* A DESCRIPTION OF THE SWIFTS (COLLOCALIA FRANCICA AND COLLOCALIA INNOMINATA), THE BIRDS WHICH BUILD EDIBLE NESTS.

by

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PART I.

The Birds, their Nests and the Collection.

1. The Reverend Dr. E. P. Dunlap read a paper entitled "The Edible Bird Nest Islands of Siam" before the members of the Siam Society which was published in volume IV part III, 1907. Dr. Dunlap lived for many years with the people of the region in which the bird nests are found, and had a peculiarly intimate knowledge of the subject. Twenty-nine years have passed since Dr. Dunlap wrote his paper, so perhaps I may be pardoned for reopening the subject.

2. Edible bird nests are found in further Asia in such territories as the islands lying off the coasts of Tenasserim and Arakan in Burma, the Nicobar and Andaman Islands, the West coast of Siam between Pang Nga and Satul, the islands of the Javan Archipelago and Borneo, in the Indian Ocean. They are also found in the Gulf of Siam and off the coast of Annam in French Indochina. Those found in the Indian Ocean are found on islands which lie south of latitude 20° whereas in the Gulf of Siam they are found on islands south of latitude 12°.

The bird nests are of two varieties, for commercial purposes known as "white" nests and the "dark." The "white" nests, according to Blanford, are built by the Collocalia francica, the grey-rumped swift, and the dark nests by the Collocalia innominata said to be possibly an allied species. The white nests command high prices and are much valued by the Chinese and most of the peoples of the Far East. The great distributing market is in Hongkong from which place the nests are sent to all parts of China. The dark nests, which are largely composed of feathers glued together with the salivary secretions of the glands of the birds, being impure are of little value, qut still find a market in Penang, Singapore and Burma. The white

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or pure nests are found in greater abundance in the Gulf of Siam and Annam than in any other part of Asia. This is somewhat curious because the two varieties of swifts are found living together *in* all the regions mentioned. The reason for the predominance of the dark birds in the Indian Ocean has not been satisfactorily explained. The dark nests largely exceed the white nests on the islands situated in the Bay of Bengal and the Indian Ocean. Although this paper deals only with the swifts found in Siam, I think it may be useful to mention their habitat in Burma, as the Tenasserim coast is a northern continuation of the West coast of Siam. They are found in the Tenasserim Division of Burma even as far South as Victoria Point where the boundaries of Burma and Siam meet.

The main Island-groups are :—The Moscos, the Mali, the Yē-ē and the Turrets. Nests are found on other islands but only the islands forming the four groups mentioned are of any importance. It would seem that dark nests predominate on the Mali group, the ratio being about three dark to one white, whereas on the Moscos group, although the number of nests gathered is not great, still the white nests exceed the dark. This may be due to the revenue farmer discarding the dark nests which have little value, Although the data showing the total weight of the dark and white nests collected in these islands are not complete, still it is quite clear that the total output is comparatively small when compared with Siam.

South of Victoria Point we enter Siamese territory, that portion facing the Indian Ocean having an approximate length of 200 miles. It is curious that these swifts are not found on the coast-line between Victoria Point and the Province of Pang Nga. It is a matter of some significance that the dark birds, Collocalia innominata, which greatly exceed the white birds, Collocalia francica, in the islands off the coast of Burma also predominate in the islands off the west coast of Siam. This would seem to be explained, as stated later on, by reports from Burma which say that the francica lays only one egg as against two by the innominata; though the evidence given by the nest gatherers Cha : haw (ชาหอ) on the West Coast of Siam is to the effect that the francica lays two eggs and the inno-

minata four eggs in a season, the proportion is the same, that is, two to one in favour of the dark birds.

3. In this paragraph I will attempt to give a description of the swifts found in Siam. These birds are about the size of an ordinary sparrow. A general description of the bird is as follows: the feathers are a darkish grey tending to black. The feathers of the wings and tail are black and the wing feathers overlap the tail. The beak is short, wide, and black in colour, projecting about 3 mm. in length. The eyes are black and about the size of a pepper seed. The legs are black, covered with a little fluff. In the case of C. innominata the feathers at the tail are short, being only 2 cm. in length.

The two species have certain distinguishing characteristics. C. innominata is slightly larger than C. francica and its head is also larger. The wings of C. innominata, measured from the shoulder, are about 13 cm. in length, whereas the wings of the C. francica are about 12 cm. C. innominata has some fluffy or bushy feathers of a light grey colour approaching white on the upper surface of the tail, whereas in the case of the other species these bushy feathers encircle the tail like a belt. The breast of the C. innominata is ornamented with a few yellowish coloured feathers whereas in C. francica these feathers are dark grey.

4. The whole question of the gathering of the nests and the final successful effort made by the swifts to lay their eggs is largely conditioned by the monsoon season, and the actions of the revenue farmer. The dates on which the swifts commence building their nests and the dates on which the collector gathers them, as well as the dates on which the second and third nests are made and collected, vary each year. The birds occupying the islands on the West Coast of Siam begin making their nests about a fortnight earlier than the birds in the Gulf of Siam. This is due to the difference in the breaking of the monsoon. On the West coast of Siam the monsoon breaks about the 17th of May, whereas on the West coast of the Gulf which is affected by the North East monsoon, it does not break until October. The coast of Chantaburi feels the

full force of the monsoon about May or June for it receives the South West monsoon as on the West coast.

On the West coast of Siam the birds commence making their first nests in early December. This building or weaving occupies about one hundred days. These nests are collected some time in March. The birds then commence making the second nests, working in great haste. These nests, badly built, are collected about 20 days after the work was commenced. The collector gathers these nests which takes 15-20 days. The birds are then allowed to commence making the third nests. This is completed in 40 days. The eggs are then laid and hatched. This process takes 15-20 days. The young birds are about 40 days old when they leave the maternal nests. The time used between the commencement of the building of the first nests and the third nests is about five months. The birds building their first nests on islands Four and Five off Patalung, commence doing so about ten days earlier than the birds occupying the islands lying to the North in the Gulf.

The evidence regarding the number of eggs laid by the two species is not very reliable. However, the collectors on the West coast of Siam say that C. francica lays two eggs about May and a month later C. innominata proceeds to lay two eggs. It would seem that C. innominata lays two more eggs in October. This would account for the preponderance of C. innominata over C. francica. It is stated that the nests of the former are ninety per cent. of all the nests produced. Evidence gathered from collectors of the nests from the islands in the Gulf of Siam tell us a different story. These men say that C. francica lays four eggs and C. innominata only two eggs during the year. This would account for the preponderance of the white nests, that is, the nests of C. francica, over those of C. innominata; for in the Gulf the white nests represent eighty per cent. of the whole.

5. Collocalia francica build the best nests, i.e., the nests that command the highest price in the market. The nests of this species do not contain any material other than the salivary secretions of the glands. This species build their nests in the inner recesses of the

caves always at some distance from the nests made by Collocalia innominata. The two species do not interbreed and would seem to live distinct lives. Should a quarrel arise, C. innominata generally comes off victor in the fight and it is believed that C. francica live in some fear of the species. This I am not inclined to accept as correct. C. innominata build their nests near the openings and apertures of the caves. This species does not build a clean nest for it uses feathers which it picks up in the caves, and other material in addition to the salivary secretions. The nests are dirty, as their young deposit their droppings in the nest which is never done by C. francica. As the nests are adulterated with feathers and other material, they present a dark appearance which has given them the name of black nests as opposed to the white nests of C. francica, which are of a pale cream colour. The birds themselves have therefore come to be known colloquially as white or black birds. The droppings of C. innominata are not viscid and glutinous and often contain flies which would indicate that they are dirty feeders. The droppings of C. francica are sticky but do not contain any extraneous matter.

The food supply of these birds has always been a mystery. Dr. Dunlap tells us that C. francica are very swift on the wing, leave the caves at sunrise and do not return until sunset. They are not known to rest or perch on anything or to feed on any material substance. It is consequently believed that they obtain their nutriment and sustenance from the air and that during their long flights they generate the saliva with which they make their nests.

6. On the West coast of Siam no measures are taken by the revenue farmer to increase the number of white nests by giving protection to C. francica nor does he take any step to prevent an increase in the number of C. innominata. On the islands in the Gulf of Siam where the profit of the revenue farmer depends entirely on the number of white nests, he requires his professional gatherers, Cha Haw, to take steps to keep C. innominata within proper bounds. This is done by the gatherers preventing the young from being hatched by removing the nest before incubation has been completed. This practice is indulged in only when it appears that this species shows signs of being on the increase.

I attach as an appendix to this paper a list giving the names of all the islands in Siam frequented by the swifts for the purpose of building their nests. This list is prepared in the Siamese language, and shows that there are 10 islands in the province of Satul, 13 in the province of Trang, 6 in the province of Krabi, and 33 in the province of Pang Nga. All these islands are situated off the coast of Western Siam in the Indian Ocean. In the Gulf of Siam there are altogether 80 islands. Five of these are in the province of Prachuab Kirikantha, 18 are in the province of Chumborn, 51 are in the province of Surasdatani, 1 is in the inland sea in the province of Patalung and 5 are in the provinces of Chantaburi and Krat.

PART II.

Historical Note Regarding the Status of the Revenue Farmer and the Old Law.

7. In ancient days the male population of Siam was divided into many groups or categories for the purpose of rendering service to the state. These groups were in charge of officers and allotted to the administrative divisions of the country. These service men were known as "เลข" and "เลขส่วย" according to the duties they had to perform, the term เลข being generally applied to men who rendered personal service and เลขส่วย to those who were employed on the work of collecting local produce whether forest or mine or salt. The officers were of various ranks, namely, ขุนหมื่น, นายหมวด, นายกอง, นายร้อย, ปลัดร้อย, ผู้คุม, i. e., from the chiefs of groups down to divisional and squad commanders and the lower rank of wardens. Complete lists of these men were prepared each year and they were not allowed to change their residence or to transfer themselves from one group to another without permission. Now the men who were employed on the work of gathering the bird nests formed one of these groups. They were known as เลขส่วยรังนก, and the inferior members of a group were known as ไพร่ส่วยรังนก.

As the work of guarding the caves and collecting the nests is one of considerable difficulty and hardship it would be quite impossible to use untrained men. Therefore these "lek" became professionals and hereditary, i. e., the son followed in the steps of his

father. The work of collecting the nests is most dangerous, for the men have to be lowered in baskets attached to ropes from any suitable aperture in the caves. The slightest slip or lack of caution on the part of the collector or carelessness on the part of those in charge of the lowering ropes meant death, and death amongst this class of professional men was not uncommon. With the advent of the law fixing remuneration for men employed on certain forms of corvee promulgated in the year 1900 A. D., the professional status of the เลขส่วยรังนก was maintained, for without this the revenue farmer would find it difficult to perform his duties. This law of 1900 A. D. was modified in 1914 A. D. and a difficult situation arose because the status of เลขส่วยรังนก disappeared. It became necessary to call on the discarded members of this group to register themselves as volunteers, their pay being fixed. Much the same system of registration and preparation of lists of men as formerly had been in use was adhered to. Those men who were professionals and had adopted the same life as their fathers readily came forward and the revenue farmer was enabled to still pay large sums to the State for the right to collect these nests, as he was thus guaranteed a supply of trained labour.

8. The duties of the revenue farmer were laid down in an old document known as the พิกัดท้องตรา. With the introduction of changes in the laws and administration of the country, it became necessary to modify the terms and conditions laid down in this document. Under the old พิกัดท้องตรา, the revenue farmer was an agent of the State, his duties approximating to those of an official of the Revenue Department. He was granted a commission or patent of rank with a title. He had to drink the water of allegiance to the Sovereign and to take the oath required by law. He and his men were granted the right to carry fire-arms for their protection against marauders and others who might attempt to interfere in their work, or steal the nests or destroy the birds. Dr. Dunlap says in his paper that the fine which was imposed on a thief was equal to three days of the revenue payable by the farmer to the State. This is not correct. The fine imposed was equal to one day's revenue only.

Should nests not the subject matter of a theft be found in the hands of a purchaser then if the quantity was under half a catty, that is two-thirds of a pound, in weight no fine could be imposed but the revenue farmer had the right to confiscate the nests.

PART III.

Prices, Export, and Markets.

9. The price of the bird's nests in Hongkong, which is the distributing market for China, varies considerably from year to year as will be seen from the table showing the prices realised for nests taken from some of the best nest-producing islands in the Gulf of Siam for the year B. E. 2462 (A. D. 1919-20) and B. E. 2473 (A. D. 1930-31). The price given is per picul which equals 133.33 lbs. (16.6 piculs equalling a metric ton) and is in Hongkong currency.

Name of Islands	Rotation of Collection	1st. Quality Price		2nd. Quality Price		3rd. Quality Price	
		1919-20	1930-31	1919-20	1930-31	1919-20	1930-31
1. Ngam	1	7,000	4,500	2,800		1,250	
เกาะงาม	2	5,600	3,000	2,500		1,200	
	3	4,000	1,410	2,400		1,050	
2. Chan.	1	5,000	3,220	2,350		1,400	
เกาะจาน	2	4,400	2,000	2,200		1,100	
	3	3,800	1,350	2,000		1,100	
3. Ma Phrao	1	7,600	3,250	2,800		1,100	
เกาะมะพร้าว	2	4,400	1,900	2,200		1,100	
	3	3,600	1,400	1,800		900	
4. Rang Na Chiu	1	3,400	3,250	2,200		1,100	
รังกาจิว	2	2,900	2,300	2,000		1,050	
	3	2,600	1,400	1,700		1,000	
5. Kang Sua.	1	3,200		2,000		1,000	
เกาะคางเสือ	2	2,600		1,950		1,000	
	3	2,500	1,420	1,800		900	

The high prices ruling in the bird nest market for the year 1919–20 was due to the boom prices paid for all commodities in that year as well as to the high value of the Hongkong dollar. The prices given for the 1930–31 are below normal, because the effect of the economic depression was beginning to be felt and the value of the Hongkong dollar had depreciated enormously.

The purchase price paid by the farmer for the right to collect nests is largely speculative, for, unless he has held the farm for the previous three years, he is not in a position to know the conditions prevailing in the various islands and unless he is a financial genius he can have no conception of the possible fluctuations and vagaries of Hongkong currency. In the year 1919–20 there was a time when 36 Hongkong dollars could buy 100 Siamese Ticals, the mean exchange value for the dollar being 38 7/8. Rate of exchange coupled with the boom prices paid for the nests enabled the then lessee or farmer, Phya Pratinantraman, to make a great fortune. Now compare these financial conditions with the year 1930–31 when the price of nests had fallen considerably and the exchange rate on Hongkong fluctuated between 118 and 191 dollars to a hundred ticals. The mean rate for this year was 151 dollars. The bird nest lessee feels himself fairly safe when the Hongkong dollar remains steady at about 80 to 100 ticals.

10. As I have already explained the quality and quantity of the nests is largely conditioned by the monsoon, and it is therefore difficult for any farmer to gauge the bird nest harvest. The figures of the quantity of bird nests exported during the years A. D. 1926–27 to 1934–35 gives us an indication of the annual harvest. It is true there is a local market for nests which probably does not exceed thirty piculs a year. This quantity should be added to the export figures, which are given below in piculs.

YEAR		QUANTITY	YEAR		QUANTITY
1926–27	...	350	1931–32	...	301
1927–28	...	350	1932–33	...	206
1928–29	...	333	1933–34	...	328
1929–30	...	287	1934–35	...	368
1930–31	...	287			

It must not be thought that the whole of this export goes to Hongkong for this is not the case. The bulk of the harvest of nests gathered in Bhuket and Satul is exported to Penang, with an infinitesimal quantity to the Malay States and Singapore. The quantity exported to Penang in the year 1929–30 was 112 piculs, in

1930–31 was 180 piculs; 1931–32 was 184 piculs; 1932–33 was 94 piculs; 1933–34 was 89 piculs; 1934–35 was 152 piculs.

Deducting these figures from the total quantity exported shows that the export to Hongkong which is composed of white nests is comparatively small. The export to Penang consists largely of dark nests and was augmented in the years 1931–32, owing to the farmer or lessee having got into trouble with his Hongkong agents and partly because he himself was a Penang man. During this period the farmer was in financial trouble. The value for the bird nests exported as given in the customs returns falls short of the prices realised in the foreign markets.

The farm is sold for a period of three years and if the successful tenderer for the farm is a newcomer he has to lay down a considerable amount of capital in finding the necessary equipment for running the business. If, however, the successful tenderer is the previous lessee then he has a considerable advantage, because the initial outlay need not be reincurred.

11. The price value of these nests is so great that it has led unscrupulous persons to manufacture spurious nests. These artificial nests are made mostly from the jelly produced by boiling down certain varieties of sea weed. These imitation nests are so cleverly flavoured that only connoisseurs can detect the fraud. Those not initiated in this nest cult partake of the soup and food prepared from these imitation nests firmly believing that they are eating the real article. It is but reasonable to assume that the bird nest preparation given to their customers by many oriental restaurants and hotels are largely imitation or perhaps imitation mixed with a small portion of the real nest, much in the same way as hotel proprietors will pass off a sparkling Moselle wine to an unsuspecting customer as champagne.

PART IV.

What Dr. Dunlap has to say about the Swifts.

12. As it is probable that many of the present members of the Siam Society have not had an opportunity of reading Dr.

Dunlap's paper which was printed some twenty-nine years ago, I propose to restate here a few of the more important points regarding the habits of the swifts recorded by him. Dr. Dunlap says the swifts which make the edible nests, although having the generic name of "Nok-Ee-Enn," are known locally as "Nok-Kin-Lom," or wind-eating birds. This Dr. Dunlap points out is because these birds are believed to obtain their nutriment from the air. He says that personal examination by Phya Waiyawoot proves that these birds when returning to the caves for the purpose of building their nests after an all-day-long flight had their mouths filled with glutinous saliva resembling the white of an egg. Dr. Dunlap states that the edible nest bird weaves its symmetrical little nest from long spider-web-like threads of saliva which has been sought in the air miles and miles away. Dr. Dunlap dismisses as untenable the popular belief that these birds obtain their nutriment from sea weed and vegetable matter, for he has never seen them light either on land or objects floating on the sea. They remain on the wing all day long. This belief is only held by those who have not an intimate knowledge of the habits of these birds. Dr. Dunlap in describing the nest says it is a neat little piece of work, specially the first nest. It is shaped like one-half the lid of the small China teacup that we often see in this country, or half a very small saucer. A snug little pocket fastened securely to the stone wall, it is so construeted that it is well nigh impossible for the eggs or young birds to roll out of it, and were it left alone there would be no accident to the birds.

13. Dr. Dunlap relates that the attention of the Siamese was first drawn to the revenue value of these nests during the reign of King Phra Nang Klao, and it was in this reign which commenced in A. D. 1824 that the right to collect these nests was first leased. This statement is not correct. It is most probable that the collection of the bird nests was a source of revenue during the Ayudhya Dynasty. I find recorded in a Chronicle of Song Kla that a Chinaman named Hao Yieng (เฮาเหยี่ยง) came from the village of Se Hin (เส้หิน) in Chieng Chiew Hu (เจี่ยงจิ้วหู) north of Amoy (แอมุ่ย) and settled in Song Kla in the year A. D. 1750. He started life as a gardener,

moving from place to place and later married a Patalung girl by whom he had five children. Their names are Boon Huui, Boon Hiow, Boon Sin, Thien Seng, Yok Seng. In the year 1768 on the death of Chao Phya Nakon Sri Dhammaraj, Luang Nai Siddhi, the Phra Palat, declared himself to be the ruler of the territory, and appointed Nai Vithien to be Governor of Song Kla. This was an act of rebellion and in the following year A. D. 1769, King Tak in person led an army to Song Kla. The rebellion was quelled. The King appointed Nai Yom under the title of Phra Song Kla to be Governor of Song Kla.

Hao Yieng, who was much liked by the people and affectionately called Tua Pe (ตั๋วเปะ), prepared a list of all his properties, his wife, his children and his slaves and presented them all to the King, together with fifty cases of Chinese tobacco, and begged His Majesty to grant him the right to collect the bird nests on islands Four and Five lying off Patalung in the inland sea, for an annual payment of fifty catties (Tcs. 4000). The King accepted the tobacco but returned the property and the human beings specified in the list and granted Hao Yieng the right to gather the bird nests. The King was graciously pleased to confer on Hao Yieng the title of Luang Indra Kiri Sombath, The King asked for the third son, Boon Sin, of Luang Indra Kiri Sombath and appointed him to be a mahadlek (royal page) and took the boy to Dhonburi. In the year A. D. 1775, Luang Indra Kiri Sombath went to Dhonburi to pay homage to the King, presenting many gifts. The King said: "This man is an old and loyal servant and is so trustworthy that he should be raised to higher rank and position," and thereupon appointed him to be Luang Suvarna Kiri Sombath and Governor of Song Kla in place of Phra Song Kla (Yom) who had proved himself to be incompetent.

Luang Suvarna Kiri Sombat died in the year 1784, in the reign of King Phra Buddha Yod Fah of the Bangkok Dynasty. In the year 1786 Burmese attacked and occupied Song Kla but were forced to retreat by an army under the command of the second King. Following this there was much disorder and Pattani rebelled. Order was restored. In the year A. D. 1784 Boon Huui the elder son of

Hao Yieng was appointed to be Luang Suvarna Kiri Sombat in place of his father.

Later on Luang Suvarna Kiri Sombat was raised to the rank of Phya and his brother Boon Hiow was made Phra Ananta Sombat, his next brother Boon Sin became Phra Bhirendra Bhakdi, the fourth son Thien Seng became Phra Sundra Nuraks. In the year 1792 Phya Song Kla (Boon Huui) was elevated to Chao Phya Indra Kiri Sri Samuha Song Kram, etc., governor of Song Kla. This province being separated from Nakhon Sri Dhammaraj was made a first class province. The present family of "Na Song Kla" are descended from Hao Yieng, who collected the bird nests from islands Four and Five in the inland sea.

The revenue received from the right to collect bird nests at one time was as high as £20,000 but owing to the economic depression and the vagaries of the Hongkong and Chinese dollar is now much less.

14. Dr. Dunlap is correct when he says that in olden times the farmer was allowed to collect only two nests in a season, for by this method the birds were given a greater chance for regeneration. The พิกัดห้องตรา which I refer to in Part II lays down as a condition that the farmer shall take only two nests in a season. Cupidity was the animus which moved the farmer or lessee to try and compel the birds to build three nests as was the practice in Java. He was successful and three nests are collected but the third nest is of little value. The Government acquiesced in the farmer collecting three nests in a season.

PART V.

A NOTE ON THE SIAMESE WORD FOR THE BIRD SWIFT.

15. The swifts which build edible nests are called in Siamese Nok Ee Enn (นกอีแอ่น). I am not a grammarian but cannot help feeling that the prefix Ee (อี) when joined to a noun does not denote that the word is of the feminine gender. It is true that some languages possess words of the feminine gender, but the Siamese language denotes gender by using the words "Bhu" (ผู้) and "mia" (เมีย). Words denoting many animals and birds in the Siamese

language have the prefix อี้ which is probably used for phonetic reasons rather than to express gender.

16. The prefix อี้ to a female name signifies a person of the lowest social standing and is used for female convicts and when the speaker desires to express disgust with a woman he or she may be speaking to. The prefix อี้ signifies "Miss" or "Mrs." and when applied to a human being was used by persons of the higher classes in ancient times. Just when the prefix อี้ developed its present very unsavoury qualities it is difficult to say. The fact remains, however, that the prefix อี้ when applied to a woman shows the lowest social status of that person.

Mothers, it is true, often call their female children อี้ this or อี้ that, perhaps in loving banter and the use of this prefix in such a case may be due to a memory of the time then the word อี้ was honorific.

17. For some reason or other linguistic prudes cannot write or use อี้ without sustaining a moral shock and in their horror have even gone so far as to assume that when used as a prefix to the name of an animal or bird it is derogatory, and they have gone so far as to transform อี้ into Nang (นาง) so that the bird swift has now become นกนางแอ่น Nok Nang Enn. I have seen attempts made to alter this word for many years past and this alteration took official form when the word for the disease meningitis became Nok Nang Enn. (นกนางแอ่น). I have also noticed that an attempt is being made to describe the barking deer by the use of the word keng เก้ง without the prefix อี้. Now the word in general use is อีเก้ง and I am sure that if one went into a forest and asked the people whether any *keng* เก้ง were to found therein, they would not know what one was referring to. I might even go a step further and point out that this delightful prefix อี้ is often used when referring to men. It is not uncommon for a Northern Thai to speak of his father as Ee Pho อีพ่อ or for a Siamese to speak of an elder as "Ee Ta Kae" (อีตาแก่). The counter part of the female prefix อี้ is the male prefix อ้าย. Even to-day Thai princes in the Shan States and other territories speak of

their male children as "ai", whereas in Siam it is used only for murderers and convicts. I must crave pardon for this digression from the subject matter of this paper which deals with a matter of natural history, but this philological puzzle is intriguing.

PART VI.

Literature on the Subject of the Edible-Nest Birds.

18. There is a considerable quantity of literature in the Chinese and other Eastern languages, dealing with the habits of these *Collocalia* and the esteem in which their nests are held by the people of the East. The literature which deals with their habits is largely concerned with the myths, legends, fables and stories which have grown up round these mystery birds. It would seem that but few of the writers were writing from first hand knowledge, for to obtain such knowledge by unskilled persons would be a matter of considerable personal peril which might result in death.

19. The first European traveller to draw the attention of Europe to these birds and their nests would seem to have been Jacobus Bontius who, writing in 1629, recorded that he believed the nests to be made from the foam of the sea, a belief which is shared by some Chinese writers.

Mandelslo, writing in 1639, states that the nests in the Malay country were found on rocks by the sea-side and are held in such esteem by the Chinese that they sell them three to four crowns the pound.

Dr. John Anderson, F. R. S., who visited the Archipelago in 1881-82, states in his book *The Selungs of the Mergui Archipelago*:— "Another and valuable substance found in the Archipelago is the edible nests of *Collocalia spodiopygia*. The Selungs, however, as far as I could learn, do not collect the nests systematically but as they know their value, they always secure any when they are accessible and use them for barter. The Malays appear to be the chief collectors of these objects, and visit the outer islands and others near the mainland, such as Elephant Island described by Commander Carpenter, confining their operation to the North East monsoon, when the sea is calm."

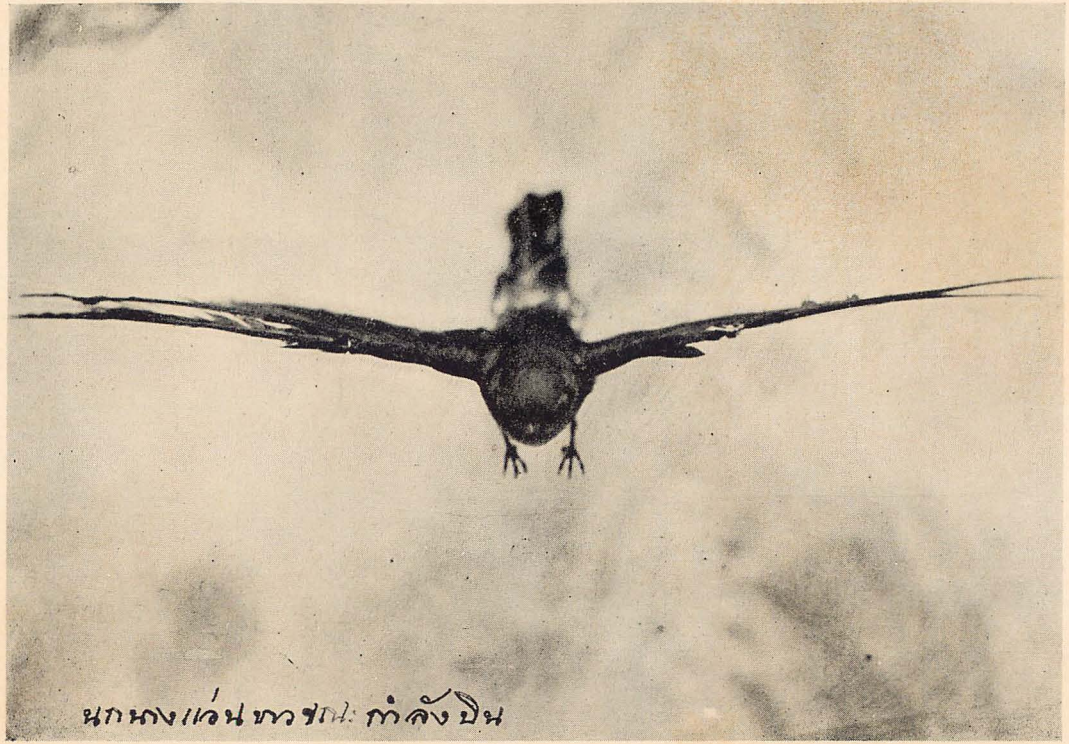
20. Oriental writers of medical works, particularly Chinese, go into rhapsodies in their praise of the medicinal, dietetic and tonic value of these nests. Some of these writers are so extravagant in their eulogies that they believe that the nests when combined with ginseng are capable of restoring life to a person on the point of death. In northern China where the winter is bitterly cold and the people have not the means to keep themselves warm, it is a general belief that the blood congeals and can only be liquified or perhaps thawed by drinking a soup made from these nests and this is one of the reasons why the nests are held in such esteem in China. The supply is limited, therefore the prices are high and the poor folk have to content themselves with second and third preparations of these nests. I have read hundreds of Chinese works dealing with the history and the lives of the people, but although frequent references are made to the medicinal value of ginseng known to the Siamese as Som (โสม), I have never come across any reference to the edible nests. This is somewhat curious for it is known that the Chinese esteem these nests highly.

There is a book written by D. A. Sallet entitled "les Nids d'Hirondelles les Salanganes et leurs nids comestibles" which was published in Hanoi a few years ago. This work deals with the history, tradition and folklore connected with *Collocalia.* It also tells us something about the geographical distribution of these birds, the value of their nests, the esteem in which they are held and gives some recipes for the cooking of the nest.

21. I append to this paper photos of *C. francica* and *C. innominata* on the wing as during flight and also photos of the same birds sitting on their eggs during the process of hatching, these representing the natural condition in the caves, because in these photos the birds are alive. There are also two photos of the nests, one of *C. francica* and one of *C. innominata* as well as a photo of the birds perching on the rocks.

DISCUSSION.

Mr. C. J. House said that he was familiar with Dr. E. P. Dunlap's classical paper on this subject, written nearly thirty years ago.

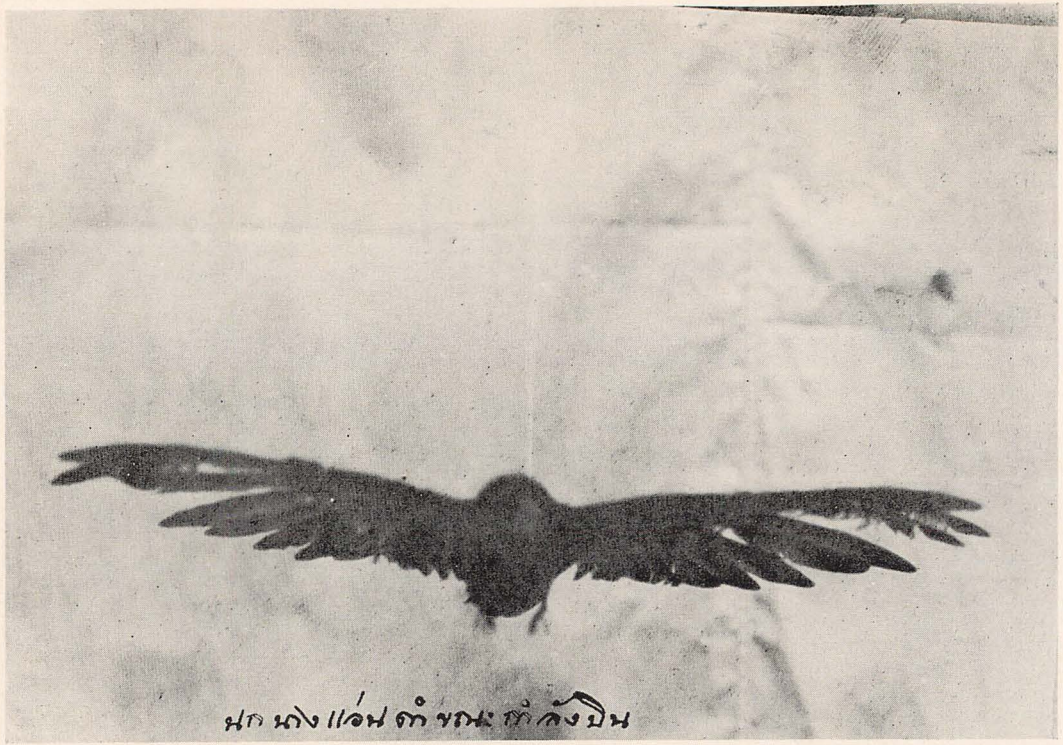


Collocalia Francica.

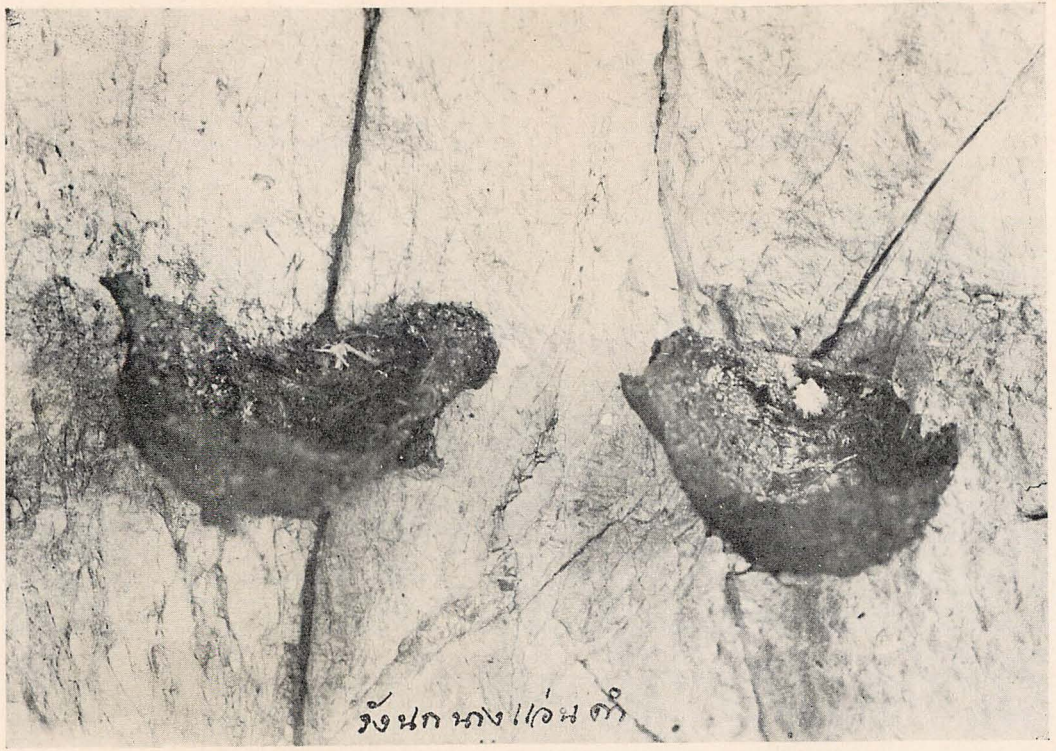
C. Francica perching on the rocks.

Nests of Collocalia Francica.

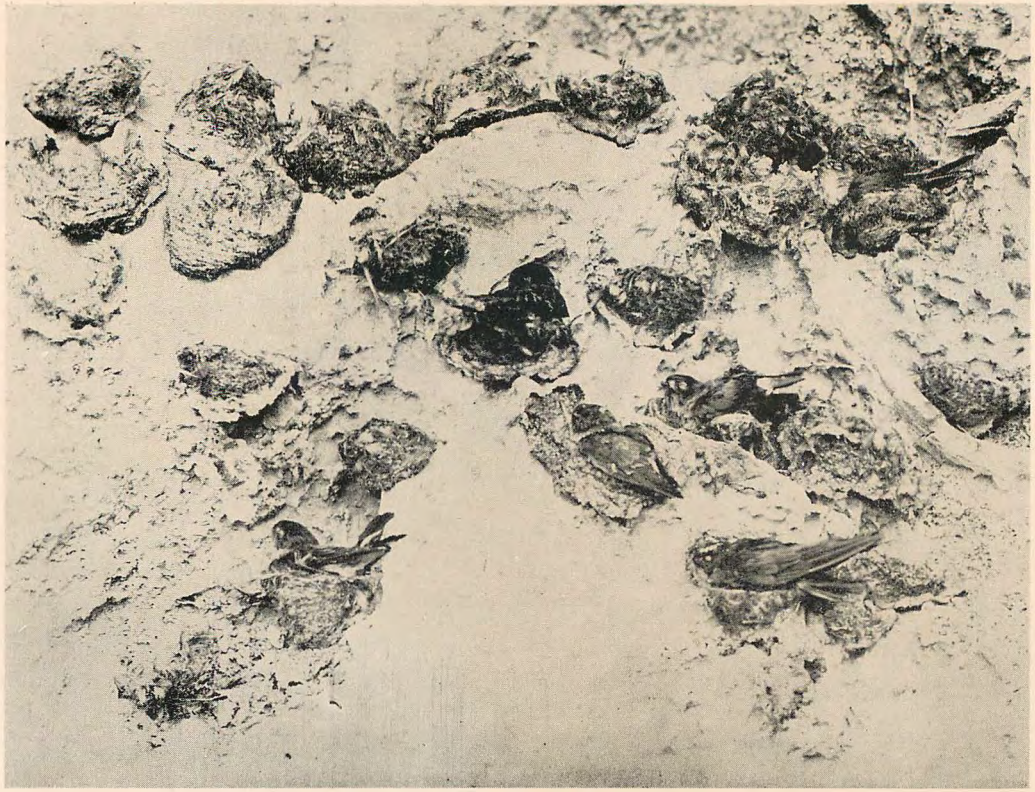
C. Francica hatching her eggs in a cave.



Collocalia Innominata.



Nests of Collocalia Innominata.



C. Innominata hatching her eggs in a cave.

He would like to congratulate the author of the present paper on having much enlarged the bounds of knowledge of these interesting but little-known birds. He once had occasion to analyse a sample of edible birds' nest sent from Chumporn. It was a highly nitrogenous material containing nearly 50% of protein and 7½% of mineral matter, most of which was lime. It was a pity that the feeding habits of the birds were not more accurately known but he was sure that they did more than *kin lom* (eat air) on their long flights. He supposed that they were alert enough to catch a considerable number of insects on the wing to provide the rich diet necessary for such a prolific output of nests.

บัญชีรายชื่อเกาะที่มีรังนกในอ่าวสยามฝั่งตวันตก.

เลขที่	ชื่อเกาะ	ท้องที่	
		อำเภอ	จังหวัด
๑	เกาะทะลุ	ท่าตะเภา	ชุมพร
๒	เกาะกะโหลก	,, ,,	,, ,,
๓	เกาะงาม	,, ,,	,, ,,
๔	เกาะสะ	,, ,,	,, ,,
๕	เกาะมัตรา	,, ,,	,, ,,
๖	เกาะแรต	,, ,,	,, ,,
๗	เกาะวะ	,, ,,	,, ,,
๘	เกาะมะพร้าว	,, ,,	,, ,,
๙	เกาะกา	,, ,,	,, ,,
๑๐	เกาะดังกาจิว	,, ,,	,, ,,
๑๑	เกาะทองหลาง	,, ,,	,, ,,
๑๒	เกาะลก	,, ,,	,, ,,
๑๓	เกาะลิกง	ปทิว	,, ,,
๑๔	เกาะรัง	,, ,,	,, ,,
๑๕	เกาะร้านเป็ด	,, ,,	,, ,,
๑๖	เกาะไข่	,, ,,	,, ,,
๑๗	เกาะร้านไก่	,, ,,	,, ,,
๑๘	เกาะเข้	,, ,,	,, ,,
๑๙	เกาะหลัก	เกาะสมุย	สุราษฎร์ธานี
๒๐	เกาะเมริกัน	,, ,,	,, ,,

เลขที่	ชื่อเกาะ	ท้องที่	
		อำเภอ	จังหวัด
๒๑	เกาะปากอ่แรต	เกาะสมุย	สุราษฎร์ธานี
๒๒	เกาะนกเภา	,, ,,	,, ,,
๒๓	เกาะวัวจิว	,, ,,	,, ,,
๒๔	เกาะยิ่ว	,, ,,	,, ,,
๒๕	เกาะกา	,, ,,	,, ,,
๒๖	เกาะส้ม	,, ,,	,, ,,
๒๗	เกาะเชือก	,, ,,	,, ,,
๒๘	เกาะลุหรือเกาะตาขาว	,, ,,	,, ,,
๒๙	เกาะกล้วย	,, ,,	,, ,,
๓๐	เกาะไอตู	,, ,,	,, ,,
๓๑	เกาะพะลวย	,, ,,	,, ,,
๓๒	เกาะเต้าปูน	,, ,,	,, ,,
๓๓	เกาะมุดแดง	,, ,,	,, ,,
๓๔	เกาะคางหัก	,, ,,	,, ,,
๓๕	เกาะหินหลัก	,, ,,	,, ,,
๓๖	เกาะอ่างทอง	,, ,,	,, ,,
๓๗	เกาะวัวอ่เตะ	,, ,,	,, ,,
๓๘	เกาะไม้ไผ่รวก	,, ,,	,, ,,
๓๙	เกาะอ้ายแจ้	,, ,,	,, ,,
๔๐	เกาะวัวตลับ	,, ,,	,, ,,
๔๑	เกาะผี	,, ,,	,, ,,

เลขที่	ชื่อเกาะ	ท้องที่	
		อำเภอ	จังหวัด
๔๒	แม่เกาะว้าวตาหลำ	เกาะสมุย	สุราษฎร์ธานี
๔๓	เกาะสามเส้า	,, ,,	,, ,,
๔๔	เกาะงักันตังใหญ่	,, ,,	,, ,,
๔๕	เกาะงักันตังน้อย	,, ,,	,, ,,
๔๖	เกาะหนุมาน	,, ,,	,, ,,
๔๗	เกาะวังจับ	,, ,,	,, ,,
๔๘	เกาะรอก	,, ,,	,, ,,
๔๙	เกาะว่า	,, ,,	,, ,,
๕๐	เกาะหนอแรต	,, ,,	,, ,,
๕๑	เกาะงาม	,, ,,	,, ,,
๕๒	เกาะนายพูด	,, ,,	,, ,,
๕๓	เกาะหินดับ	,, ,,	,, ,,
๕๔	เกาะหัวกล้อง	,, ,,	,, ,,
๕๕	เกาะแป๊ะยักษ์	,, ,,	,, ,,
๕๖	เกาะเหล่าหยู้	,, ,,	,, ,,
๕๗	เกาะหว้าใหญ่	,, ,,	,, ,,
๕๘	เกาะหว้าน้อย	,, ,,	,, ,,
๕๙	เกาะตุ้งกู	,, ,,	,, ,,
๖๐	เกาะกระแตนอก	,, ,,	,, ,,
๖๑	เกาะกระแตใน	,, ,,	,, ,,
๖๒	เกาะกง	,, ,,	,, ,,

เลขที่	ชื่อเกาะ	ท้องที่	
		อำเภอ	จังหวัด
๖๓	เกาะห้า	เกาะสมุย	สุราษฎร์ธานี
๖๔	เกาะเจ็ดศมูน	,, ,,	,, ,,
๖๕	เกาะแมลงปอง	,, ,,	,, ,,
๖๖	เกาะดิน	,, ,,	,, ,,
๖๗	เกาะดุ	,, ,,	,, ,,
๖๘	เกาะพงัน	,, ,,	,, ,,
๖๙	เกาะเต่า	,, ,,	,, ,,
๗๐	เกาะสี่ เกาะห้า	ปากพยูน	พัทลุง
๗๑	เกาะเหลื่อบ	เกาะหลัก	ประจวบคีรีขันธ์
๗๒	เกาะพิง	,, ,,	,, ,,
๗๓	เกาะพัง	,, ,,	,, ,,
๗๔	เกาะสง	,, ,,	,, ,,
๗๕	เกาะกัง	,, ,,	,, ,,
๗๖	เกาะรังใหญ่	,, ,,	จันทบุรี
๗๗	เกาะรังเล็ก	,, ,,	,, ,,
๗๘	เกาะตุ้น	,, ,,	,, ,,
๗๙	เกาะสิง	,, ,,	,, ,,
๘๐	เกาะสัง	,, ,,	,, ,,
๘๑	เกาะปลิตง	บำบัง	สตูล
๘๒	เกาะบัง	,, ,,	,,
๘๓	เกาะการาบ	,, ,,	,,

เลขที่	ชื่อเกาะ	ท้องที่	
		อำเภอ	จังหวัด
๘๔	เกาะไปรม่าหนา	บำบัง	สตูล
๘๕	เกาะลิด์	ทุ่งหว้า	,,
๘๖	เกาะล่าตะห์	,, ,,	,,
๘๗	เกาะลินน	,, ,,	,,
๘๘	เกาะโลมะห์	,, ,,	,,
๘๙	เกาะตงกู	,, ,,	,,
๙๐	เกาะส่ะระบัน	,, ,,	,,
๙๑	มุก	กันตัง	ตรัง
๙๒	ปุเหลาลินเจน	,, ,,	,,
๙๓	หยอกกาหลิ์	,, ,,	,,
๙๔	กูดา	,, ,,	,,
๙๕	เกาะจากาบ	,, ,,	,,
๙๖	เกาะเหลาเหลือง	หยงสตา	,,
๙๗	เกาะเภตรา	,, ,,	,,
๙๘	เกาะตะใบ	,, ,,	,,
๙๙	เกาะตุโหรยใหญ่	,, ,,	,,
๑๐๐	เกาะตุโหรยติดกับเกาะตะใบ	,, ,,	,,
๑๐๑	เกาะยา	สิเกา	,,
๑๐๒	เกาะหลอหลอใหญ่	,, ,,	,,
๑๐๓	เกาะหลอหลอน้อย	,, ,,	,,
๑๐๔	เกาะพีพี	ปากน้ำ	กะบี่

เลขที่	ชื่อเกาะ	ท้องที่	
		อำเภอ	จังหวัด
๑๐๕	เกาะทะลุ	ปากน้ำ	กะบี่
๑๐๖	เกาะลาแปง	,, ,,	,,
๑๐๗	เกาะประดา	,, ,,	,,
๑๐๘	เกาะลมา	,, ,,	,,
๑๐๙	เกาะตุกดหลิมา	เกาะลันตา	,,
๑๑๐	เกาะอิ—เบ	ท้ายช้าง	พังงา
๑๑๑	เกาะบุหงาใหญ่	,, ,,	,, ,,
๑๑๒	เกาะบุหงาน้อย	,, ,,	,, ,,
๑๑๓	เกาะโสบ	,, ,,	,, ,,
๑๑๔	เกาะโรบ	,, ,,	,, ,,
๑๑๕	เกาะกาหลาด	,, ,,	,, ,,
๑๑๖	เกาะเดียก	,, ,,	,, ,,
๑๑๗	เกาะหะลุ	,, ,,	,, ,,
๑๑๘	เกาะจำปา	,, ,,	,, ,,
๑๑๙	เกาะงิไล	,, ,,	,, ,,
๑๒๐	เกาะชุนริด	,, ,,	,, ,,
๑๒๑	เกาะปา—ไล	,, ,,	,, ,,
๑๒๒	เกาะลิเอะ	,, ,,	,, ,,
๑๒๓	เกาะดูดูใหญ่	,, ,,	,, ,,
๑๒๔	เกาะดูดูน้อย	,, ,,	,, ,,
๑๒๕	เกาะหนี	,, ,,	,, ,,

เลขที่	ชื่อเกาะ	ท้องที่	
		อำเภอ	จังหวัด
๑๒๖	เกาะตาใบ	ท้ายช้าง	พังงา
๑๒๗	เกาะซากา	,, ,,	,, ,,
๑๒๘	เกาะบิเละ	,, ,,	,, ,,
๑๒๙	เกาะงัง	,, ,,	,, ,,
๑๓๐	เกาะเรียบ	,, ,,	,, ,,
๑๓๑	เกาะตริง	,, ,,	,, ,,
๑๓๒	เกาะกะ	,, ,,	,, ,,
๑๓๓	เกาะอาดัง	,, ,,	,, ,,
๑๓๔	เกาะอุเชี่ย	,, ,,	,, ,,
๑๓๕	เกาะเหด้าหัง	,, ,,	,, ,,
๑๓๖	เกาะอุดัง	,, ,,	,, ,,
๑๓๗	เกาะยาดิง	,, ,,	,, ,,
๑๓๘	เกาะนากาหญ้า	,, ,,	,, ,,
๑๓๙	เกาะบังปง	,, ,,	,, ,,
๑๔๐	เกาะนมสาว	,, ,,	,, ,,
๑๔๑	เกาะสอดพี่น้อง	,, ,,	,, ,,
๑๔๒	เกาะถ้ำชาวเล	,, ,,	,, ,,