

FROM TONKIN TO INDIA

Point of Departure of Routes and Names of Rivers about which Information was collected.	
KHAMTI— <i>continued</i>	valley of the Brahmaputra); 17th, Keloum, Assamese; 18th, Chuika, <i>id.</i> ; 19th, Talap, <i>id.</i> (by boat on the Brahmaputra)—point where the railway from Dibrugarh begins—altogether 19 days. But Huoé-Daung, prime minister and nephew of the king of Khamti, who was my informant on the above itineraries, only estimated our route by the Phungan-Boum at 19 days, whereas it took 22; so that I believe 22 days should be allowed for this one also, and 27 or 28 for the first of the three.
ROUTES INTO BURMAH.	<p><i>Note.</i>—Huoé-Daung had twice made the journey to Bhamo and Mandalay, and showed me proofs that each occasion was genuine. He gave in detail the stages on the two routes which he had taken. Inasmuch as he was intelligent and endowed with a remarkable memory, and as his information concerning the Assam routes was confirmed by experience, I am inclined to place reliance on that which he furnished with regard to Burmah. Yet, in the <i>Map of the Khimpour District, Bor-Kampti Country, Naga Hills, etc.</i>, published in 1894 by the Geographical Service of India, there is a route from Khamti to Bhamo traced in accordance with received intelligence, in which not one of the names mentioned by Huoé-Daung appears. Can this be a third route? or is it possible that the information supplied to the English by the Kachin natives was intentionally erroneous?</p> <p>Route 1.—Twenty-nine days from Khamti to Mogoung (Burmese name) or Mainghong (Thai name), whence by rowing or steam boat to Bhamo.</p> <p><i>Stages</i>—1st day, Langdao (Khamtis); 2nd, Moun-yac (Singphos or Kachins, Burmese name for independent Singphos); 3rd, Kauka; 4th, Nam-doungra; 5th, N'daian; 6th, Lecho; 7th, Hasa; 8th, Kaition; 9th, N'kam Lakan; 10th, N'da Kelon; 11th, N'ouat Tsaokan; 12th, Haoutonka; 13th, Menlon; 14th, Deroupom; 15th, Paningkou; 16th, Naïnting (from the 2nd to the 16th day inclusive, independent Singphos); 17th, N'bom; 18th, Logna; 19th, N'siensoing; 20th, Ningkon; 21st, Menoupom; 22nd, Tinka; 23rd, Lamkonglo; 24th, Medouzop; 25th, Lopan; 26th, Maupangla (from the 17th to the 26th day inclusive, subject Singphos); 27th, Poukan (Thais or Shans); 28th, Loili (Thais); 29th, Mogoung.</p>

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<p>Point of Departure of Routes and Names of Rivers about which Information was collected.</p>	
<p>ROUTES INTO BURMAH —continued</p>	<p>Route 2.—Follows the valley of the western branch of the Irawadi and goes in 33 days to Bhamo.</p> <p><i>Stages</i>—(1) Tsaukan (Khamtis); (2) Kankiou (Khamtis); (3) Keunong (Khanungs, Khamti name for Kioutses); (4) N'oan (independent Singphos); (5) N'deun; (6) Ningpien; (7) Thaou-masa (from the 7th to the 18th, ten days of very broken and almost barren country); (18) Komsen (from the 4th to the 18th day inclusive, independent Singphos); (19) Melgouchop; (20) Seulo; (21) Melou; (22) Ouavan; (23) Ouavan; (24) Baokouka; (25) Sinyangka; (26) Pangin (uninhabited, <i>marked on English maps</i>); (27) Pan-kietsop (uninhabited, <i>marked on English maps</i>); (28) Ouaton and Nong-nang (from the 19th to the 28th day, subject Singphos); (29) Moung-hom (Thais or Shans); (30) Maingna (Thais, rowing boat; <i>marked on English maps</i>); (31) Ouangmo; (32) Katkiou (steamer); (33) Bhamo.</p> <p>Finally, there is a third route, a combination of the other two; from Hasa (7th day of Route 1) to Komsen (18th day of Route 2), in 7 or 8 days, by Singin, N'baounon, and Kopian.</p>

APPENDIX B

BY THE AUTHOR

I

NATURAL HISTORY

1. MAMMALS¹

On the Collection of Mammals brought from Yünnan by Prince Henry of Orleans

By E. DE POUSARGUES

THE 60 specimens of mammals collected by Prince Henry of Orleans in the course of his journey across Yünnan may be divided into 28 species, of which 12 had not been previously recorded, except in the province of Setchuen and the principality of Moupin, or, in other words, on the eastern slope of the plateau of Thibet. These 12 have been marked by an asterisk in the subjoined list. This extension of Thibetan forms into Yünnan need not surprise us, since the whole of the north-west part of this province of China is very elevated, its orographic system is closely connected with that of Setchuen, of which it is in reality only the southern prolongation and termination, and the border between the two districts is purely a virtual and administrative one. On the other hand, none of the southern portion of Yünnan differs geographically from Burmah, Upper Tonkin, and South-East China, and we recognise in the mammalogical types brought from this region by Prince Henry most of the species already recorded by Anderson on the frontiers of Yünnan and Burmah, and by Swinhoe in the south-eastern provinces of the Chinese Empire.

No new type figures in the following list, but many specimens have allowed of the elucidation of several hitherto obscure points touching the affinity of certain species, whilst others, representing forms which the Museum did not before possess, will prove a valuable addition to our galleries.

*NECTOCAL ELEGANS (*A.-M. Edw.*); native name, *Khio-chi-oua*; 4 specimens.

*UROPSILUS SONICIPES (*A.-M. Edw.*); native name, *Chi-oua-san-djiri*; 1 specimen.—

The existence in the north of Yünnan of this hitherto rare member of the Insectivora disposes of my recently published hypothesis restricting the habitat of the *Uropsilus* to the principality of Moupin, and at the same time implies its presence in Setchuen.

AILURUS FULGENS (*F. Cuv.*); 2 specimens.—The Panda is indicated by Anderson as more common on the borders of Burmah and Yünnan than in the Himalayas.

MARTES FLAVIGULA (*Bodd.*); 1 specimen.—Anderson makes no mention of this

¹ Extract from the *Bulletin du Muséum d'histoire naturelle*, 1896, No. 5.

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species, which, however, propagates in the west across Burmah and Assam as far as Nepaul, where it has been recorded by Hodgson.

LUTRA MONTICULA? (Hodgs.); 1 specimen.—The skull of this otter having been lost, its species is not capable of strict definition.

CANIS LUPUS, var. *PALLIPES* (Syk.); 2 specimens.

PAGUMA LARVATA (Tem.); 5 specimens.—The province of Yünnan would seem to mark the western limit of the habitat of this *Paradoxura*; no writer has recorded it in Burmah, while it is common all over the south of China from Eastern Thibet to Formosa.

VIVERRA ZIBETHA, var. *ASHTONI* (Swinh.); 5 specimens.—In this variety the black dorsal line, the black and white circles below the neck, and the large clearly marked rings on the tail, merge with the rest of the hair in a slightly speckled and almost regular grey tint.

FELIS TIGRIS (L.); 1 specimen.

FELIS PARDUS (L.); 5 specimens.—This panther belongs to the variety *F. Fontanieri* (A.-M. Edw.).

FELIS PARDUS, var. *MELAS* (Desm.); 1 specimen.—These three large members of the feline tribe are also recorded by Anderson in Western Yünnan.

FELIS BENGALENSIS, var. *PAPDOCHROUS* (Hodgs.); native name, *Chu-ndzeu*; 1 specimen.—The Museum did not before possess any example of this beautiful variety so clearly characterised by the shape of the spots on its coat. Anderson's description applies exactly to the specimen in question: "The hair is of a bright yellow colour mottled with numerous spots in shape like rosettes, and with small black rings with centres of a tawny hue darker than the pale shade at the edge of the rosettes. Of the four black stripes noticeable on the head the two outer ones branch into two lines widening towards the shoulder-blades and enclosing a space which is brown like the rosettes."

FELIS MOORMENSIS (Hodgs.); 1 specimen.—As in the last case, this species had not up till now been represented in our galleries. The specimen offered by Prince Henry of Orleans is that of a young one only half-grown; its coat of uniform russet brown shows on the forehead and cheeks the grey and white streaks edged with black which are characteristic of the species.

FELIS MOORMENSIS, var. *NIGRESCENS* (Hodgs.); 1 specimen.—Here the dark grey coat has only preserved the shade of the form type in a large reddish-brown patch between the shoulders, but the usual stripes on the face and the white extremity under the tail are sufficient evidence of the specific identity of this and the preceding.

Besides this dark variety of the *F. MOORMENSIS*, another with a definitely spotted¹ coat has been recorded without even a sub-specific denomination by Blyth in 1863; but this latter may probably belong to the following species.

**FELIS TRISTIS* (A.-M. Edw.); 1 specimen.—Numerous skins of this spotted species have been sent to us at various times from Setchuen by Prince Henry of Orleans and the missionaries at Tatsien-lou, and an examination of them has admitted of an exact description of their affinities. It is with the *F. MOORMENSIS* that the *F. TRISTIS* is most nearly allied, and not, as supposed by Elliott, with the *F. MARMORATA* (Mart.), of which the tail is incomparably longer and the face markings very different. In this latter respect, on the contrary, there is complete similarity between the *F. MOORMENSIS* and the *F. TRISTIS*, and the tail of the latter not only presents the same proportions and shape as that of *F. MOORMENSIS*, but also the same shade distribution at the extremity of black above and white beneath. Further, in all the specimens of the *F. TRISTIS* that I have investigated there was that reddish band between the shoulders which I remarked above in the dark variety of the *FELIS MOORMENSIS*.

¹ Blyth: a Nepalese specimen (*F. Moormensis*) in the India Museum is very distinctly and conspicuously spotted (*P.Z.S.*, 1863, p. 185).

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- **FELIS LYNX*, var. *ISABELLINA* (*Blyth*); 1 specimen.
- **PTEROMYS YUNNANENSIS* (*Anders.*); 4 specimens, of which one young one was exactly similar to the adults.
- **PTEROMYS XANTHIPES* (*A.-M. Edw.*); native name, *Tang-la*; 3 specimens.—This species, described according to examples obtained at Tchely, was subsequently met with at Setchuen.
- **SCIURUS PERNYI* (*A.-M. Edw.*); native name, *Thong-li*; 4 specimens.
- **SCIURUS MACCLELLANDI* (*Horsf.*); native name, *Thong-tchra*; 2 specimens.
- **MUS CHEVRIERI* (*A.-M. Edw.*); native name, *La-kha-chi-oua*; 3 specimens.
- **RHIZOMYS VESTITUS* (*A.-M. Edw.*); native name, *Gni-ma-chi-oua*; 3 specimens.—
By its large dimensions, and above all by the extreme shortness of its tail, this species is very distinct from those of the same race in India and Indo-China.
- **LAGOMYS TIBETANUS* (*A.-M. Edw.*); native name, *Aoura*; 1 specimen.
- **NEMORHEDUS GRISEUS* (*A.-M. Edw.*); 1 specimen.—This young one scarcely measured 2 ft. 6 in. from the nose to the root of the tail; the head was still undeveloped; the dark-brown dorsal line was more strongly marked than in the adult, beginning on the forehead in a small lock of bristly hair, and continuing unbroken by the nape of the neck and the spine to the tuft at the end of the tail.
- **NEMORHEDUS EDWARDSI* (*Dav.*); 2 pairs of horns.
- **BUDORCAS TAXICOLA* (*Hodgs.*); 2 pairs of horns.
- **MOSCHUS MOSCHIFERUS* (*L.*); 1 specimen.
- **CERVULUS LACRYMANS* (*A.-M. Edw.*); 1 specimen.

On a Gibbon of a New Species from Upper Tonkin

By E. DE POUSARGUES

HYLOBATES HENRICI (nov. spec.).

H. colore flavo; supra pilis ad basim intenso, apicem versus pallide flavescentibus cinereoque dilutissime tinctis; infra pilis unicoloribus: pectore inferiore, axillis abdomineque e stramineo luteis; sed genis, mento, gula, collo inferiore pectoreque mammarum tenus splendide fulvis, rutilis, quasi auratis. Vertice, nucha colloque superiore mediis nigerrima notatis macula elongata, angusta, fusiforme, longiore ter quam latiore et abrupte circumcisa.

♀ Adult. Type, Lai-Chau, Tonkin, 1892. Prince Henry of Orleans.

The Museum unfortunately only possesses one incomplete skin of this Gibbon, mutilated of its fore members from the wrist and of its hind members from the knee. One of the callosities as well as the genital and anal organs have also disappeared. The development of the breasts indicates a full-grown female. The following are the measurements:—

	Ft.	In.
Length of head and body from nose to callosities	2	5 $\frac{1}{8}$
„ upper arm	0	9 $\frac{1}{2}$
„ fore arm	0	11 $\frac{1}{2}$

The prevailing tint of the coat is a glossy bright yellow varying in intensity in different parts of the body from pale to golden. On the upper surface of the head and trunk the hair is thick, long, and fleecy, merging from deep yellow at the roots into a lighter slightly grised shade towards the extremities. This grey

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tinge is much less extensive and pronounced on the outer hind part of the members, where the fur is shorter and of a warmer hue. On the fore limbs this colouring is uniform to above the wrist, and probably continued so on the upper side of the paws, though it is not possible to speak with certainty in regard to the extremities of the hind legs in consequence of their having been amputated too high. A large longitudinal black patch starts from the centre of the vertex $1\frac{3}{8}$ in. behind the line of the eyebrow, widening over the top of the cranium, maintaining an even breadth for a space, and gradually contracting again as it follows the middle of the back of the neck from the nape to the beginning of the shoulder-blade, where it fines to a point. This marking is in no way similar in shape to the more or less dark and sometimes vaguely defined semicircular cap in other species. *H. pileatus* (Gr.), *H. Mulleri* (Mart.), *H. Javanicus* (Mtsch.).

In the monkey in question the length of this streak, $5\frac{1}{2}$ in., much exceeds its breadth, which at its maximum is only $1\frac{3}{8}$ in. Its width is clearly defined, giving it the appearance of a long black stem in strong contrast to the surrounding yellow surface. On the brow in front of this black patch the hair is of a uniform rather light yellow turning to deep orange tawny on the cheeks, sides of head, chin, throat, under side of neck, and top of the chest as far as the breasts. Upon the remainder of the chest, stomach, and inner face of the limbs the covering is fairly long but not thick, and of a regular pale yellow. Just over the eyes the yellowish-white hair mixed with a few silky black threads traces a narrow border on the superciliary arch too faint to merit the name of a frontal band. The bald skin of the face is dark brown; and the ears, of the same colour, are rounded, minute, and entirely hidden in the surrounding growth, although bare themselves save for some long black hairs on their inner edge, which meet at the top of the cavity in a thin tuft.

On account of these different peculiarities I have thought it proper to distinguish this Gibbon specifically under the name of *Hylobates Henrici* in honour of Prince Henry of Orleans, to whom its discovery is due. This particular skin was taken at Lai-Chau (Tonkin), a little to the north of the Black River and not far from the southern frontier of Yunnan.

I do not believe the *H. Henrici* can be considered to be a hitherto unrecorded variety of an already known species in the regions of the vicinity. The females of the *lar* and *hoolock* Gibbons from Burmah and the north of Siam often change their coat to a yellow somewhat resembling that of the *H. Henrici*, but paler and mostly of a yellowish-grey, with the white whiskers and frontal band always visible. It is further to be noted that neither Blyth nor Anderson, who had many opportunities for close study of a large number of these animals, have ever recorded the presence of a black cephalic patch, and this peculiarity is moreover cited as a distinctive characteristic by M. Matschie in his review of the species of the genus *Hylobates*.¹

Among the females of the species *H. pileatus* (Gr.) of Siam and Cambodia, the roots of the hair are not yellow, but vary from white in the young to brown turning to grey in the adults; the black cephalic patch, either oval or semicircular, is shaped like a skull-cap of about equal length and breadth, which only involves the vertex, and is divided from the eyebrow line by a narrow white band; while, lastly, as soon as the first signs of the coat become manifest, there appears on the chest a corresponding black patch which spreads rapidly with the maturity of the animal, covering the abdomen, mounting beneath the neck to the throat, and in old females reaching even the chin and the whiskers.

Would it not seem likely, on the other hand, that the *H. Henrici* may be identical with the yellow Gibbon of the island of Hainan which Swinhoe² has

¹ Matschie. — *Sitzber. Ges. naturf. Fr.*, Berlin, pp. 209, 210. 1893.

² *Proc. Zool. Soc. London*, p. 224. 1870.

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merely recorded in these few words: "*The Golden-silk Yuen which is yellow . . . difficult to procure*"? Careful research throughout that island, on the south-west coasts of China, and in the north of Tonkin, alone can settle the question and determine at the same time if this yellow colour is common to both sexes of this Gibbon, or if there is a sexual dichroism as in the case of other species.

2. BIRDS

*Note on the Birds collected in Yünnan by Prince Henry of Orleans in the course of his recent Journey from Tonkin to India*¹

By M. E. OUSTALET

From his travels through Tonkin, Yünnan, the independent parts of Upper Burmah, Southern Thibet, and Assam, Prince Henry of Orleans has brought back a large number of birds, which he has generously presented to the Museum of Natural History. This collection is one of great interest, not only on account of the presence of several new forms, but also for the hitherto unpublished particulars which it furnishes upon the ornithological fauna of Yünnan, of which province the western part alone, in its contiguity to Burmah, had been explored from the zoological point of view by the English naturalist John Anderson in 1868 and 1875. The Prince and his companions, on the contrary, traversed the south, the north-west, and the centre of Yünnan, which they entered in the beginning of February 1895 by way of Laokay on the Red River. After first proceeding in a westerly direction by Manhao and Ssumao to the Mekong, they ascended to the north, past Tali-Fou, and with many windings and repeated crossings of the great river arrived at Tsekou on the 19th of August. Profiting by an enforced delay of two weeks in this locality, Prince Henry remitted thence to the Museum, as he had already done from Tali-Fou, a portion of his collections, and obtained with the help of the missionaries stationed at Tsekou new specimens, which are not the least interesting part of the whole. Tsekou itself is really situated in Thibetan territory at a comparatively slight distance south of the mission post of Yerkalo, whence the Abbé Desgodins had sent the Museum many rare specimens, and of the route from Batang to Tatsien-lou which Prince Henry and M. Bonvalot followed some years ago on their way to Setchuen, along which they made such a fine collection at the time. Tatsien-lou, which, thanks to Mgr. Biet and Fathers Mussot, Soulié, and Dejean, has lately furnished rich ornithological contributions to the Museum, itself forms part of that province of Setchuen where the Abbé A. David had made several of his most important discoveries. We are not surprised, therefore, to meet in the series of birds arranged by Prince Henry at Tsekou with many forms of the Upper Mekong, Thibet, and Setchuen that were already familiar in the accumulations of the above-mentioned naturalists. As I have before had occasion to remark, the valley of the Mekong, in the upper part of which Yerkalo and Tsekou are situated, constitutes one of the natural outlets by which a part of the ornithological fauna of Thibet and Setchuen finds its way into Yünnan and Indo-China.

From Tsekou the expedition turning sharp to the west crossed successively the Salwen, the Irawadi, and their affluents, and on the 24th December 1895 reached Sadiya in Assam, where the perilous part of the journey ended.

During this period of eleven months Prince Henry of Orleans secured nearly 200 specimens of birds, the majority of which now figure in the public collection of the Museum. A careful study of these, just completed, shows them to belong to

¹ Extract from the *Bulletin du Muséum d'histoire naturelle*, 1896, Nos. 5 and 7.

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121 species, more than two-thirds of which were not met with by Anderson. Of the latter the following is the list :—

1. *Palaeornis Salvadorii* (Oust.).
2. *Accipiter nisus* (L.).
3. *Cerchneis tinnunculus* (L.).
4. *Glaucidium Brodiei* (Burt).
5. *Cyanops Davisoni* (Hume).
6. *Gecinys Guerini* (Malh.).
7. *Picus (Hypopicus) hyperythrus* (Vig.).
8. *Lynx torquilla* (L.).
9. *Cuculus poliocephalus* (Lath.).
10. *Upupa epops* (L.).
11. *Æthopiga Seheria*, var. *labecula* (McCl.).
12. *Dicaeum ignipectus* (Hodgs.).
13. *Chloropsis aurifrons* (Tem.).
14. *Merula Gouldi* (J. V.).
15. *Turdus ruficollis* (Pall.).
16. *T. pallidus* (Tem.).
17. *Monticola cyanea* (L.).
18. *Ruticilla aurora* (Gm.).
19. *R. frontalis* (Vig.).
20. *Rhyacornis fuliginosa* (Vig.).
21. *Nemura rufilata* (Hodgs.).
22. *Sutoria longicaudata* (Lath.).
23. *Brachypteryx cruralis* (Hodgs.).
24. *Notodola leucura* (Hodgs.).
25. *Prinia gracilis* (Frankl.).
26. *Phylloscopus lugubris* (Tick.).
27. *Ph. proregulus* (Pall.).
28. *Ph. fulvifacies* (Swinh.).
29. *Myiophoneus Eugeni* (Hume).
30. *Garrulax albigularis* (Gould).
31. *G. pectoralis* (Gould).
32. *Babax lanceolatus* (J. V.).
33. *Trochalopteron Elliotti* (J. V.).
34. *T. squamatum* (Gould).
35. *Pomatorhinus Macclellandi*, var. *Armandi* (Oust.)?
36. *Conostoma amodum* (Hodgs.).
37. *Otocompsa flaviventris* (Tick.).
- *38. *Criniger Henrici* (n. sp.).
39. *Malacias pulchella* (G. A.).
40. *M. Desgodinsi* (Dav. and Oust.).
41. *Pyctorhis sinensis* (Gm.).
42. *Myxornis rubricapilla* (Tick.).
- *43. *Ixulus Rouxi* (n. sp.).
44. *Staphidia torqueola* (Swinh.).
45. *Alcippe Phayrei* (Bl.).
46. *Alcippe (Proparus) Bieti* (Oust.).
47. *Yuhina diademata* (J. V.).
48. *Y. gularis* (Hodgs.).
49. *S. strigula* (Hodgs.).
50. *Leiothrix luteus* (Scop.).
51. *Cutia nipalensis* (Hodgs.).
52. *Troglodytes nipalensis* (Hodgs.).
53. *Sitta cæsia* (Mey. and W.).
54. *S. villosa* (J. V.).
55. *Certhia himalayana* (Vig.).
56. *Parus minor* (Tem. and Schl.).
57. *Parus monticolus* (Vig.).
58. *P. dichrous* (Hodgs.).
59. *P. ater*, var. *amodius* (Hodgs.).
60. *Parus (Machlolophus) rex* (A. Dav.).
61. *Acredula concinna* (Gould).
62. *A. Bonvaloti* (Oust.).
63. *Ptererythrius rufiventris* (Blyth).
64. *Buchanga leucophæa* (V.).
65. *Oriolus Trailli* (Vig.).
66. *Graucalus Macei* (Less.).
67. *Alseonax latirostris* (Raffl.).
68. *Muscicapula maculata* (Tick.).
69. *Chelydorchynx hypoxantha* (Hodgs.).
70. *Cryptolopha cinereicapilla* (Hutt.).
71. *C. tephrocephala* (Hodgs.).
72. *Niltava sundara* (Hodgs.).
73. *Motacilla Hodgsoni* (Bl.).
74. *Microcichla Scouleri* (Vig.).
75. *Emberiza spodocephala* (Pall.).
76. *Pycnorhampus affinis* (Blyth).
- *77. *Chrysomitris ambigua* (n. sp.).
78. *Passer rutilans* (Tem.).
79. *Munia acuticauda* (Hodgs.).
80. *Dendrocitta himalayensis* (Vig.).
81. *Columba leuconota* (Vig.).
82. *Dendrotreron Hodgsoni* (Vig.).
83. *Treron (Sphenocercus) sphenurus* (Vig.).
84. *Ithaginis cruentus* (Hardw.).
85. *Ceriornis Temmincki* (Gr.).
86. *Pucrasia Meyeni* (Mad.).
87. *Nycthemerus Andersoni* (Ell.).
- *88. *Arboricola Henrici* (n. sp.).
89. *Erythrura phœnicura* (Penn.).
90. *Actitis hypoleucos* (L.).
91. *Charadrius fulvus* (Gm.).

By adding these 91 species to the 115 recorded by Anderson in the west of the same province, we get a total of 206, in itself a considerable number, but certainly not even yet representing the whole of the ornithological fauna of Yunnan. As might be supposed, this fauna exhibits a mixed character, and partakes at once of that of Thibet, India, and Indo-China.

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It possesses, however, certain species belonging to itself, of which four had not hitherto been recorded, and the discovery of which is due to Prince Henry of Orleans. These are marked by an asterisk in the preceding list, and a few words must be devoted to their diagnosis.

CRINIGER HENRICI, n. sp.—Species near akin to that of the *Criniger gutturalis* (Bp.) of Sumatra, Borneo, Malay Peninsula, and Terasserim, but distinguished from it by a larger size, different proportions in the remiges, and by the colour of the under part of the body, which is more strongly interspersed with yellow and almost develops into red beneath the lower tail-feathers. The inner edges of the wing are also brighter, of a yellowy or reddish white. Entire length of bird, 9.8 in.; of wing, from 3.90 to 4.5 in.; of primary remige, 1.08 in.; of tail, 4.33 in.; of beak (upper edge), .70 in.; of tarsus, .82 in.

This species is found at once in the south of Yunnan and the north of Tonkin. The above description has been taken from four specimens, male and female, of which one was killed on the 25th of March 1895 between Manhao and Ssumao (Yunnan) on the banks of the Black River, while the others were obtained by Prince Henry on a former expedition at Nam-Xong, Ban-Moi, and Hat-Hoa (Tonkin) on the 17th, 19th, and 25th of February 1892.

IXULUS ROUXI, n. sp.—Much resembles the *Ixulus flavicollis* (Hodgs.) of the Himalayan region in its system of colouring, but differs from it in the shade on the top of the head, which is of a deep brown slightly tinged with grey and not of a chestnut brown, also in its greater size and more developed wings. Entire length of bird, 5.59 in.; of wing, 2.55 in.; of tail, 2.11 in.; of beak, .39 in.; of tarsus, .74 in. I have, unfortunately, only had one specimen for examination, a female, killed on the 23rd of March 1895 in Yunnan, on the borders of the Ly-sien-kiang or Black River.

CHRYSOMITRIS AMBIGUA, n. sp.—A most interesting form, recalling in a striking manner certain Tarins of the New World, notably the *Chrysomitris notata* (Du Bus) of Central America, by its hood of dark, almost black hue, its green mantle, the green shade of yellow on the under parts of its body, the golden markings at the base of the tail, and by the large yellow pattern that pervades a chief part of the remiges and adorns the wings. The hood in this case, however, stops short beneath upon the chin and middle of the throat, the shoulder is of a duller green and not distinctly spotted with black, while the breast is instead flecked with greenish-brown; the tint on the abdomen also tends to green verging on the sides to russet grey, and not as in the other of a brilliant yellow; finally, the proportions are not the same as the *Chrysomitris notata*, those of the *Chrysomitris ambigua* being: entire length of bird, 5.11 in.; of wing, 3.14 in.; of tail, 2.00 in.; of beak, .39 in.; of tarsus, 3.54 in.

Four birds of this species were killed by the Prince, namely, one female at Mienning (Yunnan) on the 7th of May 1895; one male on the 13th of May at Yünchou, a little north of Mienning; one male and one female on the banks of the Yang-pi-kiang, an affluent of the Mekong, on the 23rd of May.

This species does not, however, appear rigidly confined to Yunnan, for in the numerous collection of birds recently sent to the Museum by Father Dejean from Tatsien-lou I have been confronted with the same Tarins, closely allied to birds exhibiting the exact characteristics of the Chinese greenfinch, of the *Chloris sinica* (L.), of which the Museum already possessed specimens obtained at Pekin and at Moupin by the Abbé A. David. But what is more curious, there exists in this same collection from Tatsien-lou all the transitions between the specimens resembling those I have just described under the name *Chrysomitris ambigua* and the specimens identical with the *Chloris sinica* of Moupin and Pekin. These transitions are manifested not only in a modification of the shoulder tint, which from green becomes a clear chocolate-brown, in the shade of the under parts, which passes from yellowy-green to bright reddish-brown, and in the fading and gradual entire disappearance of the hood, but also in a thickening

APPENDIX B

and shortening of the beak, which becomes wholly that of a greenfinch. As for the wings and tail, they undergo no change, these parts being already correspondingly coloured in both the *Chrysomitris ambigua* and the *Chloris sinica*.

From these facts, based on the comparison of a series of fifty specimens, it might be concluded that the *Chloris sinica* and the *Chrysomitris ambigua* constitute in reality only one and the same species, very variable, of which the old birds develop a green livery and black hood. But then how comes it that this black hood and this green livery have never as yet been observed in the many specimens of the *Chloris sinica* which naturalists have had under their inspection from the time of Linnaeus, and which figure in the large museums of Europe? It seems more reasonable to me to regard the *Chrysomitris ambigua* as a Yunnan species, the area of whose habitat is contiguous on the northern side with that of the *Chloris sinica*, and to suppose that on the confines of their respective regions the breeds, already closely allied, are subject to frequent crossing.

As I have already remarked, the two species *Chloris* and *Chrysomitris* are extremely near akin; and it is an error, in my opinion, to arrange them as in the catalogue of the British Museum in two different tribes of the family of the *Fringillidae*. Already the *Chrysomitris spinoides* (Vig.) of the Himalayas and Setchuen exhibits the plumage of a Tarin with the beak of a greenfinch.

ARBORICOLA HENRICI, n. sp.—*A. Torqucola* affinis, sed mento rufo, gula nigro maculata, tergo, caudæ tecticibus rectricibusque dorsi modo transversim radiatis, abdominis lateribus castaneo colore carentibus distincta.

Entire length of bird, 10.03 to 12.59 in.; of wing, 5.11 to 5.90 in.; of tail, 2.16 to 2.55 in.; of beak, .78 in.; of tarsus, 1.49 in.

Hab. Tonkin and prov. Kuang-tri (Annam).

Crest for most part black; front and lower jaw fawn; neck speckled black on tawny; shoulder streaked transversely and regularly with black on olive, prolonged to the tail coverts and even as far as the rectrices, and not broken behind by triangular patches or bands as in the *Arboricola torqucola*; wings presenting same markings as in the latter species; breast brownish-red, more uniform than the *Arboricola torqucola* without the small white flecks; thighs verging towards olive-brown, with feathers marked by large terminal black patch preceded by a white one, but not speckled with chestnut; beak brown; feet red.

The foregoing description is taken from two specimens from different sources: one presented to the Museum by Prince Henry of Orleans, and obtained by him at Maison (Tonkin) on the 20th of February 1892, in the course of his former travel in Indo-China; the other acquired by Father Renauld, and coming from the same province as the *Carpococcyx*, that is to say, the province of Kuang-tri (Annam). The first of these birds is indicated as a female, and is somewhat smaller in size than the other. Its beak is a little deformed, and the plumage slightly altered, so that, while detecting different characteristics from those of the *Arboricola torqucola*, I was satisfied to designate it in the collections of the Museum under the manuscript name of *Arboricola Henrici*, and postponed giving a description of the species, which immediately struck me as a new one, until I should have another specimen under my scrutiny. The arrival of this second example, moreover, admits of a considerable extension towards the south of the habitat area of the species, which is evidently to be found throughout the entire mountain and forest region that separates Annam from Laos.

In addition to the above species there are many others in Yunnan on which I should have wished to say a few words, but I hope to be able to investigate them in an ulterior work.

FROM TONKIN TO INDIA

3. LEPIDOPTERA

COLLECTED IN YÜNNAN

Classified by M. OBERTHÜR at Rennes

(1) RHOPALOCERA

Papilio Machaon, <i>Linnaeus</i> .	Dercas Wallichii, <i>Doubleday</i> .
„ Alcinous, <i>Klug</i> .	Acraea Vesta, <i>Fabricius</i> .
„ Chentsong, <i>Oberthür</i> .	Danaüs Chrysippus, <i>Linnaeus</i> .
„ Protenor, <i>Cramer</i> .	„ Genutia, <i>Cramer</i> .
„ Pammon, <i>Linnaeus</i> .	„ Tytia, <i>Gray</i> .
„ Lama, <i>Oberthür</i> .	„ Melaneus, <i>Cramer</i> .
„ Bianor, <i>Cramer</i> .	Melitaea Yuenty, <i>Oberthür</i> .
„ Paris, <i>Linnaeus</i> .	Argynnis Niphe, <i>Linnaeus</i> .
„ Cloanthus, <i>Westwood</i> .	„ Laodice, <i>Pallas</i> .
„ Xuthus, <i>Linnaeus</i> .	Limenitis Elwesi, <i>Oberthür</i> .
„ Erithonius, <i>Cramer</i> .	Apatura Bieti, <i>Oberthür</i> .
„ Arcturus, <i>Westwood</i> .	„ Fulva, <i>Leech</i> .
„ Horatius, <i>Blanchard</i> .	„ Princeps, <i>Fixsen</i> .
„ Tamerlanus, <i>Oberthür</i> .	Charaxes Clitiphon, <i>Oberthür</i> .
„ Mandarinus, <i>Oberthür</i> .	„ Rothschildi, <i>Leech</i> .
Armandia Thaïdina, <i>Blanchard</i> .	„ Menedemus, <i>Oberthür</i> .
Parnassius Imperator, <i>Oberthür</i> .	Araschnia Prorsoides, <i>Blanchard</i> .
Pieris Goutellei, <i>Oberthür</i> .	„ Davidi, <i>Poujade</i> .
„ Bieti, <i>Oberthür</i> .	Kallima Inachus, <i>Boisduval</i> .
„ Martineti, <i>Oberthür</i> .	Satyrus Merlina, <i>Oberthür</i> .
„ Gliciria, <i>Cramer</i> .	„ Palma, <i>Kollar</i> .
„ Belladonna, <i>Fabricius</i> .	Neope Agrestis, <i>Oberthür</i> .
Colias Fieldii, <i>Ménétrières</i> .	Erebia Polyphemus, <i>Oberthür</i> .
Gonepteryx Amintha, <i>Blanchard</i> .	Dejeania Bicolor, <i>Oberthür</i> .

(2) HETEROCERA

Tropaea Selene, <i>Hübner</i> .	Ophideres Fullonica, <i>Linnaeus</i> .
Loepa Katinka, <i>Westwood</i> .	Calesia Haemorrhoea, <i>Guenée</i> .
Ophideres Ancilla, <i>Cramer</i> .	Urapteryx crocopterata, <i>Kollar</i> .

4. PLANTS

List of Plants collected by the Expedition. (For localities the reader is referred to the dates in the text of the book.)

Arranged by M. A. FRANCHET

NOTE.—Names of species preceded by an asterisk are new: their descriptions will be published in the *Bulletin de la Société botanique de France*.

RANUNCULACEÆ

Clematis chrysocomoides, <i>Franch.</i> , 10 June.	Ranunculus pennsylvanicus, <i>Poir.</i> , 15 March.
„ florida, <i>Sieb. Zucc.</i> , 11 July.	Trollius patulus, ¹ <i>Salisb.</i> , 11 July.
Anemone rivularis, <i>Hamilt.</i> , 1 May.	*Trollius yunnanensis, <i>Franch.</i> , 13 Sept.
„ cœlestina, <i>Franch.</i> , 19 June.	*Aconitum pumilum, <i>Franch.</i> , 14 Sept.

MAGNOLIACEÆ

Michelia yunnanensis, *Franch.*, 27 February.

¹ Petals much shorter than stamens; the stems attaining 27.55 in. Plant altogether new for the region.

APPENDIX B

PAPAVERACEÆ

**Meconopsis multicaulis*, *Franch.*, 14 September.

CRUCIFERACEÆ

Cardamine sylvatica, *Link.*, 9 March.

FUMARIACEÆ

<i>Corydalis Raddeana</i> , <i>Regel.</i> (?), 11 July. „ <i>echinocarpa</i> , <i>Franch.</i> , 2 March at Loutsou-chin.	<i>Corydalis echinocarpa</i> , <i>Franch.</i> , 12 Sept. „ sp. „ 12 Sept.
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VIOLARIÆ

<i>Viola Patrinii</i> , <i>Patrin.</i> , 17 June. „ <i>diffusa</i> , <i>Ging.</i> , 5 March.	<i>Viola japonica</i> , <i>Langs.</i> , 28 February. „ <i>Delavayi</i> , <i>Franch.</i> , 23 May.
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POLYGALACEÆ

**Polygala yunnanensis*, *Franch.*, 27 February.

CARYOPHYLLACEÆ

<i>Silene rubicunda</i> , <i>Franch.</i> , 17 June. <i>Stellaria uliginosa</i> , <i>Murr.</i> , 9 March.	<i>Cerastium triviale</i> , <i>Link.</i> , 5 March.
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HYPERICACEÆ

Hypericum patulum, *Thunb.*, 27 February and 23 May.
 „ sp. 15 March.

GERANIACEÆ

<i>Geranium nepalense</i> , <i>Sweet.</i> , 28 Feb. „ <i>yunnanense</i> , <i>Franch.</i> , 11 July. „ <i>palustre</i> , <i>L.</i> , var., 11 July. „ <i>strigosum</i> , <i>Franch.</i> , var., 18 June.	<i>Geranium</i> sp., 9 March. <i>Oxalis corniculata</i> , <i>L.</i> , 12 February. <i>Biophytum sensitivum</i> , <i>DC.</i> , 18 April. <i>Impatiens</i> sp., 29 April. <i>Averrhoa Carambola</i> , <i>L.</i> , 30 March.
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RUTACEÆ

Bœnninghausenia rutæfolia, *Rehdb.*, 11 July.

CELASTRINACEÆ

Euonymus sp., 14 September.

CEDRELACEÆ

Munronia Delevayi, *Franch.*, 20 May.

LEGUMINOSÆ

<i>Crotalaria ferruginea</i> , <i>Grah.</i> , 15 March. „ „ 29 April. <i>Lotus corniculatus</i> , <i>L.</i> , 15 February. <i>Guldenstædtia yunnanensis</i> , <i>Franch.</i> , var., 19 June. <i>Astragalus Sinicus</i> , <i>Lamk.</i> , 1 May.	* <i>Lespedeza sericophylla</i> , <i>Franch.</i> , 9 March. <i>Desmodium parvifolium</i> , <i>DC.</i> , 9 March. <i>Flemmingia Grahamiana</i> , <i>Arn.</i> , 15 Feb. <i>Dalbergia</i> , 18 June. <i>Bauhinia Faberi</i> , <i>Oliv.</i> , 15 April.
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ROSACEÆ

<i>Spiræa lanuginosa</i> , <i>Franch.</i> , 11 July. „ <i>japonica</i> , var. <i>ovalifolia</i> , 15 Feb. <i>Princepia utilis</i> , <i>Royle</i> , 15 Feb. <i>Rubus rosæfolius</i> , <i>Lin.</i> , 15 March. <i>Fragaria indica</i> , <i>L.</i> , 15 March. <i>Potentilla Kleiniana</i> , <i>Wight.</i> , 5 March.	* <i>Potentilla ampliflora</i> , <i>Franch.</i> , 14 Sept., 11 July. „ <i>peduncularis</i> , <i>Don.</i> , 19 June. „ <i>leuconota</i> , <i>Don.</i> , 11 July. <i>Agrimonia Eupatoria</i> , <i>L.</i> , 24 May. <i>Pyrus Malus</i> , <i>L.</i> , 24 April.
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FROM TONKIN TO INDIA

SAXIFRAGACEÆ

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|---|---|
| <p>*<i>Astilbe Henrici</i>, <i>Franch.</i>, 11 July.
 <i>Saxifraga</i> sp., 14 July.
 <i>Dichroa febrifuga</i>, <i>Lour.</i>, 27 April.</p> | <p><i>Deutzia staminea</i>, <i>Br.</i>, 15 March.
 „ <i>glomeruliflora</i>, <i>Franch.</i>, 24 May.
 <i>Philadelphus coronarius</i>, <i>L.</i>, var., 23 May.</p> |
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CRASSULACEÆ

- Bryophyllum calycinum*, *Salisb.*, 12 February.

LYTHRARIACEÆ

- Woodfordia floribunda*, *Salisb.*, 9 March.

CENOTHERACEÆ

- Epilobium angustifolium*, *Lamk.*, 11 July. | *Epilobium hirsutum*, *L.*, 24 April.

PASSIFLORACEÆ

- Passiflora yunnanensis*, *Franch.*, 19 March.

MELASTOMACEÆ

- | | |
|--|--|
| <p><i>Osbeckia</i> sp., 12 September.
 <i>Allomorpha pauciflora</i>, <i>Benth.</i>, 12 Sept.</p> | <p><i>Blastus</i> sp., 14 October.</p> |
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UMBELLIFERÆ

- Cenanthe linearis*, *Wall.*, 24 April.
 **Pleurospermum heracleifolium*, *Franch.*, 11 July.

CORNACEÆ

- Cornus capitata*, *Wall.*, 19 June.

RUBIACEÆ

- Wendlandia glabrata*, *DC.*, 11 February. | *Ophiorrhiza japonica*, *Blume*, 12 Sept.

LONICERÆ

- | | |
|---|---|
| <p><i>Lonicera acuminata</i>, <i>Wall.</i>, 19 June.
 „ <i>longiflora</i>, <i>DC.</i>, 15 April.
 <i>Leycesteria formosa</i>, <i>Wall.</i>, 20 May.</p> | <p>*<i>Viburnum parvifolium</i>, <i>Franch.</i>, 1 May.
 „ sp., 18 March.</p> |
|---|---|

VALERIANACEÆ

- | | |
|---|---|
| <p><i>Valeriana Hardwichii</i>, <i>Wall.</i>, 1 May.
 „ <i>Wallichii</i>, <i>DC.</i>, 18 March.</p> | <p><i>Patrinia scabiosæfolia</i>, <i>Fisch.</i>, 23 Sept.</p> |
|---|---|

DIPSACEÆ

- Morina Delavayi*, *Franch.*, 11 July, 17 June.

COMPOSITÆ

- | | |
|---|--|
| <p><i>Aster trinervius</i>, <i>Roxb.</i>, 15 March.
 „ sp., 15 March.
 „ <i>Bietii</i>, <i>Franch.</i>, <i>Journ. de bot.</i>, x. p. 373.
 <i>Erigeron Alpinus</i>, <i>L.</i>, 24 May.
 „ „ var. <i>Roylei</i>, <i>DC.</i>, 11 February.
 <i>Blumea glomerata</i>, <i>DC.</i>, 12 February.
 „ <i>lacera</i>, <i>DC.</i>, 15 March.</p> | <p><i>Vicoa auriculata</i>, <i>DC.</i>, 9 March, 2 May.
 <i>Gnaphalium multiceps</i>, <i>DC.</i>, 1 May (this plant is cooked and eaten by the natives).
 <i>Gnaphalium</i> (<i>Anaphallis</i>) <i>nubigenum</i>, <i>DC.</i>, var. <i>laxum</i>.
 <i>Gnaphalium</i> (<i>Leontopodium</i>) <i>alpinum</i>, <i>Scop.</i>, 1 May.
 <i>Gnaphalium</i> (<i>Leontopodium</i>) <i>Chinense</i>, <i>Fr.</i>, 14 September.</p> |
|---|--|

APPENDIX B

Gnaphalium (Leontopodium) Dedekensii, <i>Bur. and Franch.</i> , 18 June.	Saussurea lingulata, <i>Franch.</i> , <i>Journ. de bot.</i> , x. p. 423.
*Gnaphalium (Leontopodium) tenuifolium, <i>Fr.</i> , 19 May, 27 February.	Hemistepta lyrata, <i>Bunge.</i> , 18 March.
Emilia sonchifolia, <i>DC.</i> , 12 February.	*Cnicus paucisquamatus, <i>Franch.</i> , 1 May.
Gynura primatifida, <i>DC.</i> , 15 March.	Gerbera piloselloides, <i>Cass.</i> , 29 April.
Senecio Oldhamianus, <i>Maxim.</i> , 16 Feb.	*" Chinensis, <i>Franch.</i> , 15 March.
" phalacrocarpus, <i>Ham.</i> , 14 Sept.	Lactuca grandiflora, <i>Franch.</i> , 30 July, 15 September.
" Principis <i>Franch.</i> , <i>Journ. de bot.</i> , x. 412.	" sp., 12 March.
*" tenuipes, <i>Franch.</i> , 11 July.	Crepis japonica, <i>Benth.</i> , 12 March.

CAMPANULACEÆ

Adenophora sp., 12 July.	Campanumæa pilosula, <i>Franch.</i> , 12 September.
Codonopsis convolvulacea, <i>C. Kurz.</i> , 12 July.	

ERICACEÆ

Vaccinium Donianum, <i>Wight.</i> , 19 March.	Rhododendron indicum, <i>L.</i> , 18 March, 27 February.
Pieris ovalifolia, <i>Don.</i> , 29 April.	" sp., 15 March.
Rhododendron ciliicalyx, <i>Franch.</i> , 9 May.	" Delavayi, <i>Franch.</i> , 18 March.
*" oxyphyllum, <i>Franch.</i> , 30 March.	

PLUMBAGINACEÆ

Plumbago Zeylanica, <i>L.</i> , 18 March.	Primula denticulata, <i>Sm.</i> , 15 February.
*Primula cyclaminifolia, <i>Franch.</i> , 18 March.	" sp., 16 February.
*" microdonta, <i>Franch.</i> , 15 Sept.	*Lysimachia plicata, <i>Franch.</i> , 24 May.
" Poissoni, <i>Franch.</i> , 2 May.	

STYRACEÆ

Styrax ser. ulatum, <i>Roxb.</i> , 30 May.	Symplocos cratægoides, <i>Ham.</i> , 2 May.
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OLEACEÆ

Forsythia suspensa, <i>Vahl.</i> , 15 February.	Jasminum sp., 15 February.
Jasminum sp., 4 March.	" sp., 9 March.

APOCYNACEÆ

Beaumontia grandiflora, *Wall.*, 14 April.

LOGANIACEÆ

Buddleia asiatica, *L.*, 27 February.

GENTIANACEÆ

Gentiana tenella, <i>Fores.</i> , 23 September.	Crawfurdia fasciculata, <i>Wall.</i> , 14 Sept.
" delicata, <i>Ham.</i> , 23 September.	*" grandiflora, <i>Franch.</i>
" decemfida, <i>Buch.</i> , 29 April.	Swertia, 12 September.
" serra, <i>Franch.</i> , 15 February.	" 12 September.
" Elwesii, <i>Clarke</i> , 23 September.	Italenia elliptica, <i>D. Don.</i> , 12 September.
" " 14 September.	

BORAGINEÆ

Cynoglossum furcatum, <i>Wall.</i> , 15 March, 16 February.	Trigonotis peduncularis, <i>Maxim.</i> , 12 Sept.
	Myosotis sylvatica, <i>Stoffm.</i> , 11 July.

FROM TONKIN TO INDIA

CONVOLVULACEÆ

- | | | |
|--|--|--|
| Argyreia sp., 15 April. | \| | Evolvulus alsinoides, <i>L.</i> , 9 March. |
| Ipomæa quissata, <i>Rob. Br.</i> , 4 July. | \| |  |

SCROPHULARIACEÆ

- | | | |
|--|--|---|
| Brandita Hancei, <i>Hook.</i> , 15 March. | \| | Pedicularis Elwesii, <i>Hook.</i> , 14 September. |
| Torrenia peduncularis, <i>Benth.</i> , 23 Oct. | \| | " 24 May. |
| Veronica, 11 July. | \| | " 11 July (<i>ter.</i>). |
| Phteirospermum tenuisectum, <i>Bux. and Franch.</i> , 18 June. | \| |  |

GESNERIACEÆ

- Æschinomene acuminatus, *Wall.*, 12 July.

BIGNONIACEÆ

- Incarvillea Delavayi, *Franch. and Sav.*, 18 June.

ACANTHACEÆ

- | | | |
|----------------------------|--|-----------------------------|
| Baleria sp., 9 May. | \| | Asystasia sp., 5 March. |
| Peristrophe sp., 28 March. | \| | Strobilanthus sp., 11 July. |

LABIATÆ

- | | | |
|---|--|---|
| *Plectranthus Yunnanensis, <i>Franch.</i> , 18 June. | \| | Scutellaria rivularis, <i>Wall.</i> , 15 April. |
| *Elsholtzia theezans, <i>Franch.</i> , 15 March (used instead of tea by the natives). | \| | " sp., 18 June. |
| Calamintha umbrosa, <i>Benth.</i> , var. <i>microphylla</i> , 17 June. | \| | *Salvia falcilabra, <i>Franch.</i> , 18 June. |
|  | \| | *" platycalyx, <i>Franch.</i> , 11 July. |
|  | \| | Ajuga ciliata, <i>Bunge</i> , 15 March. |

POLYGONACEÆ

- Polygonum Bistorta, *L.*, 11 July, 27 February.

LAURACEÆ

- Litsæa sp., 5 March.

THYMELÆACEÆ

- | | | |
|---|--|------------------------|
| Stellera Chamœjasme, <i>L.</i> , 27 February. | \| | Stellera sp., 19 June. |
|---|--|------------------------|

EUPHORBIACEÆ

- | | | |
|---|--|---------------|
| Euphorbia Jolkini, <i>Boiss?</i> 5 March. | \| | Euphorbia sp. |
|---|--|---------------|

AROIDEÆ

- Arisæma sp., 17 June.

ORCHIDACEÆ

(Arranged by *M. Finet*)

- | | | |
|---|--|--|
| Liparis Bootanensis, <i>Griff.</i> | \| | Dendrobium Pierardi, <i>Roxb.</i> , 3, 12, 20 April. |
| Dendrobium Dalhousiæanum, <i>Wall.</i> , 3 April. | \| | " capillipes, <i>Reich.</i> , 5 April. |
| " aggregatum, <i>Roxb.</i> , 28 April. | \| | " chrysotomum, <i>Lindl.</i> , 18 March, 17 April. |
| " Parishii, <i>Reichs.</i> , April. | \| | " sp. |
| " longicornu, <i>Lindley</i>. | \| | Bolbophyllum sp. nov. |
| " fimbriatum, <i>Hooker</i> , 19 October. | | Cirrhopetalum sp. nov., 12 September. |
| | | Phajus grandifolius, <i>Lour.</i> , 2 April. |

APPENDIX B

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| <p>Bletia hyacinthina, <i>A. Brown</i>, 18 and 19 June.
 Anthrogonium gracile, <i>Wall.</i>, 18 October.
 Cœlogyne barbata, <i>Griff.</i>
 " nitida, <i>Lindl.</i>
 " ochracea, <i>Lindl.</i>, 29 October.
 " præcox, <i>Lindl.</i>
 " fimbriata, <i>Lindl.</i>, 3 September.
 Calanthe sp., 29 September.
 " sp., 11 July (<i>bis</i>).
 " sp.
 Arundina sp.
 Cymbidium giganteum, <i>Wall.</i>, 6 and 12 April.
 " grandiflorum, <i>Griff.</i>
 " xiphiifolium <i>affinis</i>, April.
 Vanda teres, <i>Lindl.</i>, 13 April.</p> | <p>Vanda parviflora, <i>Lindl.</i>, 12 and 17 April.
 Goodyera procera, <i>Stook</i>, 30 March.
 " secundifloræ <i>affinis</i>.
 Pogonia sp. nov., 12 July.
 Cephalanthera falcata, <i>Blume</i>, 20 March.
 Epipactis latifolia, <i>Swartz</i>, 11 July.
 Habenaria sp., 4 July.
 " sp., 4 July.
 " sp., 11 July.
 " sp., 23 March.
 " sp., 19 September.
 " sp., 18 June.
 " sp., 21 June.
 " sp.
 Satyrium nepalente, <i>Don.</i>, 13 Sept.
 Arethusantha, <i>Gen. nov.</i>
 Orchis sp., 12 July.</p> |
|--|--|

IRIDACEÆ

- | | |
|--|--------------------------|
| <p>Pardanthus Chinensis, <i>Ker.</i>, 5 March.
 Iris Sibirica, <i>L.</i>, forma, <i>hæmatophylla</i>, 19 June.</p> | <p>Iris Sibirica sp.</p> |
|--|--------------------------|

SCITAMINEÆ

- | | |
|---|--|
| <p>Roscoeæ purpurea, <i>Sm.</i>, 23 May.
 * " lineariloba, <i>Franch.</i>, 24 April.
 *Cantleya yunnanensis, <i>Franch.</i>, 19 June.</p> | <p>Alpinia sp., 15 February.
 " sp., 27 April.</p> |
|---|--|

HYPOXIDÆ

- Hypoxis aurea, *L.*

ILÆMODORACEÆ

- Alettris laxiflora, *Franch. and Bur.*, 2 May.

LILIACEÆ

- | | |
|---|---|
| <p>Paris polyphylla, <i>Sm.</i>, 20 May.
 Olygobotrya Henryi, <i>Oliv.</i>, 11 July.
 Ophiopogon japonicus, <i>Gawl.</i>, 17 June.
 " sp., 20 May.
 *Lilium Henrici, <i>Franch.</i>, 11 July.
 " cordiofolium, <i>S. Z.</i>, 21 June.
 " Delavayi, <i>Franch.</i>, 19 June.
 " roseum, <i>Wall.</i>, 11 July.
 Nomocharis pardanthina, <i>Franch.</i>, 19 June.</p> | <p>Allium odorum, <i>L.</i>, 12 September.
 " sp., 14 September.
 Hemerocallis fulva, <i>L.</i>, var. <i>angustifolia</i>, <i>Baker</i>, 3 May.
 Tofieldia Himalaica, <i>Baker</i>, 12 June.
 Disporum pullum, <i>Salisb.</i>, 24 April.
 Veratrum album, <i>L.</i>, var., 11 July.
 Streptopus elegans, <i>Franch.</i>, 11 July.
 Juncus sp., 11 July.</p> |
|---|---|

COMMELYNACEÆ

- Streptolirion volubile, *Edgew.*, 12 September.

CYPERACEÆ

- Carex atrata, *L.*, 15 September.

LYCOPODIACEÆ

- | | |
|--|---|
| <p>Lycopodium clavatum, <i>L.</i>, 27 January.</p> | <p>Lycopodium complanatum, <i>L.</i>, 27 Feb.</p> |
|--|---|

FROM TONKIN TO INDIA

II

VOCABULARIES

COLLECTED ON THE ROUTE

(*Explanation of the Numbers of the Vocabularies*)

1. *Poula Vocabulary*, taken on the 2nd of March at Loutche-Hsien ; remarkable for the initial *ch* like the German nasal *ch* ; sometimes the finals are scarcely sounded.
2. *Hou-Ni Vocabulary*, taken on the 3rd of March at Bakopo ; like the Poulas, they add *louma* to the words, perhaps signifying *it is called*, or perhaps only as a suffix.
3. *Lolo Vocabulary*, taken the 6th of March at Cheu-pe-te.
4. *Yayo Vocabulary* (Lintindjou), taken the 7th of March.
5. *Lola Vocabulary*, taken the 10th of March at Machatsa.
6. *Paï Vocabulary*, taken the 10th of March at Pingantchaï.
7. *Lolo Vocabulary*, taken the 17th of March at Ketchou.
8. *Hou-Ni Vocabulary*, taken the 18th of March at La Mi. The Hou-Nis (who call themselves Hans) have certain sounds which they pronounce like *eur* in French *sœur*.
9. *Hou-Ni Vocabulary*, taken the 23rd of March at Pitchu.
10. *Hatou Vocabulary*, taken the 25th of March at Panhoutse.
11. *Yayo Vocabulary* (Lintindjou), taken the 1st of April at Takouelin. Suffixes *nom* or *lom* after the numbers noticeable.
12. *Lolo Vocabulary*, of Nalipa, taken the 9th of April at Ssumao.
13. *Chui Paï Vocabulary*, of Kouen-fang (same as the Hin Païs), taken the 15th of April.
14. *Lokai Vocabulary*, 20th April. (The Lokais call themselves Lachous.)
15. *Lolo Vocabulary*, 20th April, at Chian-na-ling. (The Lolos call themselves Toutans.)
16. *Pou Ma Vocabulary*, at Pouto, 29th April. (Seems to approach the Paï.)
17. *Lokai Vocabulary*, at Koueng-fang, 1st May. (Very clearly pronounced.)
18. *Minchia Vocabulary*, 20th June, at Kian-pin.
19. *Lissou Vocabulary*, 3rd July, at Lou-kou.
20. *Tono Vocabulary*, 15th July, at Tono. (Resembles Lissou.)
21. *Petsen* or *Han Lama Vocabulary*, 23rd July. (Very like Minchia.)
22. *Pé Lissou Vocabulary*, 8th August.
23. *Mosso Vocabulary*, at Ngaiwa, 14th August. (The Mossos call themselves Nachis.)
24. *Loutse Vocabulary*, taken at Tsekou in August. (The Loutses call themselves Melams ; the Thibetans style them Ngias, or imbeciles.)
A Complement to the Loutse Dialect will be found at the end of the Vocabularies.
25. *Thibetan Vocabulary*, at Tsekou, end of August.
26. *Loutse Vocabulary*, taken from some Loutses at Tamalou, 10th October.
27. *Kioutse Vocabulary*, at Tukiou Mu.
28. *Mishmi Vocabulary*, at Bouniang in December.
29. *Kioutse Vocabulary*, taken from the Sing-leng folk, 13th December. Called by the Païs and the English Khanungs, by themselves Metouans.
30. *Singpho Vocabulary*, at Daphagang in December.

NOTE.—Vowels employed in subjoined Lists are to be considered as having their continental value.

	1 POULA.	2 HOU-NI	3 LOLO.	4 YAYO.	5 LOLA.	6 PAI.	7 LOLO.	8 HOU-NI.
Boat .	Neing	Gniu po	Anngue	Wongbou	La	Heu	Lô	Nioupeu
Buffalo .	Abe				Anngua	Khai	A	
Chicken .	...	...	...	...	...	...	...	...
Child .	Aleumene	Sakouza	Zoneu	Atasei	Akeujo	Loue	Atou	Zako
Copper .	Dji	Gueu	Ji	Tong	Gui	Tong	Dzi	Kutsa
Daughter	Mitianmamin	Zami	Amezone	Atasakienne	Amelo	Loungine	Medjemo	Mitaha
Day .	Akou	Tino	Gnito	Guine	Tiehe	Monene	Ini	Gnanu
Deer .	...	...	...	...	Hibeu	Kang	...	Hatsi
Dog .	Tchi	Akhu	Tchi	Klou	Tchi	Ma	Tchite	Akhu
Ears .	Nape	Nato	Nop	Monôme	Mopa	Vou	Lopa	Nabo
Earth .	Mikha	Mitsa	Mi	Ni	Miho	Lin	Mi	Mitsa
Eyes .	Nichi	Mia	Nedou	Moï	Nedoua	Oueta	Ne	Gna
Father .	Ipe	Ada	Ngone	Fa	Tchamapo	Ate	Apa	Ata
Fire .	Mi	Mitcha	Sito	Tao	Sitoua	Fai	Meto	Atsa
Foot .	Tchi	Keu	Gueupe	Tao	Tchipiea	Kha	Gneu	Aku
Fowl .	Je	Ha	Je	Taï	Je	Kai	Je	Aa
God .	Ii	...	...	Gône	...	Fa	...	...
Gold .	Chie	Outiou	Cheu	Sam	Cheu	Lao	Che	Cho
Hand .	Lie	La	Nepa	Pou	Lepa	Mu	Le	Ala
Horse .	Mou	Mô	Mouri	Ma	Mou	Ma	Mou	Among
House .	Chie habie	Io	He	Piao	He	(different tone) Uentiane	He	Laheu
Iron .	Cho (aspirate)	So	Tenji	Guia	Temi	Na	Rhie	Chia
Man .	Ouatse	Tsotia	Tsatitai	Atamone	Tsotita	Tennun	Tsa	Achan (aspirate)
Month .	...	...	...	...	...	...	...	...
Moon .	Saba	Bâcha	Koboumo	La	Kaboumo	Luna	Koboumo	Pala
Mother .	Ima	Amâ	Mopai	Djine	Tchamamo	Ame	Amo	Ama
Mountain	Boma	Hote	Beu	Tim	Sopa	Loé	Beu	Mitang
Mouth .	Nipi	Nepomacho	Nipi	Djete	Niepi	Soup	Nepi	Metzou
Nose .	Nako	Nepo	Nouka	Pouzong	Nokoua	Lang	Moko	Namé
Numerals								
1 .	Hangi	Tibia	Ti	I	Tita	Nung	Ti	Ti

	1 POULA.	2 HOU-NI.	3 LOLO.	4 YAYO.	5 LOLA.	6 PAÏ.	7 LOLO.	8 HOU-NI.
Numerals								
2 .	Ni	Nobia	Gni	Pou	Nita	So	Ni	Gni
3 .	So	Koubia	Sen	Piei	Santa	Sam	Sa	Sem
4 .	Sia	Ubia	Chli	Pia	Chita	Seu	Chli	I
5 .	Ngang	Nabia	Ngo	Kio	Ouonta	Ha	Ngou	Nga
6 .	Kfou	Koubia	Tchou	Gni	Tchouta	Ho	Tchou	Kou
7 .	Chi	Seubia	Cheu	Iêt	Chlita	Hêt	Chi	Cheu
8 .	Chié	Chibia	Hi	Dou	Nhita	Piet	Hi	Chi
9 .	Kuou	Ouibia	Ko	Sap	Kuta	Kao	Keu	Ken
10 .	Tsen	Tsebia	Tse	Sapiat	Tseuta	Sip	Tchen	Ti
11 .	Tsenting	Tsetibia	Tseti	Sapniei	Tseutita	Sipie	Tchenti	Tsite
12 .	Tseuni	...	...	Sapam	...	Sipsong	...	Tsigni
13 .	...	...	...	Sapei	...	...	...	...
14 .	...	...	...	Sapnuong	...	...	...	...
15 .	...	...	...	...	...	...	...	...
16 .	...	...	...	...	...	...	...	...
17 .	...	...	...	...	...	...	...	...
18 .	...	...	...	...	...	...	...	...
19 .	...	...	...	...	...	...	...	...
20 .	...	...	Guitse	Sapgo	Nitsenta	Sao	Nitchen	Ngortsi
100 .	Tahane	Ticha	Tienhong	Te	Tinghota	Haineu	Tiho	Tia
200 .	...	...	...	...	...	...	...	...
1,000 .	Itiao(Chinese)	Titang	Tchitang	Appine	Tito	Pannou	Tchito	Titang
10,000 .	...	...	...	...	...	...	...	...
Ox .	Nie	Niou	Gni	Wong	Nieu	Vo	Gni	Nieuni
Panther .	Aï	Azeu	Djin	Tiâne	Modjekone	Seung	I	Hazeu
Pork .	Oue	Gâ	Vé	Toung	Ve	Mou	Vé	Arang
Rice .	Mia	Tsepu	Tchetou	Mai	Tchechou	Kesane	Tchetou	Tsepou
Sheep .	Mété	Ocha (aspirate)	Tchermo	Iôme	Tchimo	Vé	Tchi	Atcheu
Silver .	Ch 1	Pi	Chlou	Nian	Chlou	Gnia	Thou	Po
Sky .	M 1â	Hô	Mou (nasal)	Guiao	Meu	...	Mou	Mta
Stone .	T 1pi	Achlo	Loube	Mouhoi	Loubeu	Ine	Loube	Halou
Sun .	M 1tsao	Nama	Ndjemo	...	Niéguimo	Tavane	Nedjima	Numa
Tiger .	...	...	...	...	...	...	...	...

Water .	Iavou	Outiou	Ii	Wom	I	Nam	Ii	Ake
Woman .	Midjamala	Sameza	Madjemome	Mondje	Modjemou	Pinning	Medjo	Amiza
Wood .	Chima	Oucheu	Loucheu	Guiang	Sidzeu	Oumai	Si	Hohu
								(aspirate)
Year .	Tsataama	...	...	...	...	...	...	...
Pronouns	(much difficulty in getting pronouns, especially in plural)							
I .	Nga	No	Ngo	Mei	Ngo	Kaou	Ngo	No
Thou .	Ne	Nga	Nin	Ia	Na	Mala	Na	Nga
He, She, It	Saou	So	Ni	Moun	Ni	Tche	Keu	Dounia
We	Aba	Ioulo (?)	Ngotchipeu	Apujou, for the three means everybody No separate plurals said to exist	Tcheleu (they)	Tengnai (everybody)	Itchoupo (everybody)	Tadja (everybody)
You	Nebo	Alo	Singota (?)					
They	Souo bo	Noudgi (?)	Naho (?)					

	9 HOU-NI.	10 HATOU.	11 YAYO.	12 LOLO.	13 CHU'I PAÏ.	14 LOKAÏ.	15 LOLO.	16 POU MA.
Black .	Iouseu	Ana	Bouikia	Ne	Lam	Keniou	Mena	Sipe
Blue .	Iouna	Amou	Bouimeng	Lou	Len	Palali	Mepia	...
Boat .	...	...	...	...	...	...	...	...
Bone .	...	...	...	...	...	...	...	...
Buffalo .	Niopou	Ouniou	Wombou	A	Houai	Goniou	Ouniou	Trac
Caravan .	(See Mule)	...	...	...	...	...	...	...
Chair .	...	...	...	...	...	...	...	...
Chicken .	Aa	Ha	Tai	Ié	Kai	Ga	Ze	Iala
Chief (title)	Jouha	Choupa	Hodao	Koli	Aho	...	Kassé	...
Child .	Iacou	Iaïou	Manze	...	Onnaia	Zapa	Tchaponio	...
Coat .	...	...	...	...	...	...	...	...
Cold .	Akaga	Tia	Song	Dje	Kada	Motiou	Dze	Pasen
Copper .	Loubeu	Keua	Tong	Touté	Tong	Metouko	Chioudou	Tong (as in Chinese)
Cotton .	Sala	Sala	Bouifang	Soulo	Fai	Sala	Cholo onqua	Tai

	9 HOU-NI.	10 HATOU.	11 YAYO.	12 LOLO.	13 CHUI PAÏ.	14 LOKAÏ.	15 LOLO.	16 POU MA.
Cup . . .	...	Iami ...	Sa ...	Amezo ...	Saoa ...	Zamino ...	Mejo ...	...
Daughter .	Iamia	Iami	Sa	Amezo	Saoa	Zamino	Mejo	...
Day . . .	Tine	Tenno	Anoi	Tinni	Oueneune	Tigni	Tigni	Monseugni
Deer . . .	Hatchié	(A)tchie (this A is some- times left out)	Kumdaï	Tiemö	Kouane	Chatse	Tiema	Iak
Dog . . .	Akhau	Akhau	Klou	Tche	Ma	Phu	Ano	Tcho
Door . . .	...	...	...	...	...	...	...	...
Duck . . .	Aha	Apé	Apa	Ou	Piet	Apé	A	...
Ears . . .	Nabo	Napou	Monom	Loupa	Oua	Napoutchi	Nopa	Ioc
Earth . . .	Mitsa	Mitsa	Ni	Mi	Line	Mi	Mida	Panthai
Eyes . . .	Meneu	Matzeu	Maïa	Neseu	Nuita	Nesi	Midou	Ngai
Father . .	Ada	Ato	Fa	Ate	Po	Ate	Abo	Ounia
Fire . . .	Adza	Mi	To	Mato	Fai	Ami	Ato	Nao
Fish . . .	...	...	...	...	...	...	...	...
Flat . . .	...	...	...	...	...	...	...	...
Flint . . .	...	...	Ietao	...	...	...	...	...
Foot . . .	Akeu	Ako	Saou	Gueu	Tine	Kupou	Ouomo	Tiang
Fowl . . .	...	...	...	...	...	...	...	...
God . . .	Ponkhu	Pomo	Fuipé	Nietsi	Patso	...	Poussa (Chinese)	...
Gold . . .	Sou	Seu	Som	Cheu	Ham	Cheu	Sai	Kam
Goose . . .	...	...	...	...	...	...	...	...
Grease . .	Hatchi	Atsou	...	...	...	...	...	...
Green . . .	...	...	...	...	...	...	...	...
Gun . . .	Mibou	Mipeu	Ioungtoug	Tsiang	...	...	...	...
Hair . . .	...	...	...	...	...	...	...	...
(animal)								
Hand . . .	Lanu	Ala	Pou	Lé	Mhu	Lakho	Ligueu	Ti
Hat . . .	...	...	...	...	...	...	...	...
Honey . . .	...	...	...	...	...	...	...	...
Horse . . .	Amo	Meu	Ma	Mou	Ma	Mou	Kamou	Bra
Hot . . .	Ioulolhong	Outse	Gnine	Tcheu	Hoan	Hoa	Teko	Tiemonn
House . .	Nikho	Iouka	Piao	Hen	Heune	Hie	Hi	Kaug

Iron	Do'ma	Si	Ia	Imo	Liga	Chou	Temé	Angac
King	...	...	...	...	...	...	...	...
Knife	Medje	Miasa	Djou	Até	Pa	Ato	Ato	Sac
Lance	Kantcha (Chinese)	...	...	...	...	...	...	...
Lard	...	...	...	...	...	...	...	...
Left	Tsama	Lami	Tsongpou	Afeu	Mousa	Lavai	Vabé	Tienlué
Linen	...	...	...	...	...	...	...	...
Man	Hadjio	Hadjia(tico)	Manteun	Medjo	Kounzaï	Hoka	Tchapo	Concoute
Meat	...	...	...	...	...	...	...	...
Milk	...	...	...	...	...	...	...	...
Month	(As in Chinese)	...	...	...	...	...	...	...
Moon	Bala	Pala	Laa	Hobomo	Deuna	Hapa	Chobo	Nikia
Mother	Ama	Ama	Io'	Amo	Mié	Ava	Amo	Nai
Mountain	Po'tsang	Mitsa	Kegm	Beu	Kouang	Moumi	Mide	Pri
Mouth	Hamé	Ami	Yèt	Nepi	Soup	Moko	Mikou	Dote
Mule	{ Amo, horse Lotzeu, mule }	Lotzeu (Chinese) }	Lo	...	...	...	...	...
Night	Mitchi	Mitchi	Dom	Moutchi	...	Moupo	Amitchi	Pour
Nose	Namé	Natou	Poutsong	Nouben	Nang	Nako	Neubi	Mousse
Numerals								
1	Timo	Tima	A	Ti	Neung	Tin	Timo	Leun
2	Nimo	Nima	I	Gni	Song	Nia	Neu	Song
3	Semo	Soma	Pou	Sa	Sin	Sinla	Sogni	Sam
4	Humo	Ima	Pié (lom)	Chli	Si	Nglai	Ligni	Si
5	Ngamo	Loma	Ou	Ngo	Ha	Nga	Ngogni	Ha
6	Koumo	Kouma	Tia (lom)	Tchou	Ho	Ko	Tchogni	Hok
7	Chiomo	Sema	Tiou (lom)	Cheu	Tielo	Cha	Chigni	Tiet
8	Rumo	Chiema	Gni (lom)	Hé	Piet	Héa	Hegni	Piet
9	Tsimo	Pouima	Dou	Ku	Kao	Kolé	Kugni	Kao
10	Tsemoa	Tiema	Sop	Tsen	Sip	Titchi	Tsigni	Sip
11	Tsetimo	Tsitiema	Sopa	Tsenti	Sipié	Titchitin	Tsitigni	Sipiet
20	Nitsimo	Nitsi	Nisop	Guitseu	Sao	Nitchi	Ntso	Sao
100	Tiha	Tiha	Ape	Tiho	Houaï	...	...	...
200	...	...	...	...	...	...	...	...
1,000	Titsien	Titong	...	Tidjo	Sien	...	...	...
10,000	...	...	...	...	...	...	...	...
Opium	...	...	...	...	...	...	...	...
Ox	Moune	Miniou	Ngong	Gni	Ouo	Miou	Niousai	Mouei

	9 HOU-NĪ.	10 HATGU.	11 YAYO.	12 LOLO.	13 CHUI PAĪ.	14 LOKAĪ.	15 LOLO.	16 POU MA.
Palm-tree	...	...	...	...	...	...	...	...
Panther	Hazeu	Lo	Diane	Zi	...	Apoubè	Ima	Avai
Pig	...	...	...	...	...	...	...	...
Pipe	Iacou	Iacou	...	...	...	...	...	...
Pork	Aka	Aha	Toung	Ve	Naï	Oua	Ve	Li
Rain	Miela	Ououhou	Ponboulo	Akole	...	Moujeulo	Amouho	Lé(ia) (?)
Red	Iousou	Aneu	Bouiti	Neu	Lien	Palagni	Megni	...
Rice	Tsepou	Tsepou	Maï	Ketou	Kao	Tsaka	Tchipeu	Ngou
Right	Tsala	Lamoua	Tsaipou	Atou	Mouhoa	Latchai	Iobe	Tiensap
River	Mitsa	Loupo	To	Lo	...	Loka	Awou	...
Road	Kama	Hako	...	...	...	...	...	Ngroang
Root	...	...	...	...	...	...	...	...
Salt	Tiadeu	Tsadzeu	Daou	Tso	Keu	Alai	Tcholai	Plou
Salt (rock)	...	...	...	...	...	...	...	...
Saltpetre	...	...	...	...	...	...	...	...
Sand	...	...	...	...	...	...	...	...
Sheep	Atche	(A)tse (this A is sometimes left out)	Ioung	Matchi	Mie	Atcheu	Atcheu	Pe
She-goat	...	...	...	...	Seloung	Ala	Loma	...
Shoes	...	...	...	...	...	...	...	...
Sieve	...	Koyo	...	...	...	...	...	...
Silver	Poudie	Pou	Niane	Tou	Nine	Pou	Piou	Moul
Skin	...	...	...	...	...	...	...	...
Sky	M(ou) (?)	Mi	Goun	Mu	Fa	Guesin	Meun	Plip
Smoke	...	...	...	...	...	...	...	...
Snow	Poulouche	...	...	...	...	...	...	...
Soul	...	...	...	...	...	...	...	...
Stone	Khalou	Loma	Iaoha	Loupeu	Mihine	Hekou	Lomogué	Simou
Stream	...	...	...	...	...	...	...	...
Sugar	...	...	...	...	...	...	...	...
Summer	...	...	...	...	...	...	...	...
Sun	Neuma	Nima	Monoï	Nedjino	Tavene	Mougni	Meugni	Naisigni ¹
Table	...	Paun	...	...	...	...	...	...
Thread	...	...	...	...	...	...	...	...

Tiger .	Iaho ...	Iako ...	Habien ...	Ien ...	Ia ...	Chou ...	Akeu ...	Soup ...
Tobacco .	Iaho	Iako	Habien	Ien	Ia	Chou	Akeu	Soup
Tomb .	...	...	...	...	...	...	...	...
Tongue .	...	...	...	...	...	...	...	...
Torch .	...	...	...	...	...	...	...	...
Valley .	...	...	...	...	...	...	...	...
Water .	Outchou	Outchou	Woma	Ignié	Nam	Aka	Awou	Om
White .	Iouba	Apiou	Boui	Tou	Hao	Pala	Mepiou	Tié
Winter .	...	...	...	...	...	...	...	...
Woman .	Hamia	Hamia	Manza	Midia	Kouniene	Jamina	Jomai	Conpote
Wood .	Abo	Tikhou	Iang	Sideno	Mai	Tsekou	Chiteu	Si
Year .	(As in Chinese)	...	...	...	...	...	...	...
Yellow .	Iuné	Aseu	...	Cheu	Loun	Atoungo (?)	Hopa	...
I .	Ngo	Ngo	Ia	Ngo	Ouo	Nga	Nu	Ao
Thou .	Nga	Lo	Moui	Nga	Tai	No	Ngo	Ni
He, She, It	La	Anou	Nan	Ioulo	Ka	Kou	Souo	I
We .	Honiamé	Katou Everybody	...	...	...	...	...	...
You .	Tchumalé		...	...	...	...	...	...
They .	Everybody		...	...	...	...	...	...

	17 LOKAĬ.	18 MINCHIA.	19 LISSOU.	20 TONO. ²	21 PETSSEN or HAN LAMA.	22 PE LISSOU.	23 MOSSO.	24 LOUTSE.
Black .	Nu	Hou	Nene	Nong	Heuno	Nien	Na	Na
Blue .	Ono	Na	Nitchi	Tuniang	Naitcha	...	Pie	Pchiong
Boat .	...	...	...	Hongtso	...	...	Lou	Gongchi
Buffalo .	Aka	Chungue	Angue	Gueinouko	Shuingue	Anngue	Tchigueu	Oo
Caravan .	...	...	...	...	...	...	...	...
Chicken .	Ga	Kiteu	Aya	Ngohoung	Ke	Aya	A	Kakié
Chief (title)	...	...	Ouangti	...	...	...	Kha	Ankang
Child .	Zapa	Seutseunio	Zaneza	Souzo	Chatou(dzi)	Za	Zué	Aukiel
Cold .	Ka	Kan	Dja	Ko	Keu	Dia	Tche	Glaud
Copper .	Keu	To	Dji	Tiang	Tou	Dji	Ai	Ra

¹ Signi is perhaps a suffix,² Add the particle "loma" like the Lolos.

	17 LOKAÏ.	18 MINCHIA.	19 LISSOU.	20 TONO.	21 PETSEN or HAN LAMA.	22 PE LISSOU.	23 MOSSO.	24 LOUTSE.
Cotton .	Sala	Hochi	Sala	Tavou	...	...	...	...
Cup .	...	...	...	...	...	...	...	...
Daughter	Zami	Niotzeho	...	Soumizo	Niutsini	Ami	Mizuzu	Poumakielra
Day .	Tigni	Agni	Teugni (1 day)	Annin	Kouanié (1 day)	Gnié	Digni (1 day)	Gnin
Deer .	Keuzeu	Malou	Tse	Malou (Chin.)	Tavo	Tse	Tchoua	Chaoua
Dog .	Keu	Kouate	Ana	Kuihang	Koua	Ana	Ku	Degui
Duck .	...	...	...	...	...	...	...	...
Ears .	Napo	Gniopipo	Napo	Nansitze	Guioutsoue	Napo	Aidzeu	Ana
Earth .	Mi	Djipetène	Menne	Moutetiang	Djipen	Hami	Tue	Sa
Eyes .	Mesi	Ouepo	Miaseu	Miaotchidzeu	Ouecho	Miaseu	Mien	Ne
Father .	Apa	Abié	Aba	Apo	Niakani	Aba	Apa	Anpe
Fire .	Ami	Houi	Ato	Mia	Houé	Ato	Mi	Tme
Fish .	...	...	...	...	...	...	...	...
Foot .	Keupou	Kotopene	Tchipe	Tchipo	Kou	Tchipe	Kou	He
God .	Fou	Oué	Kouni	Nono	Toupoussigno	Kouni	Poula	Lha
Gold .	Chi	Tchi	Cheu	Tchi	Tchi (atié)	Chi	Ha	Ser
Gun .	...	...	...	...	...	...	...	...
Hand .	Lapou	Suipa	Lepe	Lopo	Chichio (2 hands)	Lepe	La	Oune
Honey .	...	...	...	...	...	...	...	...
Horse .	Mou	Mete	Am	Miangko	Mate	Aman	Joa	Ta
Hot .	Ho	Houe	Tsa	Tseu	Ni	Tsa	Tseu	Len
House .	Ié	Hoke	Hie	Ieule	Hoka	Hi	Dji	Kime
Iron .	Chou	Te	Dime	Hjo	Tchi	Hou	Chouo	Chiam
Knife .	Atho	Itazeu	Ata	Mianka	Itié	Ata	Jeute	Chemkieng
Lance .	...	...	...	...	...	...	...	...
Left .	Lamé	Tiépo	Lalle	Loio	Tsochie	Nechoua	Ouata	Agueu
Man .	Hoka	Tseuni (Pé)	Tsouboum	Ozo (ia)	Niaka	Tsouza	Zoutchou	Atsang
Month .	...	...	...	...	...	...	...	...
Moon .	Hapa	Mingoua	Aba	Lole	Miaoua	Aba	Hémé	Sela
Mother .	Amé	Amo	Ama	Amé	Amo	Ama	Ama	Anmé
Mountain	Hopu	So	Cheko	Pin	Chié (koué)	Kote	Ndiou	Meli
Mouth .	Moko	Uikoue(téné)	Kabe	Nitolo	Tsoukoue	Kape	Meta	Neugo
Mule .	...	...	...	...	...	...	...	...
Night .	Moupeu	Hou	Sakoua	Miaokoue	Chaho	Sinkoua	Moukou	Nadeng

	Nose Numerals	Nako	Pihé (téné)	Nakou	Nalin	Tsokote	Nakou	Nima	Sna
	1	Tima ¹	Ji	Te	Téia ²	I	Tié	De (kou)	Kigue
	2	Nima	Ko	Gni	Néia	Ko	Gni	Ni (kou)	Agni
	3	Sele	Sa	Sin	Sinia	Sa	Sao	Su (kou)	Asom
	4	Ole	Chi	Li	Nia	Si	Li	Lou (kou)	Abli
	5	Nama	Ou	Ouan	Ngouia	Ngou	Ouan	Ngoa (kou)	Pnga
	6	Koma	Fo	Tcho	Kaia	Fo	Tchou	Tchoa (kou)	Kron
	7	Cheuma	Tchi	Cheu	Néa	Tchi	Chi	Sin (kou)	Chegni
	8	Chima	Pia	He	Iaia	Pia	He	Hou (kou)	Chiot
	9	Kôma	Tiou	Koua	Kouia	Tiou	Kou	Ngou (kou)	Dgou
	10	Titsi (ma)	Tseu	Tseu	Tseia	Tcheu	Tseu	Tse (kou)	Titsel
	11	Titsiti (ma)	...	Tsenti	Tsete	...	...	Tsede (kou)	Titselkigue
	12	...	...	...	...	...	...	...	Titselgni
	20	Nitsi	...	Guitseu	Netseia	...	...	Nitse (kou)	Agnitsel
	100	Tiha	Ipe	Tienhin	Peia	...	...	Dichi (kou)	Kichia
	200	...	...	...	...	...	...	...	Agnichia
	1,000	Tihin	...	Tietse	Petchié	...	...	Ditou	Titseltselchia
	10,000	...	...	...	...	...	...	...	...
441	Ox	Logni	Yote	Agni	Nouko	Yongiou	Agni	Nagueu	Noua
	Panther	La	Pateu	...	Ouamo	Pe	Lama	Njeu	Zeigue
	Pig	...	...	...	...	...	...	Bati	Senbi
	Pipe	...	...	...	...	...	...	...	...
	Pork	Ga ³	Te	Ave	Ohong ⁴	Te	Ai	Bou	Oua
	Rain	Mouila	Vochigo	Meha	Mohevo	Jeuou	Maha (li)	Heu	Namza (the sky flows)
	Red	Ogni	Hoang	Si	Tunne	Ta	Si	He	Psepse
	Rice	Tegueu	Me	Dzapou	Tcho	Mi	Tchepou	Tchoua	Ambou
	Right	Lana	Pipo	Leya	Lové	Tachie	Ligueu	Ita	Abrang
	River	Ngueu	Koukon	{ Ima, a deep river Imaza, a river }	Miha	...	...	Loke	Long
	Road	Iako	To	Tiago	Koumodzo	Satou	Tiako	Joukou	Melang
	Salt	Alai	Pi	Tsabo	Tso	Tsoue	Tsabo	Tsai	Slah
	Sheep	Atchi	Ahiogni	Atche	Ianhang	Jo	Atche	Iou	Ayau
	Silver	Pou	Gni	Pou	Ngoué	Gné	Pou	Hun	Ngone
	Sky	Guesa	Chitsen	Ossa	Moule	Heka	Ossa	Men	Nam

¹ "ma" is probably a suffix.³ Pronounced almost "va."² "ia" is probably a suffix.⁴ "hong" guttural.

	17 LOKAÏ.	18 MINCHIA.	19 LISSOU.	20 TONO.	21 PETSEN or HAN LAMA.	22 PE LISSOU.	23 MOSSO.	24 LOUTSE.
Snow . . .	...	...	...	...	...	...	Mbé	Toane
Soul . . .	...	...	...	...	...	...	Tazoa	Kourou
Stone . . .	Hapu	Tsokoui	Motseu	Lalé	Toukoué	Adzou	Loupa	Loung
Summer . . .	...	...	...	...	...	...	...	...
Sun . . .	Mouni	Nipié	Moutsa	Moulé	Nipe	Moutsa	Nimé	Namlong
Table . . .	...	...	...	...	...	...	...	...
Tiger . . .	...	Laotou	Lama	Longko	...	...	...	...
Tobacco . . .	Sou	Ien	Mopou	Miho	Ien (koua)	Iamo	Ien	Not
Tomb . . .	...	...	...	...	...	...	...	...
Water . . .	Ika	Su	Iguia	Guei	Sui	Adia	Djié	Ngan
White . . .	Pou	Peu	Pou	Pou	Pin	Pou	Tai	Hong
Winter . . .	...	...	...	...	...	...	...	...
Woman . . .	Zami	Niounié	Zamo	Soumia	Niouhoumo	Zameu	Mitchou	Poumara
Wood . . .	Iai	Dzeu	Siko	Teang	Djeu	Sidzeu	Seu	Chigne
Year . . .	...	...	...	...	...	...	...	Augni
Yellow . . .	Gnita	...	...	...	...	...	...	...
I . . .	Nga	Ngo	Ngoa	Ngo	Ngo	Ngou	Neu	Ago
Thou . . .	No	No	Nou	Ngio	Ngí	Nou	Nga	Na
He, She, It . . .	Pa	Po	Iaoua	Ngupié	Atanié	A	Ouo	Aug
We . . .	...	...	...	...	...	...	...	...
You . . .	...	...	...	...	...	...	...	...
They . . .	...	...	...	...	...	...	...	...

	25 THIBETAN.	26 LOUTSE.	27 KIOUTSE.	28 MISHMI.	29 KIOUTSE.	30 SINGPHO.
Black . . .	Nana	Na	Na (kissé)	...	...	...
Blue . . .	Ngongngong	...	Iosédio	...	...	...
Boat . . .	Oua	Gongchi	Gongchi	...	...	...
Buffalo . . .	Kioulong	...	...	...	...	...
Caravan . . .	...	...	...	...	...	...
Chicken . . .	Chu	Kakha	Kang	Tchai	Kha	Oou
Chief (title)	Peumbo	...	{ Bessé Mokoua }	...	...	...
Child . . .	Raro-pou (son)	Zene	Nago	...	...	...
Cold . . .	Tchrangmo	Dzung	Tit	...	Adeng	Kechoun
Copper . . .	Ra	Ra	Song	...	...	...
Cotton . . .	...	...	...	...	...	...
Cup . . .	...	...	...	...	...	...
Daughter . . .	Poumo	Nago	Pamatiel	...	...	...
Day . . .	Guinma	Gni	Dogni	...	...	...
Deer . . .	Chaoua	Chioua	...	...	...	...
Dog . . .	Tse	Degui	Degueni	Koui	Agni	Koui
Duck . . .	...	...	...	...	...	...
Ears . . .	Nakio	Ana	Ana	Inne	Ana	Na
Earth . . .	Mé	Sa	Ga	Niay	Reka	Nga
Eyes . . .	Migue	Nie	Me	Mi	Ne	Mi
Father . . .	Apa	Ape	Apai	...	...	...
Fire . . .	Me	Tmé	Tami	May	Tsami	Ti
Fish . . .	...	...	...	...	...	...
Foot . . .	Lomba	Haï	(C)hi	Pla	Chi	Legou
God . . .	Namlakubo	...	...	...	...	...
Gold . . .	Ser	Ser	Ser	...	...	...
Gun . . .	...	...	...	...	...	...
Hand . . .	Lapa	Oull	Oull	Jaouk	Oueul	Neta
Honey . . .	...	...	...	...	...	...
Horse . . .	Ta	Ta	Maguen	...	...	...
Hot . . .	Tsamo	Gond	Augueul	...	Pela	Pelong
House . . .	Kamba	Djin	Kiom	Béi	Tchin	Ta
Iron . . .	Kia	Ouézon	Chiam	...	...	...
Knife . . .	Tchrekiong	Chiam	Chiam	Taksoum	Tcham	Chi

	25 THIBETAN.	26 LOUTSE.	27 KIOUTSE.	28 MISHMI.	29 KIOUTSE.	30 SINGPHO.
Lance . . .	...	...	...	...	...	...
Left . . .	Jela	Agoui	Agoui	Koouai	Agueka	Lepai
Man . . .	Mi	Laulatchai	Lengla	...	Assom	...
Month . . .	Daoua	...	...	...	...	...
Moon . . .	Daoua	Sola	Tsala	...	Tchla	Cheta
Mother . . .	Ama	Amé	Amai	...	...	...
Mountain . . .	La(ou)re	Laka	Laka	Lendzuo	Tchikoug	Poum
Mouth . . .	Ka	Neugo	Nevi	Tchou	Nigou	Nkoup
Mule . . .	...	...	...	...	...	...
Night . . .	Tseurigu	Nadung	Agueni	...	...	...
Nose . . .	Na	Sena	Sena	Minniaune	Chena	Nadi
Numerals						
1 . . .	Kigue	Ti	Ti	Gmo	Ti(lung) ¹	Ay
2 . . .	Gui	Gui	Gui	Kenine	Ni(lung)	Kong
3 . . .	Som	Saum	Saum	Kesam	Achem(lung)	Mechum
4 . . .	Je	Bli	Bli	Kambune	Adzi(lung)	Mali
5 . . .	Nga	Panga	Panga	Kalène	Pauga(lung)	Manga
6 . . .	Tchron	Keou	Keou	Ketame	Terou(lung)	Kou
7 . . .	Dun	Segni	Segni	Noune	Chingueu(lung)	Sinit
8 . . .	Guié	Chiet	Chiet	Gune	Achiat	Matsat
9 . . .	Gou	Daguen	Daguen	Lane	Tegueu	Tsikou
10 . . .	Kiou	Tietsel	Titsel	Tiap	Tisé	Chi
11 . . .	Kioukigue	...	...	Gmoko	Tiséti(lung)	Chiay
12 . . .	Kiougni	...	...	...	...	...
20 . . .	Guichou	Agnitsel	Agnitsel	Kitaümeuc	Anisé	Khoum
100 . . .	Guia	...	...	...	...	...
200 . . .	Guiguia	...	...	...	...	...
1,000 . . .	Tontihrakigue	...	...	...	...	...
10,000 . . .	Tretso	...	...	...	...	...
Ox . . .	Long	Noua	Noua	Maniong	...	...
Panther . . .	Zigue	...	...	...	...	...
Pig . . .	Senbi	...	...	...	...	...
Pipe . . .	...	...	...	...	...	...
Pork . . .	Pa	Oua	Oua	L	Oua	Oua
Rain . . .	Kierba	Namsa	Namoua	..	...	...

Red .	Memer	Psai	Maningchi	Ha ...	Amsiet ...	Ngou ...
Rice .	Dre	Ambeu	Amtché	Keyene	Abanko	Leka
Right .	Dela	Abeung	Abeun	...	...	...
River .	Longkiou	...	Ouando	...	...	...
Road .	Lam	Molon	Tara	...	...	...
Salt .	Tsa	...	Sala	...	Tsla	Tchioum
Sheep .	Lou	Yang	Atchit	...	...	...
Silver .	Nguet	Ngoui	Ngoui	...	Tzadra	...
Sky .	Nam	Nam	Gameun	Remina	Moulang	Mo
Snow .	Kaoua	Touane	...	...	...	...
Soul .	Kourou	...	...	...	...	...
Stone .	Do	Loung	Loung	Laong	Long	Noung
Summer .	...	...	...	...	...	...
Sun .	Gnima	Maou	Nam	...	Kounip	Tchian
Table .	...	...	...	...	...	...
Tiger .	...	...	...	...	...	...
Tobacco .	Toa	Not	Neut	Tambia	Melit	Loudi
Tomb .	...	...	...	...	...	...
Water .	Kiou	Nang	Nang	Ti	Tchi	Ka
White .	Keker	Hong	Salan	...	...	...
Winter .	...	...	...	...	...	...
Woman .	Namo	Poumara	Pama	...	Tsamari	...
Wood .	Chigne	Chiong	Ching	Tsal	Chum	Poun
Year .	Lo	...	...	...	...	...
Yellow .	...	...	...	...	...	...
I .	Ngo	Ago	Nga	...	...	...
Thou .	Kieu	Na	Aug	...	...	...
He, She, It .	Korong	Koméio	Koméio	...	...	...
We .	...	...	...	...	...	...
You .	...	...	...	...	...	...
They .	...	...	...	...	...	...

¹ "lung" seems to be a suffix.

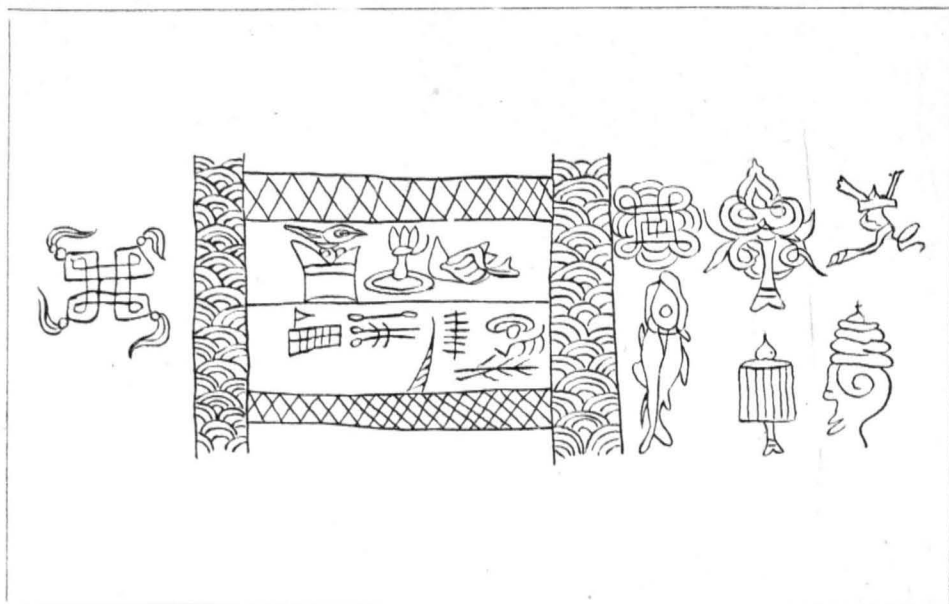
FROM TONKIN TO INDIA

COMPLEMENT TO NO. 24—LOUTSE VOCABULARY—furnished by
FATHER DUBERNARD at Tsekou

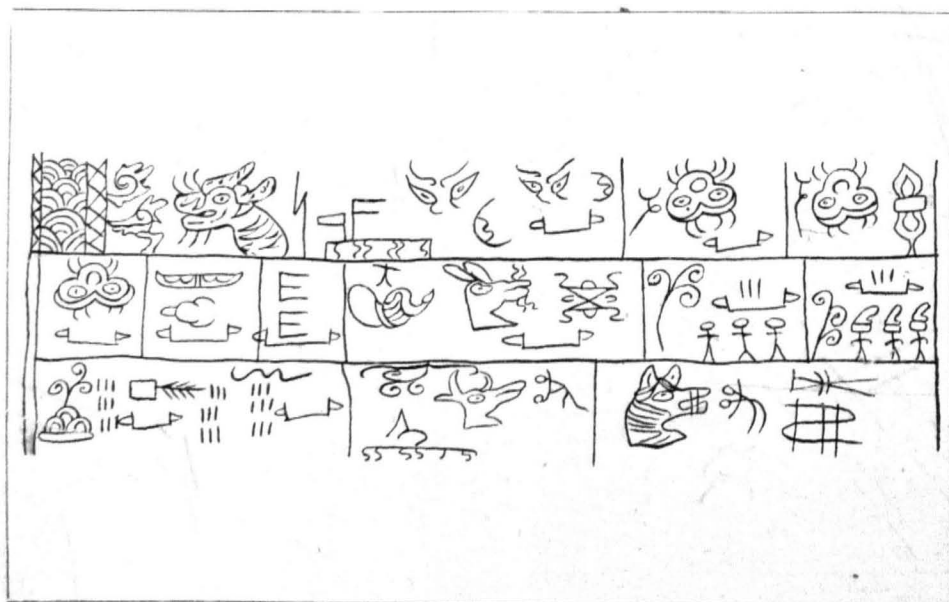
- Civil chief : *Pone*.
 „ : *Ankang*.
 He is a great chief : *Ankang katen re*.
 (chief) (great) (he is).
 Blind : *ne me yang*.
 (eye) (not) (sees).
 Deaf : *aua me tong*.
 (ear) (not) (hears).
 You must comb yourself : *Ouni sé gone*.
 (hair) (to comb) (must).
 There are four chickens : *Kakie bligou al*.
 (chickens) (four) (there are).
 How many children have you ? *Na antienne dangyo al*.
 (To you) (children) (how many) (there are).
 I have five : *Pnga you al*.
 How many daughters have you ? *Poumatienza dangyo al*.
 (Daughters) (how many) (there are).
Poumatienza agni yo, lankiera assom yo.
 (Girls) (two) (I have), (boys) (three) (I have).
 How old is the eldest ? *Temeyo dongnin kia*.
 (The biggest) (what age) (has).
 He is 20 : *Agnitsel gnin kia*.
 (20) (years) (has).
 How old is the youngest ? *Kienemiyo dongnin kia*.
 (The smallest) (what age) (has).
 He is at the breast : *Kiou nga*.
 (breast) (drinks).
 I want to drink some water : *Ngang nga gal*.
 (water) (to drink) (wish).
 I wish to eat some mutton : *Ayan cha ke gal*.
 (sheep) (meat) (to eat) (wish).
 I am cold to-day : *Tagnila zing*.
 (to-day) (cold).
 It will rain : *Nam za boa*.
 (sky) (rain) (will fall).
 We must dress : *Io goua gal*.
 (coat) (to clothe) (must).
 Do you know how to draw the cross-bow ? *Tana ab ne soa*.
 (cross-bow) (to draw) (do you know).
 Is there much water in (the) Bayul ? *Tourong meli ngang kateng la*.
 (Bayul) (country) (water) (big) (has it).
 Maize : *tambo*.
 Corn : *azong*.
 Ripe buckwheat : *amblé*.
 Unripe „ : *poa*.
 Barley : *soa*.
 Antelope : *adzou*.
 Musk deer : *kiela*.

FROM TONKIN TO INDIA

TITLE



FIRST PAGE



MOSSO MANUSCRIPT NO. 1.
(Reduced to $\frac{2}{3}$ size.)

APPENDIX B

TITLE

On the cover | date of the book, day, month, | religious ornaments.

FIRST PAGE

Name of the book | *doni ma do tu*: to see one is not able (in the beginning was chaos) | *ma to*: one is powerless | *dapatu*: after to see (light was created).

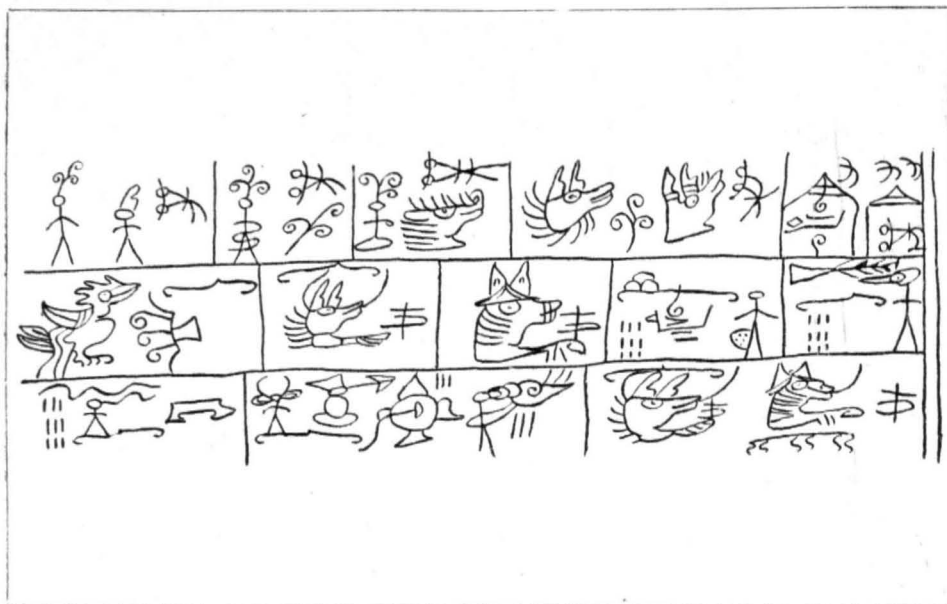
Topa: the wizard | *regatu*: to say | *régué*: all plants | *sassatu*: were formed
| *djouso soukotu*: three men come-forth from the ground | *djouni soukotu*: three women come-forth from the ground.

Djoulong gouloutu—jousin gouloutu—joupou gouloutu: first a stone—then a tree—a road | *Moudju lignanti*: men and animals are in being | *jadjo kagné ti*: the horse stays in the house, a foal is born.

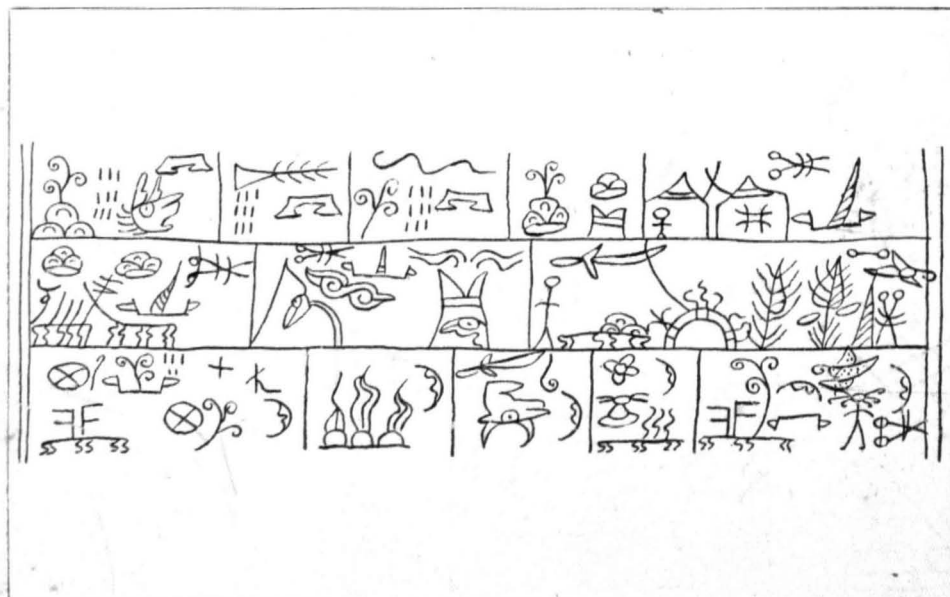
KEY TO MOSSO MANUSCRIPT NO. 1.
(With Oral Text.)

FROM TONKIN TO INDIA

SECOND PAGE



THIRD PAGE



MOSSO MANUSCRIPT No. 1.

Reduced to $\frac{2}{3}$ size.)

APPENDIX B

SECOND PAGE

Zodjo mignienti: the man and the woman are joined | *Kodjo djeugnienti*: a numerous family comes | *sudjou pounienti*: the whole family | *Kudjou lignienti*: to a dog which goes into the mountain with its female | *pondjoun dèniati*: the village next is made.

Tchéton a nétoé: heaven gives food to the fowls | *mouñu djou kuku*: heaven gives food to the animals | *diné djoujou li djouja papali*: heaven gives food to the horses | *djoulou goulondjo*: heaven has made nine stones | *djousé goundja djo*: heaven has made nine woods.

Djoumba goukudjo: heaven has made nine roads | *tzouzaliguéso—mésakapu gouloundu—takasoulané—bakasoujamo*: the man is—the priest is—he strikes the cymbals—and makes music | *djoukalapati*: heaven has made the hands of the man white | *Djouji konapatu*: heaven has made the feet of the horses white.

THIRD PAGE

Djouloungouloutu guénélékutu: nine stones fall from heaven | *djousu kountadjou*: nine trees, from heaven | *djoupa goukundjou*: heaven has made thread (clothing) | *djouloungouloung djou*: heaven has sent an evil stone (men were disobedient to their chief) | *ni pengni bendjala*: of two villages, one man kills the other.

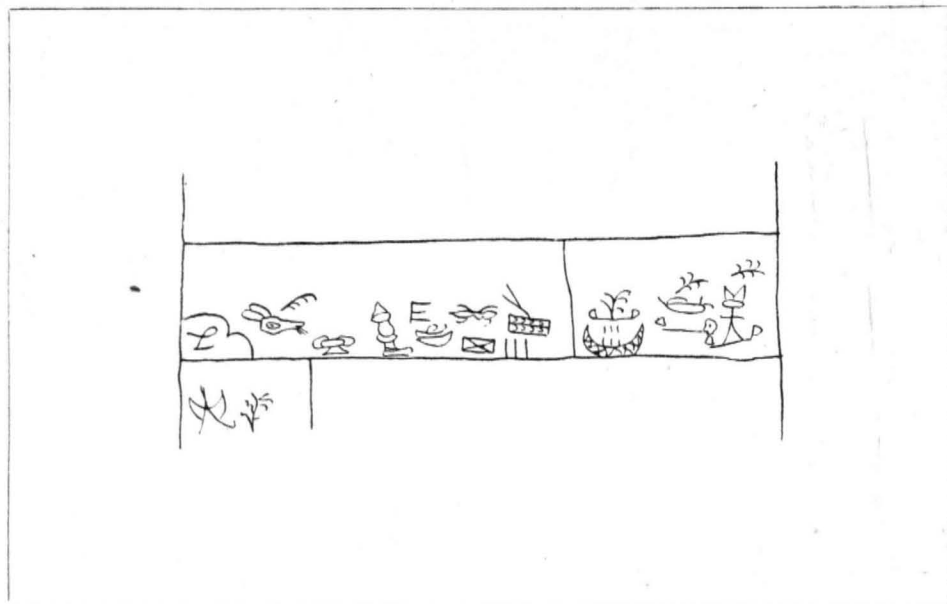
Ndaka leumédja: two villages desire war | *tiona aouaja*: heaven sends the wind and the scourges (rain, hail) | *Kutchuchutchendja*: a man must not covet another's pasture | *chioutudzetudja*: a man must not covet another's harvest.

Tzejoularadu tenguidzéjoutu tsignidendjuchamari: one cannot count in ten days the number of murderers and robbers | *moutsulalimangué*: funeral rites are always to be observed (many are the dead) | *Koutuluchamapou*: the blood of animals (sacrificed for the dead) ever flows | *Zélémoudjutu samahéu*: the blood is like the grass | *dzouzar matumé ndzeumo madju*: if it were not for robbery and murder the chiefs would have no subsistence.

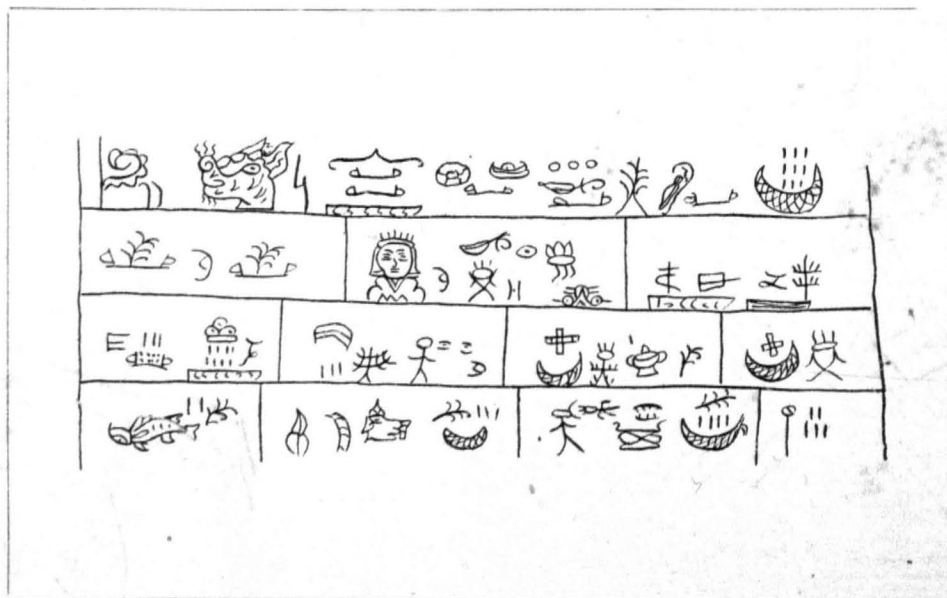
KEY TO MOSSO MANUSCRIPT NO. 1.
(With Oral Text.)

FROM TONKIN TO INDIA

TITLE



FIRST PAGE



MOSSO MANUSCRIPT NO. 2. FROM TSEKOU.
(Reduced to $\frac{2}{3}$ size.)

APPENDIX B

TITLE

Cover. Title.

Year of the hare ; second moon ; the third. | Amazon.—Signature of the wizards.

FIRST PAGE

Of old neither sky nor earth (chaos). | In the beginning the sky and the earth were made ; the sun, the moon, three stars, trees, water, three stones.—All nature was composed of thirteen things.

(Then were made) things hurtful to man—the dragon of earth, the genius of the rocks, the attack of mysterious force | (Was made) the wizard who (to guard mankind from bane) teaches eighty writings | A spirit without blemish wards off that which can harm.

That he may not destroy—gold, silver, the turquoise are offered to this spirit | Three gifts having been made to heaven, mankind, herds, and crops will flourish | (Sign that there shall be no more ills.) The earth regards the sign (placed above), all will prosper. | If this sign is disregarded there will come 113 terrible calamities.

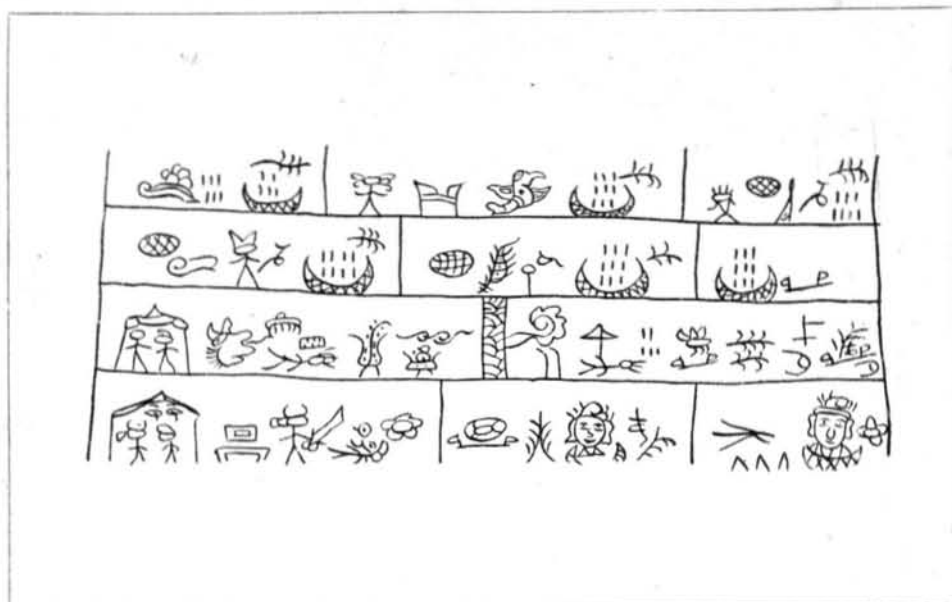
Man will be caught by these calamities, like the fish by the hook | Ye will be treated like the grass, the tree, the stone, which are cast into the fire. | If ye turn again, on the earth will be seven mountains which shall provide all that ye desire | These seven hills.

KEY TO MOSSO MANUSCRIPT No. 2.

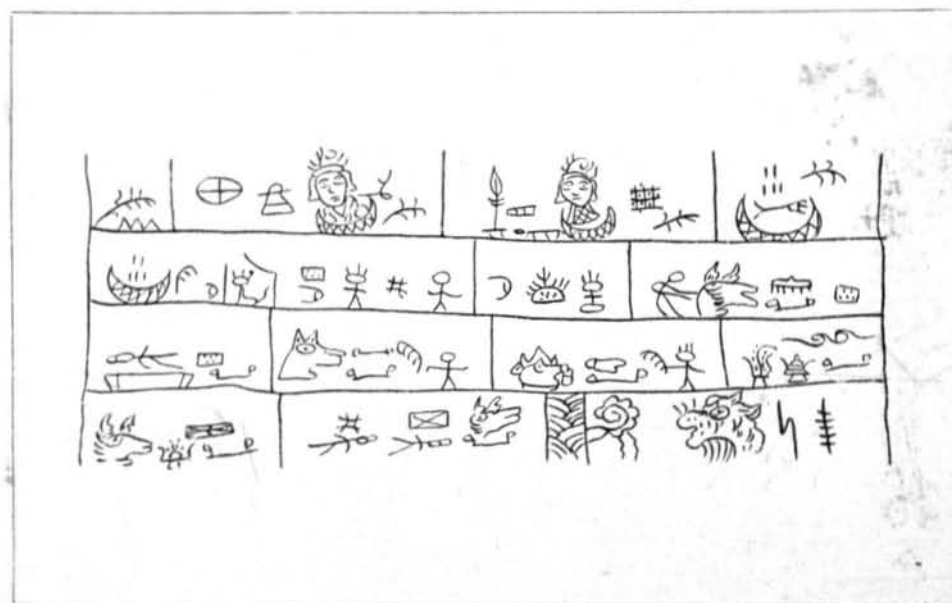
(The literal translation of these pages is given for the first time.)

FROM TONKIN TO INDIA

SECOND PAGE



THIRD PAGE



MOSSO MANUSCRIPT NO. 2. FROM TSEKOU.
(Reduced to $\frac{2}{3}$ size.)

APPENDIX B

SECOND PAGE

Will grant a happy cycle of sixty years | The trees have (then) fine leaf ;—the branches, fruit ;—the birds, abundant food.—The earth produces crops. | In gratitude for all these benefits—man offers gold, silver, turquoise, coral, ivory, seven kinds of gifts.

These presents made, it needs to continue in well-doing to have the same plenty | These presents made, the trees, the crops, the fruits of the earth will still thrive | prosperity will endure yet other ninety years stable (as a rock).

(Invocation) May man, like a god in the temple, suffer neither sickness, nor cold, nor heat. | Chapter II. | Half mankind has obeyed—half has become stiff-necked, seven arrows have overtaken man. The king of the Tompas (wizards) in wrath having taken back all manner of writings.

Withdraws into the temple—meditates on his writings.—Having read them, he comes forth in fury with a sword, to take vengeance on the disobedient | the belly is starved—the crops are sterile.—Man, chastised, becomes sorrowful ; he has white thoughts (repents). | The punishment ceases.—Man is happy.—Gold returns.

THIRD PAGE

The turquoise returns | The moon is unclouded—The stars rise—Man is joyful. | In his joy he plants a lhader (prayer banner)—He offers all kinds of turquoises. | (Invocation) In the world may the sick man be healed in five days.

If in five days he is not healed | The Tompa in anger | having taken again all manner of books | The Tompa, like a ravening (that eats flesh) tiger—comes to destroy the devil which departs not.

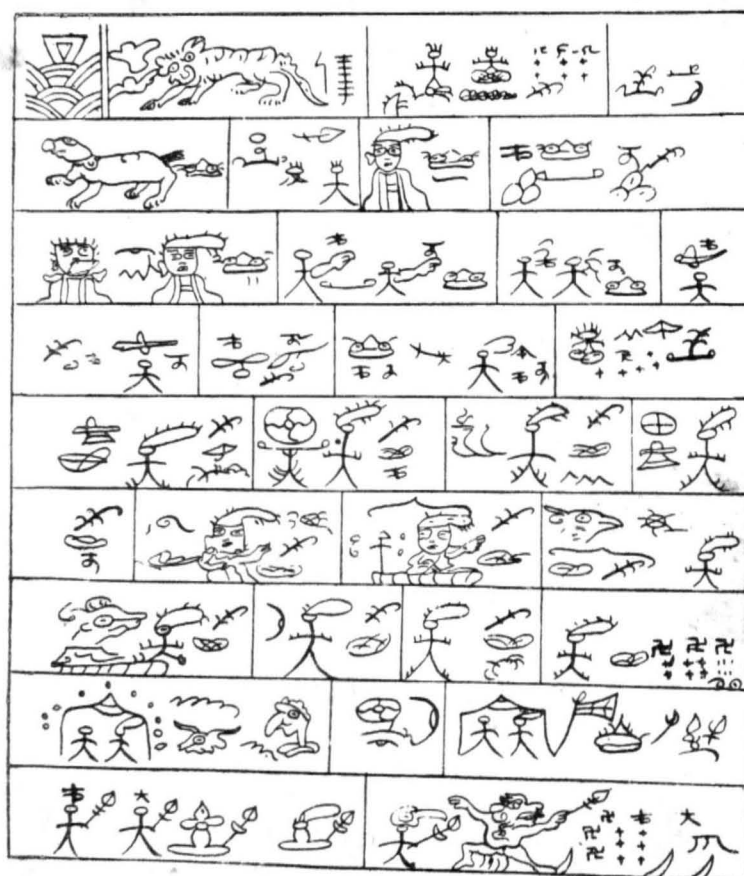
May the sick be healed | May the horse feed well—May the crops yield grain, may the sick not suffer from heat, nor from cold—and may he be in good health | If henceforth righteous aims are pursued.

A good horse, garments of silk, treasures | all these gifts are carried to the temple by the sick, in token of gratitude. | Chapter III. | The planet not being obeyed.

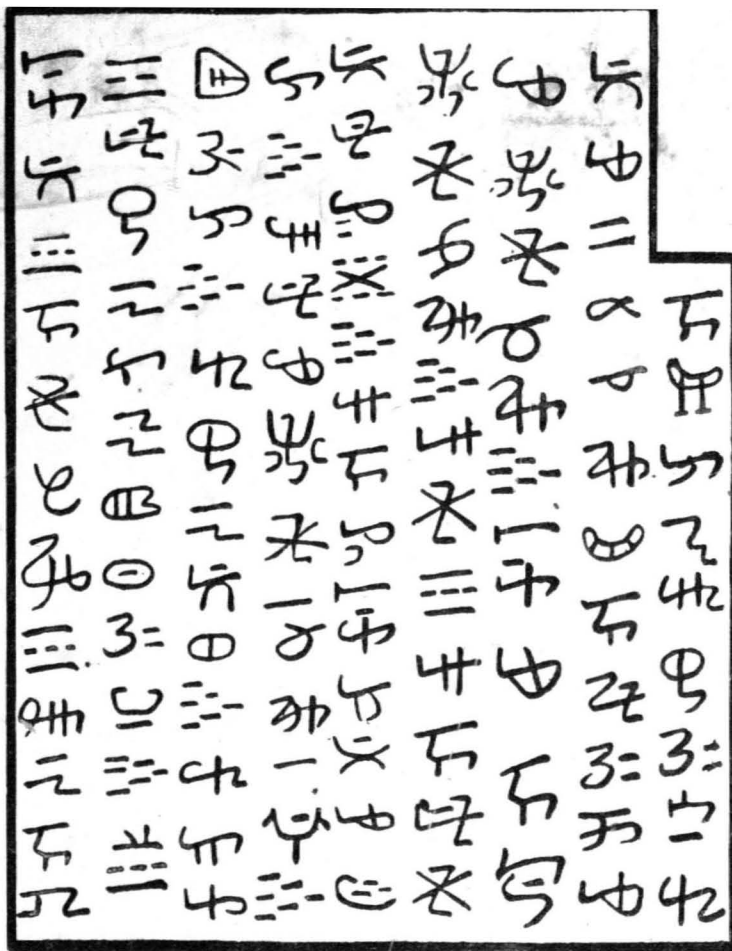
KEY TO MOSSO MANUSCRIPT NO. 2.

(The literal translation of these pages is given for the first time.)

FROM TONKIN TO INDIA



Fragment of a Mosso Manuscript.



Specimen of Lolo Manuscript.

Engravings copied from "La Frontière Sino-Annamite," by G. Devéria (Ernest Leroux, Publisher).

APPENDIX B

One	5	Horse	馬
Two	4	Ox	牛
Three	三	Sheep	羊
Four	22	Fowl	雞
Five	5	Dog	犬
Six	三	Pig	猪
Seven	W	Water	水
Eight	三	Fire	火
Nine	双	Red	紅
Ten	十	A-	一
		Tchou	日

Lolo Signs with their Meanings.

FROM TONKIN TO INDIA

III

MATERIAL FOR THE EXPEDITION

The valises we used were those known as Pavia valises, capable of being borne on a man's shoulders. For travel in Yunnan alone somewhat larger ones could be taken, but they would have to be very strong on account of the frequent falls among the mules. One mule might load 154 lbs. (adp.); but for a long march 132 lbs. is enough. The maximum weight of each valise when full ought not to exceed 66 lbs. In the list of items clothing is left out, and money, which has all to be carried with one, and is very heavy, is likewise not mentioned. It must be remembered that the supplies here catalogued were calculated for a year's requirements.

CAMP

- | | |
|--|----------------------------|
| 1 large double-covered patrol tent for three persons, about 21 sq. ft. | 1 pickaxe. |
| 1 small do. for two (same shape). | Nails and screws. |
| *Tent pegs for same, and reserve. | 1 saw. |
| 3 camp beds. ¹ | 2 hatchets. |
| 3 sheepskin beds. | 2 kettles. |
| Cord and packthread, 2 lots. | Letters to mark the cases. |
| 3 canvas buckets. | 3 lbs. of wire. |
| 2 basins. | 2 dessert knives. |

PROVISIONS

- | | |
|----------------------------------|------------------------|
| 40 packets tobacco. | 2 boxes tinned soup. |
| 22 boxes crushed sugar. | 2 „ cutlets. |
| 44 packets candles. ² | 4 „ potted meat. |
| 9 lbs. ground coffee. | 5 „ sardines. |
| 18 small boxes onion soup. | 6 „ filleted herrings. |
| 6 tablets chocolate. | 4 „ mackerel. |
| 4 boxes condensed milk. | 1 bottle rum. |
| 4 pots Liebig. | 1 „ brandy. |
| 4 „ cheese. | |

ARMS AND AMMUNITION

- 3 guns, calibre 12.
2 Winchester.
1 Express Bland 303.
1 Express 577.
2 guns, calibre 38 (for small birds).³
2 revolvers (Lebel).
1 revolver (Smith and Weston).
2 fishing tins, with hooks and lines.
Bottles of anti-rust and vaseline.
Cartridge cases, containing—
- | | | | |
|---------------------------------|---|-----|-------|
| Made cartridges,
calibre 12. | { | 194 | shot. |
| | | 45° | 0 |
| | | 174 | 2 |
| | | 200 | 5 |
| | | 200 | 6 |
| | | 230 | 8 |
| | | 380 | 12 |
- 400 wads and caps.
4000 rounds for calibre 38.
400 „ for Winchester.
430 „ for Express 303.
100 „ for Express 577.
375 „ for Lebel revolver.
300 „ for Smith and Weston
revolver.
Shot—2 sacks 0; 2 sacks 2; 3 sacks 12.
Powder, 11 lbs.
70 Favié cartridges (for exploding in
rivers, etc.).

¹ My companions soon followed my example, and slept on a mat and waterproof sheet on the ground.

² We were able to economise these for several months by using small Chinese oil-lamps.

³ Most useful for ornithological collections.

APPENDIX B

NATURAL HISTORY

8 jars, different sizes, hermetical.
Alum, acetate of soda, arsenical soap.
Sawdust.
Herbal paper.

Labels, 3 dissecting cases, scissors, wadding, strychnine.
Snares.

PHOTOGRAPHY ¹

1 Haneau Richard apparatus with roll or box plates, 9×12 centim. (corresponding to English $\frac{1}{4}$ plate).
1 do. Ledocte, 9×12 .
1 camera, $4\frac{1}{2} \times 6$.
60 dozen plates, 9×12 celluloid.
28 " 9×12 glass.

About 80 dozen plates for small camera.
About 15 rolls 9×12 .
Clothes, black paper, spare frames, black bags.
2 bags for changing plates.
1 red lamp.

INSTRUMENTS, WRITING MATERIALS, ETC.

M. Roux's instruments (theodolite, sextant and artificial horizon, astronomical telescope, hypsometers).
1 eclimeter, 2 telescopes.
1 mètre, 1 décamètre.
3 thermometers.
5 aneroid barometers.

20 notebooks, 4 dozen pencils, calculating sheets, etc.
White paper, ink in powder.
2 portfolios, 1 compass box.
2 smoked glasses.
Flints, wicks, pipes.
Chinese visiting cards.

DRUGS ²

2 small medicine chests.
1 do. reserve (4 boxes kola, 2 boxes salol, 4 boxes antipyrine, 4 pots quinine, 2

bottles phenicated water, 2 pots boric acid, tapsias, sublimate).
1 spray.

BOOKS

1 case of books and maps concerning region of expedition.

PRESENTS ³

Large chromolithographs, small images.
1 pendulum clock.
3 revolvers.
Pipes.
Flints.
18 boxes with glasses.
20 circular boxes (metal).
A score of pocket glasses.

30 scent bottles.
5 dozen spyglasses.
5 dozen cigarette holders.
6 looking-glasses with three sides.
384 small cases of needles.
60 scissors.
2 leather purses.
4 small panoramas.

¹ The experience of three expeditions has shown me that reliance cannot be placed on rolled films. After having used apparatus 18×24 centim., 13×18 , 9×12 , I ended by only employing one of $6\frac{1}{2} \times 9$, the results from which can in most cases be enlarged.

² I strongly recommend the use of kola as an excellent sustainer and restorative. After trying it our porters had great faith in it. Boric acid is also most valuable; wounds and sore eyes being frequent, it was useful among the natives.

³ Among the presents the most popular were those which had anything to do with tobacco; one could hardly take too many pipes and flints. Next to them came knives, scissors, spyglasses, needles, looking-glasses, and musical boxes. The scents, panoramas, microscopes, jewellery and trinkets, and things in general which had not a direct practical use, were less successful. In the Mekong valley and Bayul a good reception was given to linen and Chinese yarn, especially when in dark blue.

FROM TONKIN TO INDIA

PRESENTS—*continued*

- | | |
|---------------------------------|------------------------|
| 12 kitchen knives. | 1 watch in case. |
| 24 small microscopes. | 1 inkstand. |
| 1 silk handkerchief. | 5 scarf pins. |
| 36 penknives. | 20 boxes bonbons. |
| 24 knives. | 15 musical boxes. |
| 2 pipes in shape of a revolver. | Trinkets in duplicate. |
| 52 bone boxes. | 1 silver mug. |
| 4 cotton kerchiefs. | 23 toilet requisites. |
| Pins. | 3 writing requisites. |
| 2 field glasses. | 1 aristonette. |
| 1 hunting knife. | 4 watches. |
| 12 celluloid glasses. | 18 wooden boxes. |
| 9 magic mirrors. | 12 harmonicas. |
| 1 cup and saucer (silver). | 1 large musical box. |
| 1 " " (nickel). | 6 gilt brooches. |

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