger coastal tribes, they naturally had to make these mountains produce their food. These people have produced a system of terracing which has long been a marvel to the engineers of the world.* These terraces were constructed around the mountains at a given angle for drainage. The next step in this great system is irrigation of these terraces to insure sufficient water for the rice crop, and last, and considered by some writers the greatest, is a system of fertilization by which animal and human waste was placed at the openings of these terrace ditches and conveyed thence by the flowing water to the growing rice crop. With this thought in mind we are safe in

See photograph opposite page 33.
Russell, C.E. The Outlook for the Philippines
positing the assertion that the Igorrotes were the only tribe of the Filipinos who really built up a scientific agricultural system.

As we understand Medicine and Chemistry, the Filipinos had no exact knowledge of either.

Like all primitive people, the Filipino's knowledge was mostly a superstition.

However, they had some knowledge of the curative powers of certain roots and herbs. Their main knowledge in this field is their knowledge of poisons concocted from roots and herbs and which were used on the points of their spears and arrows in their warfare.
MEDICINE AND CHEMISTRY.

As we understand Medicine and Chemistry, the Filipinos had no exact knowledge of either. Like all primitive people, the Filipino's knowledge was mostly a superstition.

However, they had some knowledge of the curative powers of certain roots and herbs. Their main knowledge tho in this field is their knowledge of poisons concocted from roots and herbs and which were used on the points of their spears and arrows in their warfare.

With the knowledge of working in bronze, iron, and gold would have come a knowledge of alloying metals to produce bronze, and of mining the gold and iron. In fact, we have direct historical references to the gold mines of the Tagalogas and Igorotes.

The extraction of sugar from the raw cane, the manufacture of spirituous liquor, the making of dyes for cloth, the running of seaport places for the purpose of trading with the Chinese, as well as inter and intra island trade between the various tribes must be considered.

And while the above trades and arts have been confined mainly to the men we cannot afford to overlook the education of the girls. To them fell the weaving and the spinning of cloth, the making of garments for the family, the preparation of the meals, the care of children, the dressing of the hair; and last, but by no means least, the making of the Mexican Filipino hand fancy-stitch work, which is world-famous today for the embroidery of women.

De la Barca, Antonio de, Suefite Islas Filipinos Embayt Society London 1905, p. 972, "...and before that time the coming of the Spaniards..."
TRADES.

(Other than shipbuilding, which has been discussed previously.)

METAL WORKERS. We have the record of De Morga that the Tagalogs at the time of his coming were skilled workers in brass and other metals, and that they had brass cannon.* Again, we have the testimony of other pioneers into the interior which showed the Tinguiannes and Igorrotes to be expert workers in gold. Another craftiwork which we cannot afford to overlook is their knowledge of iron work, even tho it was elementary. We see that some of these tribes possessed iron tipped spears. With the knowledge of working in brass, iron, and gold would have come a knowledge of alloying metals to produce brass, and of mining the gold and iron. In fact, we have direct historical references to the gold mines of the Tinguiannes and Igorrotes.

The extraction of sugar from the raw cane, the manufacture of spirituous liquors, the making of dyes for cloth, the running of mercantile places for the purpose of trading with the Chinese, as well as inter and intra island trade between the various tribes must be considered.

And while the above trades and arts have been confined mainly to the men we cannot afford to overlook the education of the girls. To them fell the weaving and the spinning of cloth, the making of garments for the family, the preparation of the meals, the care of children, the dressing of the hair; and last, but by no means least, the making of the famous Filipino hand fancy-stitch work, which is world-famous today for the undergarments of women.

*De Margo, Antonio de, Sucesos Islas Filipinos Hakouyt Society London 1868 - Page 272. ".....and before that time (the coming of the Spaniards) they had small brass cannon.....".
THE HIGHER LEARNING.

Those studies which we are wont to call higher learning have been discussed under the subject of "Philippine Alphabets"; however, we can say here that Pigafetta cites the existence of school houses in Mindanao where the children were taught the faith of Islam and to read and to write, and De Morga* says that "all, both men and women in Luzon could read and write the native dialects. So we see that these were by no means neglected, and it is obvious that direct instruction in this line was given to the youth of the land; and it is safe to say that certain persons were designated to act as educational functionaries for the children. The fact that these people preserved their native alphabets and languages thru the three hundred dark years of the Spanish regime and today have newspapers and other literature printed in their own dialects, shows their innate tendency for higher learning. As to their written historical records, these are yet to be discovered, if they have ever existed. As to their scientific work, this has already been discussed.

PSYCHOLOGY. As far-fetched as this term may seem, commerce with foreign countries would naturally have brought a knowledge of the manners and customs of their clientele, and, besides a knowledge of the Mores of the lands visited, would have come a knowledge of the way and the manner of their thinking, a knowledge which is essential in any mercantile trade.

IN CONCLUSION.

The writer knows that this is merely an outline of the things that were taught to the little Filipinos as they progressed into manhood and womanhood; and that these are only obvious conclusions drawn from the meagre sources that we have of their life and habits. However, we are safe in saying that the people of this archipelago (that is the tribes other than the Negritos) were far from heathen barbarians at the time of the 'discovery' by Magallanes or Magellan, and that they possessed much which they can point to with pride even to this day.

When we read the history of education of any people we shall see their first education, and even later, is an attempt to conquer the forces of nature, to provide food, to withstand his enemies, and last with the sex instinct functioning to provide a home for himself and his family. Does not the education of the Philippine aborigines parallel that of any other nation?

That they did not have all of the cultural things of the occidental world is a fact of which we must take cognizance, and at the same time we cannot sneer at them for we must remember that the cultural side of education is a luxury that can come to mankind only after he is well established socially, and after he has eliminated to a great extent the actual battle for existence from day to day.

As to whence it all came, where they came from, the elements that influenced their education in totality, do we know? Can we not say, "God moves in a mysterious way

His wonders to perform."
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