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J. H. Frison

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DECEMBER, 1906.

The Monthly General Meeting of the Society was held on Wednesday, the 5th December, 1906, at 9-15 P.M.

The HON'BLE MR. JUSTICE ASUTOSH MUKHOPADHYAYA, M.A., D.L., Vice-President, in the chair.

The following members were present:—

Dr. N. Annandale, Raja Ram Chandra Bhanj, Mr. F. B. Bradley-Birt, Mr. I. H. Burkill, Mr. R. Burn, Rai Sarat Chandra Das Bahadur, Babu Amulya Charan Ghosh Vidyabhusan, Mr. H. G. Graves, Mr. H. H. Hayden, Mr. D. Hooper, Mr. W. W. Hornell, Dr. W. C. Hossack, Mr. C. Little, Dr. M. M. Masoom, Mr. R. D. Mehta, C.I.E., Capt. W. F. O'Connor, R.A., Lieut.-Col. D. C. Phillott, Major L. Rogers, I.M.S., Pandit Yogesa Chandra Sastri-Sankya-ratna-Vedatirtha, Mr. R. R. Simpson, Babu Chandra Narain Singh, Mr. H. E. Stapleton, Mahamahopadhyaya Satis Chandra Vidyabhusana, Mr. E. Vredenburg, Rev. E. C. Woodley.

Visitors :—Mr. E. C. H. Cresswell, Babu P. K. Das, Mr. H. C. Jones, S. Naseer Hosain Khan, Babu Dwijendra Narain Ray, Babu Purnendra Narain Singh, and others.

The minutes of the last meeting were read and confirmed.

Seventy-three presentations were announced.

In accordance with Council order, the General Secretary read the following report submitted by the Delegates to the Aberdeen University's 400th Anniversary on behalf of the Society.

"Your Delegates to the Aberdeen University on the occasion of its recent Quartercentenary Celebrations have the pleasure to submit a short report of their mission. They do not propose to describe the Festival, as they understand that the official Publications Committee of the University intends to present Books of the proceedings to all the bodies that sent representatives.

The Celebrations, which extended over four days—September 25th-28th—of exquisite weather, were begun by a service in one of the two constituent colleges of the University (King's College) and were ended by an evening Reception in the other (Marischal College). During the entire week the City was *en fête*.

In the afternoon of the FIRST DAY, the Delegates, upwards of 240 in number, and representing the Universities, Colleges, and chief Learned Societies of the United Kingdom, as well as the principal Universities and Academies of the British Possessions, and those of America, Austro-Hungary, Belgium, Denmark, France, Germany, Holland, Italy, Japan, Norway, Russia, Sweden,

dale ; *Captain Claude B. Stokes*, 3rd Skinner's Horse, Deolali, proposed by Lieut.-Col. D. C. Phillott, seconded by Dr. N. Annandale ; *Lieut. G. Harris*, 56th Infantry, F.F., proposed by Lieut.-Col. D. C. Phillott, seconded by Dr. Annandale ; *Major F. O'Kinealy*, I.M.S., Civil Surgeon, Darjeeling, proposed by Major L. Rogers, I.M.S., seconded by Major F. P. Maynard, I.M.S. ; *Mr. Arthur William Dentith*, I.C.S., Assistant Comptroller, India Treasuries, proposed by Lieut.-Col. D. C. Phillott, seconded by Dr. N. Annandale ; *Major W. Donnan*, I.A., Examiner, Ordnance and Factory Accounts, Calcutta, proposed by Lieut.-Col. D. C. Phillott, seconded by Dr. N. Annandale ; *Mr. J. C. Jack*, I.C.S., Joint Magistrate, Backergunge, proposed by Mr. H. E. Stapleton, seconded by Lieut.-Col. D. C. Phillott ; *Dr. Adrian Caddy*, M.D., M.B., B.S. (London), F.R.C.S. (Eng.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), D.P.H., Calcutta, proposed by Major L. Rogers, I.M.S., seconded by Dr. Arnold Caddy ; *Dr. H. Funck*, M.D., Surgeon to the Consulate-General for Germany, proposed by Major L. Rogers, I.M.S., seconded by Major F. P. Maynard, I.M.S. ; *Professor S. C. Mahalanabis*, proposed by Mr. J. A. Cunningham, seconded by Dr. N. Annandale ; *Major B. H. Deare*, D.P.H., I.M.S., Civil Surgeon, Patna, proposed by Major L. Rogers, I.M.S., seconded by Major W. J. Buchanan, I.M.S. ; *Captain H. B. Foster*, I.M.S., Eden Hospital, Calcutta, proposed by Major L. Rogers, I.M.S., seconded by Captain J. W. Megaw, I.M.S. ; *Captain J. C. Holditch Leicester*, M.D., F.R.C.S., M.R.C.P., I.M.S., General Hospital, Calcutta, proposed by Major L. Rogers, I.M.S., seconded by Captain J. G. Murray, I.M.S. ; *Major W. J. Hayward*, M.B., I.M.S., Police Surgeon, Calcutta, proposed by Major L. Rogers, I.M.S., seconded by Dr. W. C. Hossack ; *Captain Harvey*, R.A.M.C., Station Hospital, Calcutta, proposed by Major L. Rogers, seconded by Major F. P. Maynard, I.M.S. ; and *Captain C. C. R. Murphy*, The Suffolk Regiment, proposed by Lieut.-Col. D. C. Phillott, seconded by Dr. N. Annandale ; were balloted for as Ordinary Members.

Mr. D. Hooper exhibited some primitive candles made from the seeds of *Myristica canarica*, one of the wild nutmegs of Southern India. The tree is found in South Kanara, Malabar and Travancore. The seeds, which contain half their weight of fat, are beaten into a paste and pressed into the hollows of small bamboo stems, and then heated over a fire. The black candles, moulded in this peculiar fashion, are removed and used for illuminating purposes by villagers. The fat of the seeds consists mainly of myristicin, is readily saponifiable, and warrants a wider commercial application.

On behalf of Mr. J. W. Ryan, Manager of the Government Rubber Plantations at Mergui, the Natural History Secretary exhibited a photograph of a prostrate but vigorously growing tree of *Hevea brasiliensis*, the Para rubber tree. The purpose of the exhibit was to illustrate the vitality of this species.

The following papers were read :—

1. *A list of 124 new words, chiefly European, that constantly occur in modern Persian Newspapers; collected from the newspapers of the past six months.*—By MUHAMMAD KAZIM SHIRAZI, *Persian Instructor to the Board of Examiners.* Communicated by LT.-COL. D. C. PHILLOTT.

This paper will be published in a subsequent number of the *Journal*.

2. *Salima Sultan Begam.*—By H. BEVERIDGE.

3. *The Paladins of the Kesar Saga. A collection of Sagas from Lower Ladakh. Tale No. III.*—By REV. A. H. FRANCKE.

This paper will be published in a subsequent number of the *Journal*.

4. *Note on the Common Kestrel (Tinnunculus alaudarius).*—By LT.-COL. D. C. PHILLOTT.

5. *Note on the Lager Falcon (Falco jugger).*—By LT.-COL. D. C. PHILLOTT.

6. *A note on Swertia tongluensis and on a new variety of Swertia purpurascens.*—By I. H. BURKILL.

These papers will be published in a subsequent number of the *Journal*.

7. *A Chapter on Hunting Dogs, being an extract from the Kitāb^{ul}-Bazarah, a treatise on Falconry, by Ibn Kushājim, an Arab writer of the Tenth Century.*—By LT.-COL. D. C. PHILLOTT and MR. R. F. AZOO.

8. *Note on a specimen of Felis tristis, Milne-Edwards, in the Indian Museum.*—By N. ANNANDALE.

9. *Notes on Indian Mathematics.*—By G. R. KAYE. Communicated by DR. E. D. ROSS.

These papers will be published in a subsequent number of the *Journal*.

10. *Miniature Tank Worship in Bengal.*—Compiled by A. N. MOBERLY, I.C.S., *Superintendent of Ethnography, Bengal.* Communicated by the *Anthropological Secretary*.

11. *The Saorias of the Rajmahal Hills.*—By R. BAINBRIDGE. Communicated by the *Anthropological Secretary*.

This paper will be published in the *Memoirs*.

12. *Notes on the Freshwater Fauna of India, No. XI. The Occurrence of the Medusa, Irene ceylonensis, in Brackish Pools, together with its Hydroid stage.*—By N. ANNANDALE.

13. *Notes on the Freshwater Fauna of India, No. XII. A Preliminary note on the Polyzoa occurring in Indian Fresh and Brackish Pools, with the description of a new Lophopus.*—By N. ANNANDALE.

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14. *Notices of Orissa in the Early Records of Tibet.*—By RAI SARAT CHANDRA DAS, BAHADUR.

These papers will be published in a subsequent number of the *Journal*.

The Second Meeting of the Medical Section of the Society was held on Wednesday, the 14th November, 1906, at 9-15 P.M.

MAJOR W. J. BUCHANAN, I.M.S., in the chair.

The following members were present :—

Major E. H. Brown, I.M.S., Dr. A. Caddy, Captain F. P. Connor, I.M.S., Lt.-Col. F. J. Drury, I.M.S., Dr. W. C. Hossack, Dr. W. W. Kennedy, Captain D. McCay, I.M.S., Captain J. W. D. Megaw, I.M.S., Major D. M. Moir, I.M.S., Major J. Mulvany, I.M.S., Captain J. G. P. Murray, I.M.S., Captain J. J. Urwin, I.M.S., and Major F. P. Maynard, I.M.S., Honorary Secretary.

Visitors :—Capt. J. A. Black, Dr. Adrian Caddy, Capt. Harvey, R.A.M.C., Capt. J. C. H. Leicester, Major F. O'Kinealy, I.M.S., and Dr. J. B. Phillippe.

The minutes of the last meeting were read and confirmed.

Major D. M. Moir showed some clinical cases.

Captain J. W. D. Megaw read a paper on "A Year's Experience of Malaria at the Medical College Out-patient Dispensary."

Major L. Rogers showed some lantern slides illustrating the short fevers of Calcutta.

The discussion on the last paper to be continued at the next meeting.

With a vote of thanks to the chair the meeting terminated.

60. *The Paladins of the Kesar Saga. A Collection of Sagas from Lower Ladakh.*—By A. H. FRANCKE.

PREFACE.

The following tales, which I call "Sagas of the Paladins of the Kesar-saga" were dictated slowly by the same man who dictated the "Lower Ladakhi Version of the Kesar-saga," and were written down by the Munshi of Khalatse, *Yeshe rig 'adzin*. The sagas contained in the present collection are not considered by the people to be of the same importance as the Kesar-saga proper; but they are interesting enough to the European student of Tibetan folklore as throwing new light on the Kesar-saga. According to my conception, the present sagas constitute parallels to the Kesar-saga, as were told in side-valleys. Some of the Agus appearing in them look exactly like Kesar himself under a new name. When these tales were united with the principal saga, Kesar under a different name (*i.e.*, the Agu) had to become a son or servant of Kesar under his own name. In the first of the tales, however, we find Kesar under his own name, and the tale reminds us in many parts decidedly of Kesar-saga, Tale No. V, Kesar's defeat of the giant of the North.

TALE No. I.

THE TALE OF KESAR'S BELOVED MON.

Abstract of Contents.

Kesar had a Mon (low-caste man) whom he loved more than anybody else. The Agus became jealous and killed the Mon on the occasion of a hunting party which they had undertaken in his company, by pushing him from a high rock. Kesar went to find him and heard a voice speaking out of his corpse. Therefore he opened the Mon's belly with a knife, and out of the corpse came two Mons, a male and a female one which he carried home in his loin cloth. Both were some sort of devils who required a great amount of food. At first the Agus had to feed them, but when their supplies were finished, the Mon-devils were entrusted to grandfather *rTse dgu*. This old hermit gave them much work and little food. Once they found a lump of gold and a turquoise of the size of a hearth-stone. These treasures they presented to the hermit, asking him to increase their food and give them less work. He, however, did the opposite, as he was of opinion that they would find him more treasures if he was hard on them. Then the two devils fled to a poisonous lake in which they bathed, with the result that their appearance became perfectly diabolic. One of their teeth grew down to the earth and another up to the sky, and they received locks of blood-red colour. They attacked

the hermit in his house, but Kesar was sent to rescue him. When they had told their tale to Kesar, the latter advised them erroneously to go to the land of the Nāgas and devour its inhabitants. This was a slip of the tongue, for he had intended to send them to the land of the devil. When the misery of the Nāgas became very great, they were advised by their sorcerers to send two of their ladies, *Dargyi yang mdzesma*, and *Dargyi mthong mdzesma*, to Kesar, to ask him to come to their assistance. These two Nāginī went towards the land of *gLing* and put up 100 black and 100 white tents. First of all, Agu *Khrai ngo khrai thung* was sent against them. The ladies took the shape of bears, and the Agu ran away before them, wounding his horse with his own sword in his fright. Then Agu *dPalle* was sent, but he also fled before the bears. Still he found out that they were females. Therefore he gave the advice that *a'Bruguma* ought to be sent to the tents. She was well accepted and asked by the Nāginī to send King Kesar to them for some time. Kesar agreed to that, saying that *a'Bruguma* would probably repent her promise. Then *a'Bruguma* was ordered to fetch Kesar's horse from the cold (or straight) valley. But the horse behaved awkwardly and would not come. By throwing a stone at it with a sling, she succeeded after all in mounting it. But then the horse went off in the most extraordinary way, carrying her up to the sky, and then dragging her along mountain ridges, *a'Bruguma* spending most of the time below the belly of the horse, with the result that, when they arrived after all in the stable, the back of the horse was sore. Then *a'Bruguma* went to her father and mother, angry. Kesar healed the horse with the medicines which were always ready for use in the horse's ear, and took *a'Bruguma* back to the castle. There she had to clean all the harnesses and other armature which Kesar intended to take along with him on his expedition.¹ Then *a'Bruguma* sang a song in which Kesar is praised as a being from whom light, dew, and flowers proceed. Kesar answered with a song in which he said that, although leaving as a young man, he would return as an old man. Kesar was led by a fox to the land of the Nāgas. He punished the two Mon-devils and sent them to the land of the devil to eat there all the poisonous snakes. Then he played at dice with the brother of the two Nāginī, *Yang mdze-ma* and *mThong mdzesma*. Thus nine years elapsed. But then the Nāga had a difference with Kesar and called him, "Forgetter of *gLing*." That very night Kesar saw his horse in his dream. He went to look after him the next day and found him after a long time. The horse advised him not to accept the food which was to be offered to him by the Nāginī, as it was poisonous, and they rode off in the direction of *gLing*. Two days before arriving there, Kesar took the shape of a wolf, and soon met with Agu *dPalle* who had taken the shape of a sheep. But the latter recognized Kesar and blamed him for not hurrying home, as *bKā blon ldanpa*

¹ There is a very similar passage to this in Kesar-saga, Tale No. V, Kesar's victory over the giant of the North, Bibliotheca Indica.

had taken possession of the castle of *gLing* and '*aBruguma*, and killed *Agu mDa dpon gongma*. Therefore Kesar took the shape of a begging monk and went to the *gLing* castle to ask alms. He told '*aBruguma* that he had heard news of Kesar's death in the land of the *Nāgas*. '*aBruguma* liked that news and gave him a little room to sleep in. At night Kesar surprised '*aBruguma* in the company of *bKā blon ldanpa*. The latter was suspended in a cage, but released when he made over his property to Kesar. Also '*aBruguma* was forgiven and re-accepted.

VOCABULARY OF THE NEW WORDS AND NAMES.

མན་ཚད། *man thsād* or *ma thsādde*, 'the measure not being full'; 'not enough with this.'

ཁོང་སུ། *khongsu*, or *khokungyi su*, one among them.

ཁྱོ་ཕྱེ། *lboste*, blown up, filled with air or gases.

ནམ་བག། *nambag*, the upper part of the coat, above the girdle, which is used as a pocket.

བག་ཕྱེ། *bragste*, perfect tense of modern '*abregpa*, 'cut off' (the limbs of killed animals).

གྲོ་ཀོ་རོ། *grokoro*, dumplings.

སྐྱུ་མཆ་ཅས། *skumcas*, take off, diminish.

སྐྱེད་ཅས། *skyedcas*, make more, increase.

བྲང་གི་ལྷང་བ། *dranggi lungpa*, instead of *granggi lungpa*, means 'straight valley.'

ཆ་མོ། *chaso*, long tooth.

ཁ་ཁོར་ལ། *kha norla*, making a mistake in his speech, a slip of the tongue.

སང་སང་ལྷ་འབྲོག། *sang sang lha 'abrog*, name of an outlying field.

ཞེ། *zho*, not only $\frac{2}{3}$ Rupees as is stated in the dictionaries, but 12 annas \times 6, or $4\frac{1}{2}$ Rupees.

རྩ་བོར། *rtsva gor*, ear of grass.

སྒྲིག་ཅས། *nyogcas*, trample down (of grass).

ཁ་ཤུལ་བྲང་ཅས། *kha shul btangcas*, rinse the mouth.

དྲོན་མོ། *drenmo*, the same as *dredmo*, female bear.

ལྷག་དཀར། *ltag dkar*, white neck, of animals.

པོང་། *phong*, the same as *phabong*, rock.

ཁར་ཁར་བརྒྱུ་ཅེས། *khar khar btangces*, sharpen (a knife, sword).

སྡུག་པོ། *sdugpo*, unhappy.

ཞིམ་བྲག། *zhimzag*, sweet-meat.

ཤི་ལང་། *shilang*, dung.

ཆར་མ། *charma*, a small stone which is broken from a rock.

ཁྱེལ་ཅས། *khyelcas*, mount a horse.

ལྷོ་ཡོག་ལ། *lbo yogla*, underneath a horse, on its stomach.

རྩ་ཀྱ། *rtsaku*, small knife.

ཡམ་བི་དི་ཕུ་ལུ། *ambiti phrulu*, name of a fruit.

ཞུར་ལེ། *zhurle*, the dress of the horse from saddle to tail.

བན་འདུམ། *ban 'adum*, said to mean 'silk.'

པད་ཀ། *padka*, the same as *padma*, lotus-flower.

ཀོ་ཤམ་སི། *koshamsi*, leather boots.

སྙིང་འབྲང་ཅས། *snying 'abrangcas*, 'the heart is following,' to become excited.

རྣམ་ཅར། *rnam tsar*, respectful for *tsadar*, loin-cloth, girdle.

རྩི་ཅེ། *nyi rtse*, 'sun-summit,' the lustre of icy peaks.

སྒར་སྒུར། *sgara sgure*, very old.

སྒང་ར། *sgang ra*, beard, *ra* stands for *skra*.

རུག་ན་རིན་ཆེན། *rtsug rna rinchen*, name of a Nāga.

གསང་རབས། *gsang rabs*, food given to monks.

ཆར་ལ་བཏང་ཅས། *charla btangcas*, hang up, suspend.

སེམས་འདྲི་སྟེ། *sems 'adriste* ('*adriste* stands probably for '*abriste*'), conciliated.

ང་དང། *ngatang* } Of the two words for 'we,' *ngatang* is used
ངཞ། *ngazha* } we. inclusive, and *ngazha* exclusive of the
addressed person.

༥ ཀེ་སར་གྱི་མོན་གཅེས་པའི་སྒྲུང་སྤྱི་ཡོན།

ཡོད་ཚུགས། གླིང་རྒྱལ་ལྷ་མ་ཀེ་སར་ལ་མོན་གཅེས་པ་ཞིག་ཡོད་
ཚུགས། ཀེ་སར་གྱིས་དེ་མོན་པོ་ཚང་མའི་སང་རིན་ཅན་བཙུ་སྟེ། ཚང་
མའི་མགོ་ལ་བོར་རད་ཚུགས་པས། ཟས་ཡང་ཞིས་པོ་བཏངས། གོས་
ཡང་ལེགས་པོ་སྒྲོན་པ་སང། མན་ཚད། རྒྱལ་པོ་ཁོ་རང་གི་ཡོག་ལ་
མོན་དེ་བོར་སྤྲོས་པས། ཁོ་འི་ཡོག་ལ་གླིང་པའི་དཔའ་བོ་ཚང་མ་བོར་རད་
ཚུགས། དཔའ་བོ་ཚང་མ་ལ་སྟེ་ཡོང་སྟེ་གྲུབས་ཤིག་བཙུ་སྟེ་ཟེར་ས། ང་དང་
དཔའ་བོ་ཚང་མའི་མགོ་ལ་ཁོས་མོན་རིགས་ངན་དེ་བོར་འདུག། ཁོ་ལ་ང་
དང་གིས་ཅི་བཙུ་ཡིན་ཟེར་ས་པ། གཅིག་གིས། ང་དང་དང་མཉམ་པོ་རི་
ཞིག་ལ་ཡིངས་ལ་བྱིར་ཡོན། དེ་ནས་བྲག་མཐོན་པོ་ཞིག་གི་མགོ་ནས་བྱར་
ལ་པངས་བཏང་ཡིན་ཟེར་ནས་ཁོང་ཁ་འཆམས་སོ། དེ་ནས་དཔའ་བོ་ཚང་
མས་ཀེ་སར་རྒྱལ་པོ་ལ་ཞུས་པ། རྒྱལ་པོ་ལ། ང་ཞ་ཚང་མ་ཆོན་ལ་
འདྲིར་ལུས་འདུག། ཉེ་རང་གི་མོན་གཅེས་པ་ང་ཞ་དང་མཉམ་པོ་ཡིངས་
དཔོན་ལ་སྟུལ། ང་ཞ་ཚང་མ་ཡིངས་ལ་ཆེན་ལེ་ཟེར་ས་པ། ཀེ་སར་གྱིས་

བ་ལ་འཁྱེར་ན་ཀྱལ་ཟེར་དེ། མེ་མེའི་ཅར་ཁྲིར་ས། མེ་མེས་འདི་རྒྱག་
བཅོས། མེན་བ་ལ་ཞག་གཅིག་ལ་ར་མ་བརྒྱ་བྲག་མྱེ། དེ་བོ་ཁལ་དེ་
པད་བརྒྱ་ཐག་བཅུག་མྱེ། ཡང་གིང་ཁྱར་བརྒྱ་རྩམ་འཁྱིང་ཅས་དེ་ལས་
ལ་བསྐྱོས། ཟན་དེ་ཉི་མ་ལ་གྲོ་ཀོ་རོ་བརྒྱ་བཅོས། མེན་སྤིང་ལ་ཞག་
རེ་ལ། ལྷག་བརྒྱ་བྲག་མྱེ་ཁལ་དེ་སྒྲུལ་བརྒྱ་ཐག་བཅུག་ས། རྩ་རྩ་
དཀར་བརྒྱ་འཁྱིང་བཅུག་ས། དེ་རྒྱག་ལས་བཏང་མྱེ། ཉི་མ་ལ་ཟན་
གྲོ་ཀོ་རོ་བརྒྱ་བཏང་ཅས་བཅོས་མྱེ་པོར་ས། དེ་ནས་ཞག་ཅིག་ལ། མེན་
པ་ལ་རིའི་གིང་ཆར་དེ་གསེར་ལྷག་གི་མགོ་རྩམ་ཅིག་ཐོབ་པོ། མེན་སྤིང་
ལ་གྲོག་པོ་འི་རྩ་ཆར་དེ་གཡུའི་ཚིག་བྱ་ཞིག་ཐོབ་པོང་། མེན་པས་
ཟེར་ས་པ། འདི་གསེར་དང་གཡུའི་ཚིག་བྱ་དེ་བཅོང་ན། ང་དང་ལ་ནོར་
ཀྱལ་ལ་ཞིག་ཐོབ་ཡིན་ཟེར་ས་པ། མེན་སྤིང་གིས་ཟེར་ས། ནོར་ཐོབ་མྱེ་
ང་དང་ལ་ཅི་བཅོམ་ཡིན། མེ་མེ་སྤོབ་དཔོན་ཅེ་དག་ལ་སྤུལ་དེ། ང་དང་ལ་
ལས་བཏང་མྱེ་སྒྲུལ། ཟ་བཏང་མྱེ་རྩེད་ཀྱུ་ཡིན་ཟེར་ས་པ། ཁྲིང་ག་ཉིས་
ཀ་ཁ་འཚམས་སོ། དེ་ནས་ཁྲིང་གིས་གསེར་ལྷག་མགོ་རྩམ་དང་གཡུའི་
ཚིག་བྱ་གཉིས་ཀ་ཁར་དེ་མེ་མེ་ལ་ལྷ་སྤུལ་གྱི་སྤྱུ་ཞིག་འདི་རྩར།

ང་ཞའི་མེ་མེས་དངོས་ལ་ཉོན་ལོ།

སྤོབ་དཔོན་ཅེ་དག་བདག་ལ་གསན་ལོ།

རིའི་གིང་ཆར་དེ་གསེར་ལྷག་མགོ་རྩམ་ཐོབ་ལོ།

གྲོག་པོ་འི་རྩ་ཆར་དེ་གཡུའི་ཚིག་བྱ་ཞིག་ཐོབ་ལོ།

དེ་ཀུན་འཁྱེར་དེ་མེ་མེ་ལ་ལྷ་སྤུལ་ཞིག་སྤུལ་ཡིན།

ང་ཞའི་ལྷ་བ་རིག་གསན་པར་མཛོད་ལོ།

ལོག་མེ། ལྷེས་ལྷེས་སི་ལྷེས་སུའུ་ལ་ཡོངས། མོན་པ་མོན་སྤྱིང་གཉིས་
 ཀྱི་ཡུལ་ལ་བསྐྱེད་མེ། སྤྱི་གོང་ཁྱིམ་བཙོ་བརྒྱད་རེ་ཉི་མའི་ཟ་བཏང་
 ལ་ཟེན་ཞིག་འདུགས་པ། སྤྱི་བརྒྱད་བཙད་བཏངས། དེ་ནས་སྤྱི་ཚང་མས་
 གྲུབས་བཙོས་པ། ང་ཏང་གི་ཡུལ་ལ་ཞི་བདེ་ནང་དུ་མཉན་ནས་གནས་པ།
 མི་བརྒྱད་ཆད་ཅེས་ལ་ཐུག་སོང་། སྤྱི་སྤྱོད་ཡིན་ཟེར་དེ། མོ་པ། ཕྱིས་པ།
 བསྐྱེས་ནས་མོ་ཕྱིས་སྤོངས་པས། མོ་འདྲེ་ནང་ནས། སྤྱིང་ཀེ་སར་རྒྱལ་
 བོ་འདྲེ་སྤྱོད་འདུག། ཁོ་འདྲེ་བསྐྱེད་མེ་མིན་བཙོ་བཙོ་བཙོ་བསྐྱེད་མི་འདུག་
 ཟེརས། དེ་ནས་རྒྱལ་བོ་ཀེ་སར་ལ་བོས་པ་སྤྱི་ཆེན་ཟེརས་པ། ཁོང་གི་
 གྲུབས་ནང་དུ་སྤྱི་མོ་དར་གྱི་ཡང་མཐོས་མ་དང་། དར་གྱི་མཐོང་མཐོས་མ་
 གཉིས་ཀྱི་བཏང་ན། ཀེ་སར་སྤོང་ཡིན་ཟེར་དེ། ཁོང་གཉིས་ཀྱི་ལ་ཟེརས་པ།
 ཁྱིམ་གཉིས་ཀྱི་ལ་མཁར་ཕྱིད་ཡུལ་ཕྱིད་རྒྱ་པ་ལ་བཏང་ཡིན་ཟེར་དེ་ཁོང་
 གཉིས་ཀྱི་སྤྱིང་ཡུལ་ལ་སོང་། དེ་ནས་ཁོང་གཉིས་ཀྱི་སྤྱིང་ཡུལ་ལ་རྒྱལ་
 ལྷེས་ཀེ་སར་གྱི་སྤྱིང་རི་སང་སང་ལྷ་འབྲོག་ལ་བསྐྱེད་མེ། གྲུར་དཀར་
 བརྒྱ། གྲུར་ནག་བརྒྱ་ཟས་པ་བཙོ་འདུགས་པས། དེ་རྒྱལ་ཡོད་ཅེས་དེ་
 ཀེ་སར་ལ་ཆོར་དེ། ཨ་གྲུ་ཁྲའི་མགོ་ཁྲའི་ཐུང་ལ་བཏངས་པ། ཨ་གྲུ་
 ཁྲའི་ཐུང་དེ་རུ་བསྐྱེད་མེ་ཐུ་ཞིག་བཏངས་སོ།

ཁྱིམ་གྲུར་དཀར་པ་བཙོ་མཁན་དེ་སྤྱི་ཞིག་ཡིན།

ཁྱིམ་གྲུར་ནག་པ་བཙོ་མཁན་དེ་སྤྱི་ཞིག་ཡིན་ལོ།

ང་ཞུ་རྒྱལ་བོ་འདྲེ་སྤྱིང་རི་ཞིག་ཡིན་ལོ།

ཙྰ་རིང་རིང་ཟས་དེ་ཁྱིམ་ཐོང་གི་མདུང་ཟས་ཡོད་ལོ།

ཙྰ་བར་པ་དེ་ཁྱིམ་ཐོང་གི་མདུང་ཟས་ཡོད་ལོ།

དེ་སང་རྒྱུ་བ་དེ་ན་རྒྱུ་པ་ཟུ་ཞིག་ཡོད་ལོ།

དེ་སང་རྒྱུ་རྒྱུ་དེ་ས་གཞི་ཚང་མ་གང་སྟེ་ཡོད།

རྩ་རིང་རིང་ཟུ་ལ་རྩ་རིན་དེ་དང་ཐུ་རྩ་རྩ་ཡོད།

རྩ་བར་བ་ནམས་ལ་རྩ་རིན་བ་དང་བེ་ཐོ་རྩ་ཡོད།

དེ་སང་རྒྱུ་བ་ལ་རྩ་རིན་ལྷག་དང་ལྷག་རྩ་ཡོད།

དེ་སང་རྒྱུ་བ་ལ་རྩ་གོར་རི་ལ་ཞོ་གྲངས་རི་ཡོད་ལོ།

རྩ་ཟེ་ཅེས་བ་སང་སྟོག་ཅེས་ཐུ་བ་ཡོད་ལོ།

རྩ་འཐུང་ཅེས་བ་སང་ཁ་ཤུལ་བདང་ཅེས་ཐུ་ཡོ།

དེ་རྩ་ཟེར་ས་བ། སྤྱ་མོ་གཉིས་ཀྱིས་གདམ་ལན་ཅིང་མ་ཟེར་བ།

རྩ་མོ་ལྷག་དཀར་རི་ལ་རྩ་སྟེ། ཁྲི་ཐུང་ལ་འདྲེད་དེ་ཁྲིང་ས་སོ། ཁྲི་

ཐུང་འཛིག་སྟེ། རལ་གྱི་ཕྱིར་ལོག་ལ་གྲུབ་གྱིན་ཞིག་ཤིང་དེ་སྤྱིང་མཁར་

དུ་བསྐྱེད་ས་སོ། དེ་རྩ་སྐྱེད་སྐྱེད་ལ། རལ་གྱི་རང་གི་དུ་ལ་ཤིག་སྟེ་མ་

ཁ་འཐོན་དེ་ཡོད་རྒྱུ། དེ་ནས་ཀུ་སར་ལ་ཞུས་བ། ད་དམག་ཡོད་ན་སྤྱང་

ཤིག། དེ་རྩ་དམག་སང་བ་བསྐྱེད་སྟེ་འདུག། ང་མི་དཔའ་བོ་ཡོན་བ་

སང། ང་རང་གི་སྟོག་བསྐྱེད་སོང་ཟེར་ས་བ། ཨ་གྲུ་དཔལ་ལེས་བརྟུས་བ།

དེ་རྩ་གྲུ་ལ་མ་ཁ་འཐོན་དེ་ཡོད་བ་སང་། དཔལ་ལེས་ཟེར་ས། འོ་གཞན་

མཚན་མེན་ནོག། རང་མཚན་ཡོན་ནོག་ཟེར་དེ་ན། ཨ་གྲུ་དཔལ་ལེ་དེ་རྩ་

ལྷ་ལ་སོང་བས། དེ་རྩ་བསྐྱེད་སྟེ་ཡང་སྤྱ་ཞིག་བདང་ས་སོ།

སྤྱ་གྲུ་དཀར་ནང་ཡོད་མཁན་དངོས་ལ་ཉིན།

སྤྱ་གྲུ་ནག་ནང་ཡོད་མཁན་བདག་ལ་གསན་ལོ།

ཁྲིང་ཞེ་གྲུ་པོ་འི་སྤྱང་རི་ལ་ཅི་ལ་ཡོངས།

ཀྱལ་པོ་ཀེ་སར་གྱིས་ཞིས་ཟེང་རྩ་བཀལ་དེ་ཡོད།

བྱ་མོང་རང་གིས་བྱ་ཟན་སྒྲིག་ཅུ་ཞིག་འཁུར་དེ་ཡོད།

ཐུ་འབབ་ཕྱེ་སྒྲིད་རོགས་རིག་སེད་ལོ།

དེ་ཟླ་ཟེངས་པ། ཐུ་ཟས། བྱིད་ཁ་དམར་མོ་སྤྲུག་པོ་ཡོད་ནའང་
འགྲིག། ཀྱལ་པོ་ཀེ་སར་སྒྲིད་པ་རག་ཟེངས་པ། ཇོ་ཇོ་འབྲུ་གུ་ས་ལ་
གི་ལང་ཞིག་ཀྱབ་སྟེ་ན། ཐུ་ཟུང་རི་ནང་དུ་ཤོར་སོང་བས། དེ་ནས་
ཇོ་ཇོ་ལ་སྒོ་ཡོང་སྟེ་ཕྱིར་ལོག་སྟེ་རང་གི་ཡབ་བདུན་པ་དང་། ཡུམ་སྒྲོན་
མོ་འདྲི་མདུན་ལ་ཡོང་སྟེ་འདུགས་པ། ཡབ་བདུན་པ་དང་ཡུམ་སྒྲོན་མོ་
གཉིས་ཀས། ཁ་སྒྲིལ་སྟེ་ཟེངས། ཀེ་སར་དམག་ལ་ཆ་ཅེས་ཡིན་ན། ཡང་
ན་ལོངས་ལ་ཆ་ཅེས་ཡིན་ན། ལས་ཁག་ཅན་ཡོད་འགྲོ། བྱི་རང་ཡང་
རི་ལ་ལོག་སྟེ་སོང་ཟེང་དེ། དབྱུག་དོ་ཞིག་བཤངས། དོ་ཆེ་ཅུང་གསུམ་
བཀལ་དེ་བཤངས་པ། ཇོ་ཇོ་ཡང་རི་ལ་ལོག་སྟེ་སོང་། དེ་ནས་ཐུ་ཟུ་ལ་
གཏས་ལན་གྲུ་ཞིག་བཤངས་སོ།

ཤ་ཐུ་ཟུ་ཀྱང་ཁོད་དངོས་ལ་ཉོན།

ཤ་ཀྱང་ཁོད་དབྱེར་པ་བདག་ལ་གསན།

བྱིད་ཡོང་ཡིན་ལོ་ཟེར་ན་འབབ་སྟེ་ཡོང།

བྱིད་མི་ཡོང་རིག་ཟེར་ན་རེ།

མེ་མེ་འདྲི་ལ་ཁལ་པ་ཡིན།

ཨ་བའི་འདྲི་ལ་ལྷས་པ་ཡིན།

བྱ་མོང་རང་གི་འདྲི་ལ་འཁུར་པ་ཡིན།

ར་དབྱུག་ཁྱི་ལྷུག་པོང་ཐིལ་གསུམ་ཡོད་ལོ།

[N.S.]

ས། དེས་ཤིང་ཤིང་མཐར་དུ་བསྐྱེད་དུ་གསལ། ཁེར་ཤིས་
ཤིང་ལྟོ་ཞིག་བདང་ས།

པའི་ཤིང་ཤིང་ས་ལ་ཉེ་དང་།

ཤིང་ལྟོ་ས་ལ་བདག་ལ་གསལ་དང་།

མ་དང་མ་ལྟོ་ས་ལ་ཤིང་ལོ།

མེའ་ཤིང་ཉེ་དམ་ལྟོ་ས་ཤིག་སྟག་ལོ།

མེའ་ཤིང་མེའ་ལྟོ་ས་ཤིག་ཤིག་བདྱེད་ལོ།

ཉེ་དམ་ཤིང་ལོ་ཤིག་ཤིང་ལྟོ་ས་ཤིག་བདག་ལོ།

མ་དང་ཤིང་ལྟོ་ས་ཤིག་ཤིག་ཤིང་ལོ།

མེའ་ཤིང་ཉེ་དམ་ལྟོ་ས་ཤིག་སྟག་ལོ།

མེའ་ཤིང་མེའ་ལྟོ་ས་ཤིག་ཤིག་བདྱེད་ལོ།

ཉེ་དམ་ཤིང་ལོ་ཤིག་ཤིང་ལྟོ་ས་ཤིག་བདག་ལོ།

དེ་ཤིག་ཤིང་ལྟོ་ས་ཤིག་ཤིང་ལོ།

མེའ་ཤིང་ཉེ་དམ་ལྟོ་ས་ཤིག་སྟག་ལོ།

མེའ་ཤིང་མེའ་ལྟོ་ས་ཤིག་ཤིག་བདྱེད་ལོ།

ཉེ་དམ་ཤིང་ལོ་ཤིག་ཤིང་ལྟོ་ས་ཤིག་བདག་ལོ།

མེའ་ཤིང་ཉེ་དམ་ལྟོ་ས་ཤིག་སྟག་ལོ།

མེའ་ཤིང་མེའ་ལྟོ་ས་ཤིག་ཤིག་བདྱེད་ལོ།

ཉེ་དམ་ཤིང་ལོ་ཤིག་ཤིང་ལྟོ་ས་ཤིག་བདག་ལོ།

མེའ་ཤིང་ཉེ་དམ་ལྟོ་ས་ཤིག་སྟག་ལོ།

གཞུ་ཞི་གཞུ་དོང་སྒོ་ལ་ཕིང་ལོ།
 སྒོ་ལ་ཕིང་ཕྱི་ལན་གསུམ་རྒྱུག་ལོ།
 མཚོ་མོ་འི་མཐིལ་ན་ཆུ་སྒྲུག་རིག་དོང་ལོ།
 ཅན་དན་དམར་པོ་འི་གསང་ཤུག་རིག་རྒྱུག་ལོ།
 མག་མལ་གྱི་དབྱ་ཞུ་སྒོ་ལ་ཕིང་ལོ།
 སྒོ་ལ་ཕིང་ཕྱི་ལན་གསུམ་རིག་སྒྲུག་ལོ།
 མཚོ་མོ་འི་མཐིལ་ན་ཆུ་སྒྲུག་རིག་དོང་ལོ།
 ཅན་དན་དམར་པོ་འི་གསང་ཤུག་རིག་རྒྱུག་ལོ།
 བན་འདུམ་ཅན་སྒོ་ལ་ཕིང་ལོ།
 སྒོ་ལ་ཕིང་ཕྱི་ལན་གསུམ་རིག་སྒྲུག་ལོ།
 མཚོ་མོ་འི་མཐིལ་ན་ཆུ་སྒྲུག་རིག་དོང་ལོ།
 ཅན་དན་དམར་པོ་འི་གསང་ཤུག་རིག་རྒྱུག་ལོ།
 བད་ཀའི་སྒྲི་རགས་སྒོ་ལ་ཕིང་ལོ།
 སྒོ་ལ་ཕིང་ཕྱི་ལན་ཆུ་གསུམ་རིག་སྒྲུག་ལོ།
 མཚོ་མོ་འི་མཐིལ་ན་སྒྲུག་རིག་དོང་ལོ།
 ཅན་དན་དམར་པོ་འི་གསང་ཤུག་རིག་རྒྱུག་ལོ།
 བོས་ཤེན་དར་དབྱག་སྒོ་ལ་ཕིང་ལོ།
 སྒོ་ལ་ཕིང་ཕྱི་ལན་གསུམ་རིག་སྒྲུག་ལོ།
 མཚོ་མོ་འི་མཐིལ་ན་ཆུ་སྒྲུག་རིག་དོང་ལོ།
 ཅན་དན་དམར་པོ་འི་གསང་ཤུག་རིག་རྒྱུག་ལོ།

সিখ্যাব্যবহৃতশ্রীসংপ্রদস্যসিহ।

শ্রুতংস্বসংহিতসংস্কৃতংস্বসংস্কৃতং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

শ্রুতংস্বসংহিতসংস্কৃতংস্বসংস্কৃতং।

সংস্বদংস্বদংস্বদংস্বদংস্বদং।

দংস্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

সংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

সংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

স্বদংস্বদংস্বদংস্বদংস্বদংস্বদং।

[illegible]

61. *Miniature Tank Worship in Bengal. Compiled by A. N. MOBERLY, I.C.S., Superintendent of Ethnography, Bengal.*

In Bengal proper, miniature tanks, dug usually in the courtyard of their houses, enter largely into the religious ceremonies performed by women and girls. This practice is also found in Orissa, but to a less extent, and is still more rare in Behar, although there too ordinary tanks are closely connected with certain forms of worship. The origin of the custom is obscure. Ceremonies in which miniature tanks are used, are usually among those classed as *brata*, or the performance by women of a vow on a certain fixed date, with the object of obtaining some particular benefit, as contrasted with *pūjā*, or worship of the gods by men or women or both, as a regular religious observance. The tank is probably used symbolically. To dig a tank is a virtuous and meritorious action, which may be performed either to please the gods and thus to obtain happiness in this world and the next, or as an expiation of some known or unknown sin. Misfortunes such as barrenness or the death of husband or children are attributed to some religious demerit, and the miniature tank may therefore represent a penance for sins which have caused or may cause them. In the case of children, by whom the majority of the ceremonies, into which the miniature tank enters, are observed, another object may well be to familiarise them with the idea of worship by presenting it in an attractive form, whilst morals are pointed and explanations given by their elders, and a Brāhmaṇ is sometimes called in to perform the final acts. In some instances again, as in the case of the *Chat Barat*, a miniature tank is substituted by high-caste women for the river or tank, at which the ceremony is usually performed, to obviate the necessity of appearance in public. It seems to be generally agreed that these observances are not of Purāṇik origin, though the Yama Pukur ceremony is referred to in the *Bhaviṣya Purāṇa*, and in the same work it is related that the unmarried girls of Nanda-Braja worshipped Kātyāyāni Devī in the month of Agrahāyaṇ, praying that Śrī Kṛṣṇa, the incarnate Viṣṇu, might become their husband,—a prayer somewhat analogous to those used at more than one of the *bratas*. The chief arguments against such an origin of miniature tank worship in its present form are that as a rule the worshipper herself officiates as priest, Brāhmaṇs not being generally employed, and that the verses recited are in the current vernacular, and not in Sanskrit, the language of all Purāṇik *mantras*.

The number of these *bratas* is considerable and the forms vary widely in different localities. It is by no means always clear what god or godling is being worshipped, nor is it possible in all cases to decide whether the ceremonies reported from different districts are merely local forms of one observance or are entirely distinct. They have therefore been arranged chronologically according to the months in which they take place. In some instances the tank employed is not necessarily a miniature tank, and in a few the tank is not indispensable to the ceremony at all.

The chief tank ceremony of Baiśākh, and perhaps the most widely observed of all, is the Puṇya Pukur or, as it is some-

Puṇya Pukur. times called in Rajshahi, where the tank is not invariably used, the Dharmma Pukur. The tank is dug near the household *tulsi* plant (*Ocimum Sanctum*) or, sometimes, on the bank of the Ganges. A small branch of the *bel* tree (*Ægle Marmelos*) bearing seven thorns is fixed in a small ball of clay in the centre and adorned with wreaths of *ākand* flowers (*Callotropis Gigantea*), which are renewed from time to time during the month. Two cowries or, in some districts, a branch of the *bel* tree are placed at each corner. Seven steps are made at the sides and eight cowries smeared with vermilion are placed upside down on each step. In Burdwan *dūrbā* grass (*Panicum Dactylon*) and *bel* leaves smeared with *candan* (Sandal) and vermilion are substituted for the cowries. Figures of gods and heroes are usually painted on the ground near the tank with sandal paste and adorned with vermilion. In Rajshahi, however, two images known as Bhādā and Bhādī and decorated with flowers and vermilion are substituted. In Burdwan clay figures are made to represent Śiva and Durgā, and a betel-nut and a cowry are placed before them; whilst in Bankura no figures are used at all. In Jalpaiguri twenty smaller tanks adorned with flowers and vermilion are dug round the central tank.

The tank is worshipped every morning in Baiśākh by girls of from eight to thirteen years. The worshippers are usually unmarried, but this is not a *sine quā non*. They first bathe and then worship with flowers, *tulsi*, *dūrbā* grass and paddy. A short verse is recited and a flower is thrown into the tank, which is daily filled with fresh water. This is repeated three times. The worshipper must not eat anything until the worship for the day has been performed. Should she be unable to fast on any day, a substitute who has duly fasted must take her place.

This ceremony must be performed for four successive years. On the last day of the last year the clay figures of Śiva and Durgā are replaced by golden images (a golden frog or fish is used in the cases in which the figures of Śiva and Durgā are not employed), and a *bel* twig of silver is placed in the middle of the tank. A fan, a towel, an earthen waterpot and a dish of rice are placed at each of the four corners. The family priest performs all the ceremonies which are observed in the consecration of a real tank. At the end of the *brata* the above-mentioned accessories together with as many cowries as would be required to fill the tank and pave its *ghāts* are given to Brāhmins.

The object of the Puṇya Pukur Brata are explained by the following verses which are a specimen of those used at the ceremony. In some cases girls use their own rhymes instead of adhering rigidly to the prescribed forms.

PUNYA PUKUR.

Punya pukur puṣpa mālā
Ke pūjere dupur belā?
Āmi sati guṇavati
Bhāyer bon bhāgyavati.
Habe putra marbe nā,
Prthibite dharbe nā;
Svāmīr kole putra dole.
Maraṇ hay yena Gangā jale.
Gangā jale śaṅkher dhvani,
Mare yena hai rāj rāṇi.
Ebār mare manusya haba,
Brāhmaṇ kule janma pāba,
Sitār mata sati haba,
Rāmer mata svāmī pāba,
Lakṣmaṇer mata debar pāba,
Daśarather mata śvaśur pāba,
Kauśalyār mata śāśuṇī pāba,
Girirājer mata bāp pāba,
Menakār mata mā pāba.
Durgār mata sohāgī haba,
Kārttik Gaṇeś bhāi pāba,
Kuberer dhan pāba,
Ābirer bar pāba.

TRANSLATION.

“Who is worshipping the tank with garlands of flowers at noon? It is I, chaste and virtuous, fortunate sister of a brother. May I have sons who will not die and (so many) that earth shall not contain them. May I die in the Ganges whilst my son rocks in my husband's bosom. The conch sounds on the Ganges; may I become a queen when I die. May I become a human being (again) after death and be born in the family of a Brāhmaṇ. May I be chaste like Sitā, may I have a husband like Rām, a brother-in-law like Lakṣmaṇ, a father-in-law like Daśarath, a mother-in-law like Kauśalyā, a father like Girirāj,¹ a mother like Menakā. May I be beloved like Durgā; may I have Kārttik and Gaṇeś as brothers; may I obtain the wealth of Kuber and the boon of Ābir.”

The Tuṣ Tuṣālu is observed in Baiśākh in the 24-Parganas. Elsewhere this ceremony is performed in Pauṣ. One hundred

Tuṣ Tuṣālu. and twenty balls are made of the husks of new paddy (*tuṣ*) mixed with cowdung, *dūrbhā* grass and mustard (*Sariṣā*) and radish (*mūlā*) flowers. Four of the balls are worshipped each morning with similar flowers. On the last day of the month six *burī* and six (126)

¹ Literally “king of mountains,” i.e., Himālaya, the husband of Menakā, father of Durgā and father-in-law of Śiva.

of these balls are placed in an earthen pot. Fire is set to them and the pot is floated on a tank. An equal number of cakes (but in Jessore 144 cakes) are made of ground rice boiled in sweetened milk and are eaten by the worshippers, who, as before, are young girls. This ceremony must also be observed for four years. The form described above is reported from Jessore, 24-Parganas and Midnapur. A miniature tank is not an indispensable adjunct in those districts. In Mymensingh, however, a miniature tank is always used, and the ceremony is similar to that of the Bel Pukur Brata described below, except that balls made of cowdung and chaff are substituted for the clay balls used at the Bel Pukur. The following is a specimen of the verses recited at the morning worship of the *tuṣ* balls in Midnapur. The translation is very rough, as the Bengali verses are to a large extent a jingle in which the meaning is sacrificed to the rhyme.

TUṢ TUṢĀLU.

Tuṣ tuṣālu tuṣkarṇi
 Sāge bhāte puṣkarṇi.
 Gāi bāchur sariṣār phul
 Āmrā pūji bāp māyer kul,
 Bāp māyer dhan nāri cāri,
 Svāmīr dhane adhikāri.
 Ghar karbo nagare,
 Marbo sāgare.
 Tuṣ tuṣālu māi, tuṣ tuṣālu bhāi,
 Tomār kalyaṇe āmi cha buri piṭhe khāi.
 Cha buri piṭhā Gāṅge bālī Gāṅg sināne yāi.

TRANSLATION.

"We worship our parents' families, chaff balls, the tank with rice and vegetables, the cow, the calf and the mustard flower. We are dependent on the wealth of our parents till we acquire a right to the wealth of our husbands. We will make our home in the town; we will die where the Ganges meets the sea. Chaff balls, you are our mother and our brother. By your blessing I eat six score cakes. Six score cakes like sand in the Ganges. I will go to bathe in the Ganges."

One of the few instances of miniature tank worship in Behar is found in the Baṭsābitrī, which is observed in Muzaffarpur in the month of Jyaiṣṭha. A tank is dug in the courtyard and a branch of the banyan tree is placed in it. It is then worshipped by married women with sweets, flowers, *āipun* (rice ground with turmeric) and vermillion, and prayers are offered that their husbands may be long-lived and like Śiva. There seems to be no corresponding observance in Bengal.

In Murshidabad an image of Ṣaṣṭhī is placed beneath a branch of the jack tree which is planted on the bank of a

[N.S.]

miniature tank for the Aranya Śaṣṭhī Pūjā on the 6th day of the moon in Jyaiṣṭha.

The only instance of tank worship in Āṣāṛh is the Karomāditya, which is observed in Mymensingh. On the last day of Āṣāṛh a tank is dug inside the house and filled with milk. Offerings (*naibedya*) are made and the husbands are worshipped.

The Jitūā Pūjā is observed in Jalpaiguri in Bhādra. It is performed in order to obtain anything which the worshipper particularly desires, and is not limited to any particular object. Small fishes are placed in the water of the miniature tank, and its banks are adorned with moss and grass.

Bhādra.

On the last day of the month the Bhādaī Pukur ceremony is performed in Rangpur by little girls who wish to unite themselves by a tie of friendship. Miniature tanks are dug and connected with one another. *Kalmī* (*Ipomoea reptans*) and *pānā* (*Salvinia cucullata*) shrubs and fishes are placed in the tanks whilst small wooden boats are floated on their surface, and *naibedya* or rice offerings are placed on the banks. There is music, and the relatives and friends of the children are feasted.

The chief tank ceremony of Āśvin, variously known as Dviti-bāman, Dvitiya-uṣā, Po-jeonta and Jimutbāhan, takes place on the 8th day of the dark half of the month, the day on which Dviti-bāman

Jimutbāhan.

or Jimutbāhan, the son of the Sun, in whose honour it is held, was born. Its object, when performed by barren women, is to obtain children, and, when performed by others, to secure longevity for their offspring. Failure to perform it brings still-born children, death of offspring and widowhood. It is only performed by married women. Its form varies somewhat in different parts of the province (it is only in vogue in Bengal and Orissa), but the miniature tank is always present. In Angul it is customary for the worshippers to perform a preliminary ceremony after bathing on the previous day, when the female kite and the female jackal are worshipped at the *ghāṭ* and food is only taken once. On the day of the *brata* itself they fast all day and go in the evening to the tank, which is made at cross roads. Above the tank is a bamboo roof covered with new cloth and hung with garlands. A cocoanut and a *tulsi* plant are placed in the tank, a bundle of sugarcane is put at its side, and around it twenty-one kinds of edible fruit collected by each worshipper are arranged in baskets. The ceremony is performed sometimes by a Brāhmaṇ widow and sometimes by one of the worshippers with rice, milk, turmeric and flowers, and the story of Dviti-bāman is recited. The fruit is then taken home. Part is given to the neighbours, and the rest is cooked, and, after a portion has been offered to Dviti-bāman, the female kite and the female jackal, eaten by the worshippers and their relatives.

Elsewhere a square tank is dug in the courtyard, and

is somewhat differently adorned. In Bonai fishes are placed in the water, and the kite and jackal are represented by clay figures on the banks, on which branches of *beḷ*, *mahuā* (*Bassia latifolia*) plantain, sugarcane and other trees are planted. In Talcher, cowries and turmeric are put into the tank besides the fish, and a betel-nut smeared with sandal and decorated with flowers—the symbol of the god—is placed on a miniature island in the middle.

The Gārusi Brata is performed in Mymensingh on the last day of Āśvin by married women who have lost their mothers-in-law. The tank is dug near the household *tulsī* plant, *pānā* is placed in it, and it is worshipped with flowers and *dūrbā* grass. A clay pig is sacrificed, and eight kinds of vegetables are first presented and then cooked and eaten.

The period comprising the month of Kārttik and the first eight days of Agrahāyaṇ is known as Yamāṣṭaka, when, on account of the unhealthiness of the season, the eight gates of the domain of the god of death are never closed. It is in this month, therefore, that Death is propitiated by young girls of seven years or less in the Yama Pukur or Kārttik Pukur Brata. The ceremony is observed throughout Bengal with the exception of the northern districts of Jalpaiguri and Darjeeling, although, as in the case of many of the *brata* described in this paper, it is gradually dying out in the towns with the spread of Western education. The forms vary considerably in detail, and in Bhagalpur, its north-western limit, the differences are so great as to call for a separate account.

In Bengal proper the tank is rectangular in shape, the longer sides running from north to south, and is usually dug close to the household *tulsī* plant, but in Tippera close to the plinth of the house. Various aquatic plants, such as *kalmī*, *śuśni* (*Mar-elia Quadrifoliata*), and *pānā*, one or more small fishes, and, in Birbhum, seven snails, are placed in the tank, which is refilled each morning. Paddy is sometimes sown or planted in the centre. In Rangpur seven *ghāṭs* are made and each is filled with turmeric, ginger, *tulsī* and flowers. Various shrubs such as *hiñcā* (*Enhydra fluctuans*), ginger, *tulsī* and turmeric are planted round the tank, and, in Burdwan, *rabi* seeds are sown. The corners are sometimes marked with *kacu* (*Colocasia antiquorum*), *kalā* (plantain), *mān* (*Alocasia indica*), and *halud* (*Curcuma Longa*), and sometimes with branches of the banyan tree. In Birbhum seven cowries are placed on the southern *ghāt*. In Tippera a small earthen plate of rice is placed near the tank. Clay figures are often put on the banks. These sometimes take the form of Yama and Yami. In Tippera his followers Yamaduta and Kaladuta are added. In Howrah they represent fishermen, dhobis and their wives, and women who collect aquatic plants. The idea here appears to be that these people, who are those who make the most frequent use of tanks, are appointed witnesses to testify to the due performance of the ceremony

before the god of death at the day of judgment. In Eastern Bengal clay figures of two crows and two kites are posted at the corners, and in some districts vultures or other birds are made to hover over the tank on sticks. The clay figures are brought daily in an earthen pot and arranged for the day's worship and are put back again when it is over. The worship is usually performed by the girl herself, but in Rangpur the family priest recites the *mantras* and worships fourteen Yama. Elsewhere Yama is worshipped with flowers, paddy, *dūrbā* grass, and vermilion. In Tippera the girl dips the *dūrbā* grass in water and touches each of the clay figures, calling on them to drink. After the ceremony, when she has put away the clay figures, she sits down with a few blades of *dūrbā* grass in her hand and listens to the account of the Yama Pukur which is given by an elderly woman of the family. The story is to the effect that there was once a man whose wife was devoted to the worship of Yama. Her mother-in-law was displeased because she paid so much attention to Yama, and scoffed at her. After a time the mother-in-law died during her son's absence. On his return he performed the *Śrāddha* but his mother's soul would not accept it, as Yama was tormenting her with thirst because she had scoffed at her daughter-in-law for worshipping him. The son asked his mother's soul how the god could be appeased, and was told to get his wife to perform the Yama Pukur ceremony with great pomp. She also appeared in a dream to her daughter-in-law and begged her to have mercy on her. The ceremony was accordingly performed and the soul found rest.¹

The Yama Pukur Brata is performed daily from the last day of *Āśvin* to the last day of *Kārttik*. It must be finished before sunrise. It has to be performed for four years. The effects are to secure for the worshipper, her parents, her future husband's parents and her ancestors, blessings in this world and relief from torment after death. Speedy marriage, a good husband, and chastity, are also prayed for. The following is a specimen of the *mantras* used in Midnapur :—

YAMA PUKUR.

Suśni kalmī laha laha kare,
Rājār beṭā pakṣi māre,
Māruk pakṣi śukāk bil,

¹ Such is the story generally current. Other accounts of the origin of the Yama Pukur are—(i) A wife was so attentive to her husband that she had no time to attend to religious ceremonies. On her death she was greatly terrified, expecting to be condemned for her neglect. She accordingly came down to earth and performed the Yama Pukur *brata*, which so pleased Yama that he pardoned her and gave rest to her soul. (ii) A certain queen had done good works during her lifetime, and on her death Yama promised to grant her any boon she might ask. She requested that she might be restored to life, and her prayer was granted on condition that she performed the Yama Pukur ceremony.

Sonār kāmṭār rupār khil,
 Kāgā bagā sākṣi thāk,
 Yama pukurṭi pūji;
 Yamer māsi sākṣi thāk,
 Yama pukurṭi pūji;
 Yamer khuṛi sākṣi thāk,
 Yama pukurṭi pūji;
 Yamer jethāi sākṣi thāk,
 Yama pukurṭi pūji.

TRANSLATION.

"The *susni* and the *kalmā* plants are waving. The Rāja's son is killing birds. He kills the bird. The tank is dried (to recover the bird). A golden box with silver hinges (is found). Crow and crane bear witness that I am worshipping the Yama Pukur. Let Yama's maternal aunt bear witness that I am worshipping the Yama Pukur. Let Yama's paternal aunt and grand-aunt bear witness that I am worshipping the Yama Pukur."

The miniature tank, though usual, is not essential in Orissa, where the ceremony is known as Kārttik Pukur. Girls who find the form described above too difficult offer flowers, plantains and various shrubs to Rādhā Kṛṣṇa after performing their ablutions, and on the last day a plantain trunk is floated in the water with lighted earthen lamps upon it.

In Bhagalpur the Kārttik Pukur Brata is performed on the same days as the Yama Pukur in Bengal, though on account of the difference in the calendar it falls there from 15th Kārttik to 15th Agrahāyaṇ inclusive. It is performed by brides during the first year of their married life with the object of securing the bridegrooms from death. A miniature tank is always employed among high-caste Hindus, but the village tank is often used by others. The former is in this case clearly substituted for the larger tank by those who do not appear in public. The miniature tank is dug in the courtyard. Five vermilion marks are made on each bank and twelve varieties of grain are sown there. A pole is planted in the centre, and a boat with rudder and sail is floated on the surface. The girl who is performing the ceremony may not bathe during the entire period of thirty days. The tank is worshipped early every morning after the necessary ablutions have been performed, and no food or drink may be touched until the ceremony for the day has been completed. Old paddy is offered during the first fifteen days, and new paddy for the remainder of the period. The paddy is kept in two *kothis* made of cowdung, one for the old and the other for the new paddy. An oblong cowdung cake is made on each of the first fifteen days, and a round cake on each of the other days, and all are arranged at the side of the tank in a line which is called *Rākhi Catti*.

After the daily offering of paddy has been made, the chief

woman of the house, who supervises the ceremony throughout, tells the story of the Kārttik Pukur:—There were once five girls who were great friends. One day one of them, who was a Goālin, found the others, who belonged to the higher castes, performing the Kārttik Pukur Brata. In answer to her enquiries they told her that by performing the ceremony they could obtain anything they desired from the guardian of the tank, and, in particular, that they would not be left widows; but that she could not imitate them, as, being only a Goālin, she would not have the endurance to abstain from bathing and eating *chāli* and to perform the various rites with sufficient strictness. Paying no heed to their warning, the Goālin joined enthusiastically in their worship, but on the fifteenth day she secretly bathed and ate *chāli*. The god of the tank was very angry and tormented her by nightly visits. He came on a black buffalo, tore and dirtied her clothes and disarranged her hair. In the morning her husband's sister, seeing the condition of her clothes, accused her of an intrigue and at last informed her husband. Her brothers then took her to task, and, on being told the story, decided to watch secretly in order to test its truth. At midnight they found themselves face to face with the god, who explained that their sister was suffering a just punishment for her sins and that they could only be expiated by a rigid performance of the ceremony from the beginning. This was done. Shortly before the end of the month's worship, the Goālin wished to give a feast to her brothers and sisters, but at the last moment found that she had no fuel. She sent her servant to get some, and, whilst she was absent, cut the woman's child to pieces in order to test the powers of the god. The servant, returning with the fuel, met a line of ants, and strewed fresh *dūrbā* grass and sugar for them. Gratified by this attention they requested her to ask a favour of them. On her replying that she desired nothing, they told her that her mistress had killed her child, and said that she would find it alive. The miracle was performed, and the penitent Goālin never again doubted the power of the gods.

The worship for the day is then completed by the pouring of four libations of water brought from a river or tank by a woman whose husband is alive, in the name of the cow, of the mother, of the mother-in-law and of the worshipper herself in that order.

On the fifteenth day some paddy is spread on the banks of the tank. When dry, the girl measures out thirty-two *pailās*—sixteen in the ordinary manner and sixteen with the *pailā* inverted. The paddy is again spread out and no attempt is made to scare the birds away.

On the last day of the *brata* at the end of the morning's observances, a she-calf is placed across the tank with its fore-feet and hind-feet on opposite banks, and the worshipper is made to pass under it, assisted by her brother, or, in his absence, by her brother-in-law.

What remains of the paddy is then collected and ground, and sixteen large and sixteen small rice cakes (*pithā*) are made by the worshipper, who, in all these processes, may use the right hand only. The girl fasts the whole of the last day, and at dead of night eats the two ends of each of the large rice cakes. If the voice of any living thing reaches her ears whilst she is eating, she must at once stop and may not swallow any food that may be in her mouth. The remainder of the large rice cakes is then distributed among her relatives and neighbours. Four of the smaller rice cakes are placed on the roof as the share of the crows; four underneath a *tulsi* plant as the share of Viṣṇu; four at the foot of a plantain tree as the share of her mother; and the remaining four at the side of the tank for her mother-in-law.

After the conclusion of all the ceremonies, the cowdung *koṭhi* and cakes are destroyed; marks of rice paste are made on the surface of the tank, and it is then filled up.

In Angul a miniature tank is made at the foot of the household *tulsi* plant on the fourth day of the light fortnight of

Nāgālī Caturthī. Kārttik. It is filled with milk, water, aquatic plants, and plantain shoots, whilst sugarcane and paddy are planted on its banks. Figures of the snake godlings, Nāg and Nāgini, made of rice paste, are placed beside it, near a piece of earth taken from an ant hill, their favourite haunt. They are worshipped with rice, milk, sugar and flowers, usually by girls and women, though men occasionally join them. The observance of this Nāgālī Caturthī is connected with a Purāṇik story about a woman who recovered her eyesight by worshipping Nāg and Nāgini. The worshippers apply some of the milk and water, with which the tank is filled, to their eyes, with the object of securing themselves against eye diseases of various kinds.

The Chaṭ Barat is observed throughout Behar and also in part of Chota Nagpur on the 20th, 21st and 22nd Kārttik, and again, though not universally, on the corresponding days of Caitra. High-caste women sometimes substitute a miniature tank for the river or tank at which the ceremony is usually performed. The rites are the same in either case.

The worshippers, who are either men or married women, fast on 20th but take a little food at night. On the evening of the 21st they go, after fasting all day, to a tank or river, dip themselves and offer *arghya* by pouring milk and water over a basket full of cakes, cocoanuts, plantains and other fruits. They may eat part of the contents on coming out of the water, but the same ceremony must be performed again before sunrise, facing eastwards. The deity worshipped is the sun. In Chota Nagpur, where this *brata* is also performed on the last Sundays of Baisākhi and Agrahāyan, flowers and eatables are at the same time thrown into the tank in honour of Baruṇ—the chief of the water gods. In Shahabad, clay figures of Chaṭ and Chaṭi are

worshipped at a well or tank during the ceremony, and the contents of the basket are afterwards distributed amongst the neighbours and relations of the worshippers.

The Bel Pukur is worshipped from the last day of Kārttik to the end of Agrahāyaṇ for four years. It is not as widely observed as the Puṇya Pukur Brata, which it closely resembles, the only marked difference being that clay

balls are substituted for the cowries or *bel* branches at the corners of the tank, and is not found west of Jessore. In addition to the prayers for chastity and a good husband, curses are in some places called down upon the prospective *Satinī* or co-wife. The Sāmjuti Brata takes the place of the Bel Pukur in the western districts and is specially directed against the co-wife. As its name implies, it takes place in the evening. In several districts no tank is used, but figures of gods and heroes, of the temples of Mahādeva and Bhagavati, of the sun and moon, of the Jamunā and Ganges or of household utensils, are invariably drawn on the ground with rice paste and worshipped with flowers and *dūrbā* grass.

The following are among the verses recited at the Bel Pukur and Sāmjuti :—

BEL PUKUR PRĀRTHANĀ.

Rāmer mata pati pāi,
Sītār mata satī hai,
Var yena sukhī hay,
Satinī yena mare yāy,
Satinir hok nāk kār kātā,
Āmār hok sonār pāner bātā,
Satin habe svāmīr do,
Āmi haba svāmīr so,
Satinir pathe parbe kāmṭā,
Āmār habe sonār beṭā,
Satin habe āmār dāsī,
Āmi karbo hāṁsi khusi,
Svāmīr haba sohāgini,
Āmstā kuṛ jhāmṭibe satini.

SĀMJUTI.

Sāmjai pūjā sāmjuti,
Bārā ghare tera bātī,
Lakṣmīr ghare ghaṭṭi.
Ghaṭṭi (tule mālām car) thuye māgi bar,
Āmār bāp bhāi dhan daulate lakṣmīśvar.
Hut birāli hut khā,
Bhātār put thuye satin khā.
Guyā gāch begun gāch guṭi dhare mājā,
Bhāi hayechen dillīśvar bāp hayechen rājā,

Akāśe yataguli nakṣatra tataguli bhāi,
 Śiva Vasu pūjā kare daure ghare yā.
 Rājāder beṭi dolāy āsen dolāy yān,
 Candan kaṣṭhe vendhe khān.
 Bāp rājā bhāi pātra,
 Svāmīr mātḥāy rāj chatra.
 Hātā hātā hātā,
 Khāy satiner mātḥā.
 Beri beri beri,
 Satin beṭi ceri.
 Khorā khorā khorā,
 Satinke laye yāy tin minṣe gorā.
 Bāms bāms bāms,
 Satiner hay yena yakṣmā kās.

TRANSLATION.

Prayer at the Bel Puṣur.

"May I have a husband like Rām; may I be chaste like Sitā, and may my husband be happy. May my co-wife die. May her nose and ears be slit, but may I get a golden bowl. May my husband hate her, but may I be his best beloved. May her path be strewn with thorns, but may I have a golden son. May she be my slave whilst I pass my days in laughter. May I be my husband's darling, but may my co-wife spend her time in sweeping the dust bin."

"For Sām̐juti, the evening pūjā, place thirteen lamps in twelve rooms and a pitcher in Lakṣmī's room. Placing the pitcher in Lakṣmī's room I will ask this boon:—May my father and brother be lords of wealth. May the wild cat eat the offering, and spare my husband and son, but eat my co-wife. The betel palm and the egg plant bear fruit. My brother has become lord of Delhi and my father has become king. I have as many brothers as there are stars in heaven. I run home after worshipping Śiva and the Vasu. The daughter of kings comes and goes in a palanquin and uses sandalwood for cooking. My father is king, my brother minister, and the royal umbrella is spread over my husband's head. May the co-wife's head be eaten, may the cursed co-wife be a slave. May three white men take her away and may she die of consumption."

In Shahabad, where the Bel Pukur is unknown, similar clay balls are used in the Agha-Piṇḍi Pūjā. Other Agrahāyaṇ Brata. They are placed at the front door of the house and worshipped with songs and fruit by girls, who fast until after the performance of the ceremony.

In Jalpaiguri the Nāṭai Pūjā is observed by every unmarried Hindu girl on each Sunday in Agrahāyaṇ. Nāṭai Pūjā. An image of Nāṭai is made from a plantain

stem about six inches in length and placed beside the miniature tank, whose banks are daubed with rice paste and adorned with marigolds and mustard and *kalmī* flowers. The tongue, which protrudes like that of Kālī, is made of the pointed end of a *karabī* leaf (*Nerium odorum*), and the arms of *kacu* stems. The tongue and the eyes are reddened with vermilion. Rice cakes are offered to the goddess at dusk. Half are made with salt and half without. At night they are eaten before a lamp by the unmarried girls, and those who get the salted cakes have the best chance of marriage in the course of the year. The main object of the ceremony is to obtain a desirable bridegroom, but it is also efficacious in securing the recovery of lost treasure and reunion with absent friends.

In Chittagong, where the Bel Pukur is also unknown, maidens collect small plants of paddy and *kalmī* and worship the sun each Sunday in Agrahāyaṇ with prayers for an ideal husband.

In Khulna a miniature tank is filled with milk and water. A bundle of paddy set with rye flowers is planted by its side, and Gaurī, the goddess of plenty, is worshipped with offerings of *Pāṣāṇ* or hard cakes. These are subsequently eaten and from them the ceremony derives its name of *Pāṣāṇ Caturdaśī*.

This and the Agrahāyaṇ *Ṣaṣṭhī* ceremony, which only differs from it in that *Ṣaṣṭhī*, the guardian deity of children, is worshipped instead of Gaurī, are probably in their origin harvest festivals.

The *Paṭai Pūjā* is performed in Jalpaiguri by matrons, with the object of averting sterility, or a tendency to miscarriage or to bear still-born children, or harm to children already born. It

closely resembles the *Nāṭai Pūjā* but in this case the image is made of *binnā* (a kind of straw), and is adorned with mustard flowers and marigolds. The ceremony is performed in the evening. The worshippers fast all day, and, after the completion of the *pūjā*, partake of the cakes cooked in milk and sugar which have been offered to the deity.

The Dhanya *Pūrṇimā Brata* is observed in Noakhali on the night of the *Pauṣ* full moon. A plantain and a bamboo are planted beside a miniature tank and the moon is worshipped with flowers and *dūrbhā* grass by a priest.

The *Māgh Maṇḍal Brata* continues for the whole month and is concluded on the last day by a *Brāhmaṇ*.

Māgh. It is observed only in Central and Eastern Bengal. A full-sized tank is sometimes used, but a miniature tank is more commonly employed. Three series of concentric circles representing the sun and moon with the earth between them are drawn on the ground in the courtyard. After bathing, unmarried girls recite *mantras* to the sun and scatter flowers over them. A representation of the phallic emblem of Śiva is made of a plantain sheath and floated on the tank. Prayers are offered for an ideal husband, and are sometimes combined with curses on the co-wife. The following are among the verses recited. :—

MĀGH MAṆḌAL BRATA.

Sūryya āschen dhalā ghorāy caṛe,
 Āsben sūryya basben khāṭe,
 Nāiben thuiben Gaṅgār ghāṭe,
 Culgāchi mele diben cāmpār dāle,
 Kāpar khāni mele diben baṛa gharer cāle,
 Khāiben laiben subarner thāle,
 Bhājā khāiben rikābi rikābi,
 Bhālā tarkāri khāiben koṭarā koṭarā,
 Ambal khāiben khādā khādā,
 etc., etc., etc., dadhi kṣir miṣṭānna, etc., etc.
 Uṭha uṭha sūryyare jhikimiki diyā,
 Nā uṭhite pāri āmrā iyaler lāgiyā.
 Iyaler pañcaguṭi kirāṇe thuiyā,
 Sūryya uṭhben kon khān diyā ?
 Bāmaṇ baṛir ghāṭā diyā.
 Bāmaṇga meyerā baṛa seyān,
 Paitā yogāy behān behān.
 Uṭha sūryya uday diyā,
 Nabin paitā galāy diyā.
 Rāṅgā lāṭhi hāte kare,
 Simul gāmchā kāndhe kare,
 Sūryya uṭhben kon khān diyā ?
 Baṭ āsvatther āgā diyā.
 Baṭ āsvattha melana pāt;
 Sūryya ṭhākur Jagannāth.
 Āmer baul āsere bāri bāri,
 Sūryyer baure dei āmrā pārsi sārī.
 Āmer baul āsere bāri bāri,
 Sūryyer baure dei āmrā Bānārasi sārī.
 etc., etc., etc., etc.
 Āmer baul āsere locā locā,
 Sūryyere dei āmrā cikkan kocā.
 etc., etc., etc., etc.
 Kāni bagi bagi tuita āmār sai,
 Māgh maṇḍaler brata karte ghāṭ pāinu kai ?
 Āche āche la ghāṭ—Bāmaṇ bāṛir ghāṭ,
 Rāt pohāle bāmaṇrā paitā māje tāta.
 Paitār kaclāinā jal pukurete bhāse,
 Tā dekhe māilāni khaṭ khaṭāye hāse.
 Hāsis kene la māilāni tuita āmār sai,
 Māgh Maṇḍaler brata karte ghāṭ pāinu kai ?
 Āche āche la ghāṭ—Baidya bāṛir ghāṭ,
 Rāt pohāle Baidyerā pūjā kare tāta,
 Tāhār sothlāinā jal pukure, etc., etc.

TRANSLATION.

"The Sun is coming riding on a white horse. He will sit
 on a *cārpāt* and bathe and rise at the Ganges *ghāṭ*. He will spread

his hair on a *cāmpā* branch (*Michelia champaca*) and will spread his clothes on the large house. He will eat from a golden plate, will eat fried food dish after dish, and good curry, cup after cup, and quantities of acid things, curds, sweetmeats, etc., etc.

O Sun, rise up with thy brilliant rays. We cannot get up because of the mist. The five strata of the mist keep back the rays. Where will the Sun rise? By the *ghāt* of the Brāhmaṇ's house. The Brāhmaṇ-women are very clever and offer sacred thread morning after morning.

O Sun, rise up, put a new thread round thy neck, take a red stick in thy hand and a cloth red like the flower of the cotton tree on thy shoulder. Where will the Sun rise? He will rise over the banyan and the pipal. O banyan and pipal, expand your leaves. The Sun is god and lord of the world; mango blossoms appear in every house; we give the Sun's wife a persian *sāri*. Mango blossoms appear in every house; we give the Sun's wife a benares *sāri*, etc., etc. Mango blossoms come in profusion; we give the Sun a *dhoti* of flowered muslin, etc., etc., etc.

O blind Bagi, thou art my companion. Where shall we find a *ghāt* for the Māgh Maṇḍal Brata? There is a *ghāt*—the *ghāt* of the Brāhmaṇ's house—where the Brāhmaṇs wash their sacred threads at daybreak. The water, purified by the threads, rises to the surface of the tank. Seeing it Māilānī laughs aloud. O Māilānī, why dost thou laugh? Thou art my companion. Where shall we find a *ghāt* for the Māgh Maṇḍal Brata? There is a *ghāt*—the *ghāt* of the Baidya's house. The Baidyas worship there at dawn. The water used in their worship rises to the surface of the tank," etc. etc. (*mutatis mutandis* for other castes).

The Māgh Snān Brata is similar to that last described and is also observed in Eastern Bengal. The Earth, Sun and Moon are, however, only worshipped on the last day. On the other days the tank is worshipped with flowers, plums and *dūrbā* grass, and an altar, built round a small plantain tree beside the tank, is adorned with similar offerings.

The Pūrṇamāsi Brata takes place in Mymensingh on the day of the Māgh full moon. A plum and a *binmā* plant are placed beside a miniature tank and worshipped with rice and eatables by women for the welfare of their children. Pictures are made of rice paste on the ground near the tank.

One of the most curious forms of tank worship is the Pācāi Niṣṭār which takes place in Darbhanga in Caitra. It is performed by married girls only. The tank is dug in the courtyard at dawn by the brother of the worshipper or, in his absence,

Caitra
Pācāi Niṣṭār. by her husband's brother. Bushes are placed round it and a pole similar to those in full-sized tanks is planted in the centre. After fasting for twenty-four hours, the girl takes her seat facing eastwards. Between her and the tank, under a canopy (which with the centre pole or *jāth* is kept from year to year), is a figure of Gaurī, made of turmeric. In front of it is placed a plantain leaf containing an offering of *arwā* rice, plantains and sugar.

Beside the girl are three earthen pots. Two stand on plantain leaves and contain *cuṛā* and *sāttu*. In the third is an earthen lamp. Behind her are placed a clay image of Gauri and an empty *hōndi* which represents the co-wife. The girl first worships the yellow Gauri, and then, without turning, worships the clay idol with her left hand, to show her contempt for the co-wife. The worship is directed by elder women, who are invited to see it and are given presents on its conclusion. The ceremony is repeated for five years. The number of accessories of each kind increases with the number of years, so that in the last year five times as many articles are required as at first. In the last year the girl fasts all day after the ceremony, and at sunset enters the house and feeds a Brāhman virgin, to whom she also gives her clothes. The two girls and the worshipper's brother keep a vigil throughout the night. In the centre of the room is a coloured square of *solā* (*Eschynomene Apera*) on a *pirhā* or plank. It is covered with a piece of cloth, and from each corner hangs a *solā* ball. All three have to get up three times during the night and hold up the *pirhā* whilst the worshipper asks, "Has Niṣṭar been performed?" to which the others answer, "Yes." In the morning the *solā* square and the images of Gauri are thrown into the tank, and on the worshipper's return to her home a feast is given by her husband.

Basanta Rāy is worshipped in Mymensingh in Caitra and Baiśākh. The tank is dug three days before the ceremony and plantain trees are planted on three sides, that nearest the house being left open. A bride and bridegroom are made of plantain stalks and dressed in red cloth. They are married, and the women sing whilst the bride is turned seven times round her husband. Next morning a goat is sacrificed to Bhairab at the riverside, and the mock bride and bridegroom are thrown into the water.

Besides the above there are several forms of tank worship which are not limited to any particular month. At the Punarbibāha the husband and wife utter purifying *mantras* beside a miniature tank at the time of the first menstrual flow.

The Bārī Bibāha is the name given to the ceremony in which, in Bengal, the bride and the bridegroom bathe in a similar tank on the day after marriage. An analogy is to be found in the worship of the Ganges by newly-married couples in Behar. When a visit to the Ganges is impossible, they may make their offerings at some other river, or, failing that, at a tank. But until the ceremony has been performed, they may neither cross a river nor touch its water.

For the Dusulī Pūjā a miniature tank is dug at twilight and pictures are made with rice paste on its banks. It is worshipped with 30 betel boxes with some particular worldly object.

Dariā Pir is worshipped by pregnant women for safe delivery. About a seer of rice must be begged, fried and presented to the tank. Two images of a male and female are laid together on a

[N.S.]

plantain leaf beside it. Fruit is presented by being laid on one side of the tank. It is then moved to the other side and eaten, and the images are thrown into the water.

Lastly there is the Subacanāi Pūjā. In Jalpaiguri a miniature tank is dug with twenty-one smaller tanks round it. The banks of all are painted with vermilion and *ālīpanā* (rice paste), and a duck, made of powdered rice, is placed near the central tank. Offerings of *pān* (*Piper betle*), betel-nuts, vermilion, mustard-oil and plantains are placed in a cane basket. The tanks are worshipped at midday by mothers for the welfare of their children because the goddess Subaanāi is believed to have the power of restoring life to the dead. The story, which is recited by the oldest woman present, is that a certain Rājā threatened to put a Brāhman's son to death for killing his ducks. The boy's mother appealed to Subacanāi, the ducks were brought to life and the child was saved.

A ceremony of the same name is performed in Purnea in the second or light half of any month, but it bears no resemblance to that just described. It is performed by unmarried girls only, with the object of attaining wealth, happiness and good husbands, and lasts for a fortnight. Four tanks are dug and filled with milk, water, *dūrbā* grass and vermilion. They are worshipped with flowers, rice, plantains and sandal-wood, whilst rhymed *mantras* are recited.

It is not easy to trace any idea which is common to all the tank ceremonies. The objects of several of them are identical, and it may be that further enquiry will show that they have a common origin. Others, however, differ widely, and it seems to be impossible at present to arrive at any very definite conclusion as to the reason for the introduction of the tank, which in some cases does not seem to be an essential at all.

62. *Salīma Sultan Begam.*—By H. BEVERIDGE.

This lady was one of Akbar's wives and was probably the cleverest and most attractive member of his seraglio. She was both intellectual and tactful, and had much influence over her husband and his son Jahangir. She had also a poetic vein, and one of her verses used to be famous. She was the niece of Gulbadan Begam, the authoress of the *Memoirs of Humayun*, and accompanied her on her pilgrimage and shared with her the dangers of a shipwreck in the Red Sea and the subsequent detention at Aden. By birth she was a cousin of Akbar, her mother being Gulrukh Begam, a sister of Gulbadan Begam and half-sister of Humayun the son of Babar and father of Akbar. Her father was Mirzā Nūru-din Muhammad Naqshbandi, who was the son of Mirzā Alāuddin and belonged to a family of saints. Of Nūru-d-din we only know that he was Governor of Qanauj, and that he instigated Hindāl to rebel against his brother Humayun.

Salima was a widow when Akbar married her in 1561, her first husband having been the great Bairām Khān, the real restorer of the Moghul Empire. Humayun had promised Bairām that he would give Salima in marriage to him as soon as India was conquered. When this was accomplished in Akbar's reign, all the ladies who had been left in Kabul came to India, and, in the end of 1557 or beginning of 1558, the marriage of Bairām and Salima was celebrated with great pomp in the city of Jālandhar in the Punjab. About three years afterwards Bairām fell by the hand of an Afghan assassin, and subsequently Salima became the wife of Akbar. The exact date of the marriage does not seem to be known, but if Salima accompanied Bairām to Guzrat she probably did not return to Agra till the middle of 969, February 1562, when her stepson Abdur-Rahīm (afterwards the famous Khān-Khānān) was brought to Akbar from Ahmedabad. The marriage therefore may have taken place then, though Blochmann puts it into 968. Salima had no children by either of her husbands, but she seems to have attached herself especially to Prince Salim (Jahangir), and when that foolish and wicked man quarrelled with his father, Salima was deputed to Allahabad to bring him to a sense of his misconduct. She went there and was received with great respect by Jahangir who marched out two days' journey to meet her. She induced him to return with her, and she brought about a reconciliation between him and his father.

According to Jahangir's *Memoirs* Salima died at the age of sixty in December 1611. This statement of her age has always been a stumbling-block to me, for if it is correct Salima can only have been about five years of age when she was married to Bairām, and she must have been almost an infant when Humayun promised her to Bairām as a reward for the conquest of India. I was pleased, therefore, to find a note at p. 72a of B.M. M.S. on 171, Rieu I, 257, which stated that the writer had ascertained

that Salima died at the age of 76. She was born, he states, on 4 Shawwāl 945, 23 February 1539, and consequently about four years before Akbar (he was born 15th October 1542, so that she was his senior by about three years and seven months), and the chronogram of her birth was *khūsh-hāl* (Felix, and equal in *abjad* to 945). Her mother Gulruk^h died four months after her birth. The note is in the handwriting of the copyist Mirzā Muhammad, son of Rustum, known as Mūtamid *Khān* and son of Qubād known as Dīanat *Khān*, and so was written in 1148, 1735. But this copyist was not merely a scribe. He was also the author of a book of dates called the *Tārīkh* Muḥammadi, Rieu III, 895a, which was written in 1124, 1712. The statement that Salima died at the age of 76 is also given there, p. 140.

63. *Notes on the Pollination of Flowers in India. Note No. 1—The pollination of Thunbergia grandiflora, Roxb., in Calcutta.—By I. H. BURKILL.*

A vigorous white-flowered plant of *Thunbergia grandiflora* grows over the porch of the house in Calcutta in which I live; and it is upon it that I have made my observations. It flowers from May to December profusely; but it has only once to my knowledge set any fruit—a single capsule,—although on one occasion I pollinated some half dozen flowers with the pollen of fresh flowers (both of white and mauve races) brought from Shibpur.

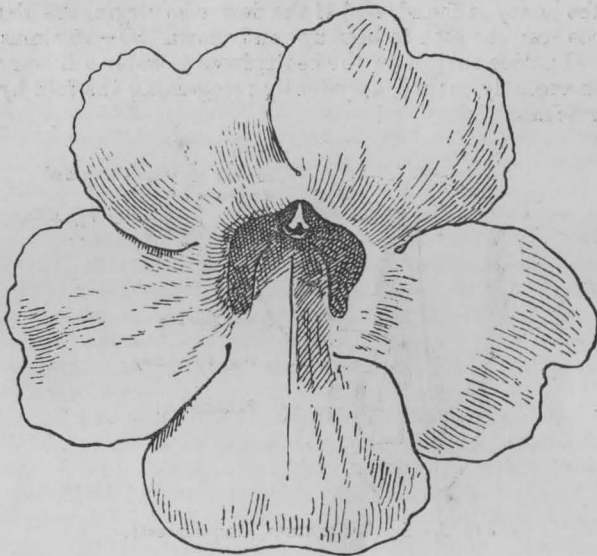


FIG. 1.—Flower of *Thunbergia grandiflora*, seen from in front and a little above. Nat. size.

The flowers of *Thunbergia grandiflora* in the hot weather and at least through August open in the night between 2-30 and 3-30 A.M. (local time); but as the cold weather comes on, they delay opening until towards or after dawn. In the hot weather they fall about 4 P.M., but in the cold weather they often do not fall until long after dark or on the next morning. They are obviously adapted for fertilisation by big bees such as *Xylocopa*, some of which are crepuscular in habit, and as Bingham¹ remarks (upon *Xylocopa rufescens*, a native of Sikkim, whence, with Assam, this white *Thunbergia grandiflora* comes) “on fine moonlight nights the

¹ In Blanford's *Fauna of British India*, Hymenoptera, Vol. I. (London, 1897), p. 534.

loud buzzing can be heard all night long." I have never so far seen or heard any crepuscular bee in Calcutta.

With the dawn in Calcutta, *Xylocopa latipes* and, generally a little after it, *X. æstuanus*, come to the flowers of the plant and visit diligently. If in August one watches at 5-30 A.M., these bees may be seen to arrive before the sun is up, and to commence work. They are still at work at 3 or 4 o'clock in the afternoon. When *Xylocopa latipes* visits a virgin flower, the visit lasts 8-10 seconds; if the flower is not virgin it lasts only 2-3 seconds. I find that it takes the bee 1-1½ seconds to find the honey, not that it does not know how to get at it, but that it has to thrust its proboscis in by such a crooked path, groping for the honey with the end of it. When the honey is found, and if the flower be virgin, the abdomen of the bee can be seen to beat up and down 20-25 times as it drinks. I notice that often the bee refuses to enter a flower which had been recently sucked, apparently recognising the fact by some mark or scent.

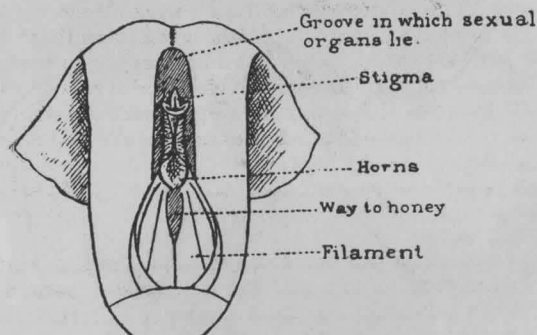


FIG. 2.—Roof of antrum, diagrammatic.

The bees, when they leave the flowers, are more or less abundantly dusted on the head and thorax with pollen; and invariably they leave some of this pollen upon the lower lobe of the stigma of the next flower which they visit. The flower itself seems to have no scent, but there is a faint scent emanating from the bracts or calyx outside, where there is a second (extra-floral) nectary visited by ants, and an occasional fly.

On the day before the flower will be open, and about noon, the two large bracts, which have enclosed the bud up till now, part; and thereupon this extra-floral nectary begins to secrete. There is no secretion at this time from the inner floral nectary, nor will there be until after midnight when the flower is preparing to open. The bracts themselves are covered with slimy glands; and ants suck them as well as the extra-floral nectary. Secretion continues at the extra-floral nectary after the fading of the flower; it only persists on the internal nectary so long as the flower lasts.

Xylocopa latipes is undoubtedly a most suitable visitor; its

large body fits the corolla tube exactly, and it can reach the honey with just that amount of difficulty which is necessary for the shaking out of the pollen onto its back.

This is the structure of the flower. The flower is altogether 6—7 cm. across and about the same in height; the honey lies about 4 cm. from the mouth. The antrum into which the bee enters is 2.0—2.5 cm. across and 1.5—2.0 cm. high from the ridge which runs along the middle of the floor to the roof. The stigma and the four stamens lie under the roof of the antrum so as to touch the back of the visiting *Xylocopa*. The stigma projects just beyond the anthers. The anthers are provided at their bases with rigid horn-like hooks and all along their margins with a fringe of long hairs; the hooks catch on the insect and cause it to shake a shower of pollen down onto its back from out of the long brushes of hairs which hold it. These horns have their tips one whole centimetre behind the edge of the lower lip of the stigma; the insect, therefore, touches the stigma at an appreciable interval before, on touching these horns, it shakes down the shower of pollen onto its back. The insect does not touch the anthers themselves as these lie in a groove. The filaments broaden to their bases, and the upper pair are interlocked at the base by a tooth and groove, making a direct road to the honey impossible. The honey chamber behind their insertion is 7—8 mm. in height and transverse diameter, and is 8—9 mm. long. The ovary stands in the middle of it, and the style passes above and between the bases of the upper pair of stamens to carry the stigma, as stated, to a position above the visiting bee's back. The nectary surrounds the ovary but is most developed below.

When I first examined the flower it seemed to me just possible that the honey could be reached by a proboscis passed between and below the lower stamens, but I soon saw that that was impossible, and after a little watching I was able, by means of small windows cut in the sides of flowers, to observe how the tongue of *X. latipes* reaches the honey. The bee settles on the floor of the

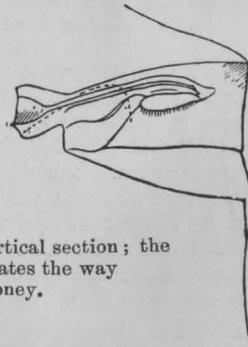


FIG. 3.—Flower in vertical section; the dotted line indicates the way to the honey.

antrum and pushes its way along it, touching first the stigma and then catching against the hooks of the anthers, and with its legs

in the effort bulging out the sides of the antrum so as to bring the roof a trifle lower; it passes its tongue between the bowed upper filaments which are only 3 mm. apart, with the style between them, passes it round to one side of the style, the space being only just big enough for it (1 mm. across) and so into the honey chamber. As it enters the chamber above, and most of the honey is below, the tongue has again to pass round the style to reach it. The total length of the honey chamber from the point where the tongue enters, to the place where the honey collects, is 10—11 mm. A tongue length of 16—19 mm. is necessary to drain the flower.

Creeping insects very rarely enter the flower, and never seem to find the honey chamber.

Visitors in Calcutta—

HYMENOPTERA ACULETA. Apidæ. (1) *Xylocopa latipes*, Fabr., sucking honey, July, August, September, October, November. (2) *X. æstuans*, Lepel., sucking honey, August, September. (3) *Apis florea*, Fabr., collecting pollen, flying into the open antrum and settling on the anthers, leaving the flower by dropping onto the floor of the antrum, August, September, October, November. (4) *Apis dorsata*, Fabr. once an individual persistently trying to reach honey, hanging under the stamens, November. THYSANOPTERA. (5) *Thrips* sp. November.

*Visitors to the extra-floral nectaries—*Several species of ants.

I have seen this plant in the Assam forests, where it fruits fairly abundantly; but I have not had any opportunities of watching it for insect visitors. Large black ants there patrol the inflorescences feeding at the extra-floral nectaries, and at the floral nectaries just after the fall in the corolla. They do not interfere with the *Mylabris* beetles which devour the corollas from inside.

64. *Notes on the Pollination of Flowers in India.* Note No. 2—*The pollination of Corchorus in Bengal and Assam.*—By I. H. BURKILL.

Emile Lefrance (Ramie and jute in the United States, Washington, 1873, p. 16) says that "flies and butterflies keep away from the jute fields especially at the blossoming period. The peculiar odour of the flower and the bitter exudation of the leaves seem to be strongly repulsive to them, if not poisonous."

I find in India no support for this statement. Jute is a crop of districts much submerged during the rains, where conditions limit the insect-fauna in certain directions; but whenever there are insects on the wing, jute flowers obtain visitors from among them, though the visitors are possibly more abundant if there is land above flood level in the neighbourhood.

My work in the years 1902, 1903, 1904 and 1906 has taken me to the jute-fields all over Bengal; and as I examined crop after crop studying the races in cultivation, it has been a constant observation that two or more races may be grown in great proximity without becoming one; yet the cultivator rarely exercises discrimination in his selection of plants to be left for seed. At first I thought that I should be able to show that in the jute districts flower-visiting insects are not present in quantity, but I cannot satisfactorily do that. Instead the result of my work is to show that jute flowers do receive a considerable amount of attention from insects well built for effecting abundant cross-fertilisation. Why their influence is not distinctly apparent, I am as yet in no position to say.

I shall give my observations on *Corchorus capsularis* first, and thereafter those on the somewhat larger-flowered *Corchorus olitorius*. But first I have to express my great indebtedness to H. H. the Raja of Bardwan, and also to Babu Brajendra Kishore Roy Chowdhury of Gauripur, Mymensingh, for facilities given to me in my work at their Experimental Farms.

Corchorus capsularis, Linn.

In 1902, I visited the Bardwán Experimental Farm on August 28th. In 1903, I had a tent pitched beside the jute-plots, and was there on August 3rd, September 2nd, 3rd, 9th and 10th. In 1904, I visited the Farm on August 10th and September 22nd: and in 1906 I was there on September 15th. The first observations to be recorded were made during these visits.

Bardwán is outside the real jute area, and there is high sandy ground close to the experimental crops. Insects proved to be very abundant. There I first studied the mechanism of the flower; and afterwards I found that it does not vary from place to place.

The flowers of *Corchorus capsularis* open about 7-30 A.M.

and close in a clumsy fashion in the evening of the same day; I mean that they half close: and after midnight they cease to be shapely. By the dawn of the next day the petals are falling off. The anthers dehisce as the flowers open. They and the stigmas lie exactly at the same level. Self-fertilisation is insured in the absence of insect visitors, as I proved by means of linen wrappings whereby insect visitors were shut out.

Honey lies, half hidden, at the base of the flower, and secretion has already begun when it opens.

From about 8 A.M., throughout the day, I found the flowers to be visited at Bardwān by enormous numbers of *Apis florea* and by lesser numbers of other bees and butterflies. The *Apis* visits not without danger; for a yellow-green crab-spider was very common upon the plants and was never seen to be feeding upon any other insect; and very many individuals of *Vespa cincta*, Fabr., were hawking among the plants, flying quickly up and down through their tops and swooping down on some luckless *Apis* as it sucked, carrying it away, meanwhile apparently stinging it, and then setting on a leaf to devour it from the end of the abdomen upwards. I mention this circumstance chiefly because it illustrates the enormous numbers of individuals of the little *Apis* busy in the jute beds, and is quite opposed to Lefrance's statement that insects avoid the plant.

Apis florea began work upon the flowers immediately they opened, and was even seen trying to visit before they had opened. Its tongue is quite short and it lays its head among the anthers in the attempt to drain the flower. It turns to right and to left, frequently making three dips into one flower; and rarely it turns quite round. Some two hours after the opening of the jute flowers the butterflies named below began to visit and continued to do so through the heat of the day until evening. They are somewhat ill-suited visitors to the plant, their long tongues enabling them to reach the honey without touching the anthers and stigmas. The small bees are obviously the best agents. *Apis florea* can visit and drain the honey of 10—15 flowers per minute or 600 at least per hour, while *Apis dorsata*, which is a quicker worker, visits about 18 per minute. The skipper butterflies visit less than 10 per minute and often only one or two. A species of *Suastus* and *Telchinia violæ* were found to be fairly constant in visiting this *Corchorus* and a neighbouring yellow Composite—*Tridax procumbens*, Linn.

Visitors at Burdwan, August and September:—

HYMENOPTERA ACULEATA. Apidæ. (1) *Xylocopa latipes*, Fabr., sucking honey in 1906 only. (2) *Apis dorsata*, Fabr., sucking honey, fairly plentiful. (3) *A. florea*, Fabr., sucking honey and collecting pollen, always in great abundance. Scoliidæ. (4) *Elis* sp., sucking honey, fairly abundant. (5, 6, 7 and 8) Four small Aculeate Hymenoptera. (9) *Formicidæ*, a black ant, at honey in 1906. LEPIDOPTERA RHOPALOCERA. (10) *Terias*

sp. (11) *Telchinia violæ*, Fabr. (12) *Castalius rosimon*, Fabr. (13) *Suastus* sp. All these Lepidoptera sucking honey. HETEROCERA. (14) One Microlepidopteron, sucking honey. DIPTERA. Syrphidæ. (15) *Helophilus* sp., sucking honey. COLEOPTERA. (16) *Coccinella* sp., sucking honey.

Until recently Orissa has been more or less outside the jute area: but jute is now taking an extension in it. From August 22nd to August 27th, 1906, I was among the jute fields of Orissa, at Cuttack, Shishua and Jájpur. There is high land, sand-hills, etc., in the immediate neighbourhood of these places.

The flowers of *Corchorus capsularis* were seen to be freely visited by insects. A large bee of the genus *Xylocopa* (probably *X. fenestrata*, Bingham) was very constant near Cuttack, and also a large black wasp, and there were four butterflies visiting the flowers, viz., a Hesperid probably of the genus *Parnara*, a *Lycaena*, a white butterfly and a *Danuis*. All were at honey. Near Shishua, a wasp of the Eumenidæ was seen at honey. At Jájpur the Lepidoptera, *Parnara* (?), *Terias* and *Lyceana*, were again seen on the flowers together with the Hymenoptera, *Apis indica*, Fabr., *Apis florea*, Fabr., and an Eumenid. The Hesperid *Parnara* (?) was a frequent visitor.

Predatory wasps of a species different to that seen at Bardwán, were hunting smaller Hymenoptera among the jute tops both at Cuttack and Jájpur.

The chief part of the valley of the Bráhmaputra in Assam has, like Orissa until recently, been outside the jute area. In it at Goálpára on September 2nd, 1906, I saw *Xylocopa æstuanis*, Lepel., diligently visiting the flowers of *Corchorus capsularis* for honey, and with it were many individuals of a little blue-ringed *Anthophora* (or *Nomia*) collecting both pollen and honey. An individual of the common butterfly *Terias* was also on the flowers sucking honey. At Goálpára, hills are close to the jute-fields.

I will proceed now to give the results of observations in the districts of Northern Bengal, and the contiguous districts of the new province of Eastern Bengal and Assam. My work at Pusa (District of Darbhanga), Purneah and Kissenganj (District of Purneah) and Siliguri (District of Jalpaiguri), was done in so much rain that insect-visitors could not possibly go abroad. My work at Forbesganj and Barsoi (District of Purneah), Dinajpur (District of Dinajpur), Jalpaiguri (District of Jalpaiguri), Fulchari, Bogra and Santahar (District of Bogra), at Gafargaon, and on the occasion of my first visit to Mymensingh (District of Mymensingh), was done in showery weather with intervals between the showers in which insects might have visited the flowers: but I saw none. But at Parbatipur (District of Dinajpur) on August 15th, 1906, I observed on the flowers two individuals of an *Eristalis* sucking honey, and also a red and black Coccinellid beetle. At Balajan on September 4th, 1906, in the south-west corner of the Goalpara District, three species of butterflies were seen to visit the flowers for honey,—a *Terias*, a

Danaïs and a white butterfly. And at Jagganathganj (District of Mymensingh), on September 4th, 1904, I saw on the flowers *Apis dorsata*, an Apid not identified, and a Syrphid fly of the genus *Helophilus* at honey, while pollen was being devoured by many individuals of a red Coccinellid beetle, which was present in considerable numbers. On the occasion of my second visit, September 6th, 1906, to Mymensingh, between that place and Gauripur, I saw a *Danaïs* and a white butterfly go to the flowers.

The districts of Northern Bengal are in no way so exposed to regular floods and submersion, as the places that I come to next—places on the large rivers with no high land near, where the land for the homestead has often been artificially raised and all the fields go under water annually. They are Serájganj (District of Pabna), Goalundo, Pachuria, Faridpur and Madáripur (District of Faridpur), Náráyanganj and Narsingdi (District of Dacca), Chánpur and Hájiganj (District of Tippera). At Hájiganj insects were very abundant, but not so at the other places, which I will take first and together. The insect most generally seen was the tree-nesting *Apis dorsata*: it was observed on the flowers in considerable numbers at Serájganj on August 12th, 1904, and again diligently visiting at Madaripur on September 19th, 1904, and at Goalundo on August 30th, 1904. Another insect was a black Apid, seen at Serájganj. The fly *Helophilus*, whose larva is aquatic, we at present believe, was seen at honey at Goalundo on August 30th, 1904. A red Coccinellid was seen eating pollen at Goalundo on the same date, at Pachuria, on August 30th, 1904, and at Chandpur on September 9th, 1906. A *Terias* butterfly was seen at Narayanganj on September 1st, 1904.

At Rámpur Boalia, in the Rájshahi District, Mr. R. S. Finlow, on August 28th, 1906, observed butterflies on the flowers.

The following is a statement of the insects seen on the flowers at Hájiganj, on September 10th, 1906, at a time when the jute fields were under two feet of clear brown jheel water, and there was nothing above the flood except the railway embankment, a raised road and the spaces on which the houses of the village stand, and these last had largely been under water. The day was fine until the evening. Three species of *Xylocopa* were very busy at honey on the flowers,—*X. latipes*, Fabr., *X. æstuans*, Lepel., and another which seems to be *X. fenestrata*, Bingham. *X. latipes* visited at the rate of thirty flowers a minute and *X. æstuans* at the rate of thirty-five. *Apis dorsata* was abundant, sucking honey, and *Apis florea* was represented by a small number of individuals. A black Apid of the size of *Apis dorsata* was present also. Of butterflies three species were flying from flower to flower in the jute fields, a *Terias*, a *Danaïs*, and a white butterfly. A beetle of the Coccinellidæ was eating pollen.

Among the jute tops, *Vespa cincta* was busy hunting small Apids; and innumerable dragon flies were present here as elsewhere, giving an additional contradiction to Lefrance's supposition.

All Visitors of Corchorus capsularis.

	Madaripur.	Goalundo.	Pachuria.	Hajiganj.	Chandpur.	Narayanganj.	Mymensingh.	Jagannathganj.	Seraganj.	Parbatipur.	Balajan.	Goalpara.	Burdwan.	Jajpur.	Shishua.	Cuttack.
HYMENOPTERA—																
<i>Xylocopa latipes</i> ...			x									x				
<i>X. æstuans</i> ...			x									x				
<i>X. fenestrata</i> ...			x													x
<i>Apis dorsata</i> ...	x	x	x				x	x				x				
<i>A. indica</i> ...														x		
<i>A. florea</i> ...			x									x	x			
<i>Anthophora</i> , sp. ...											x					
<i>Eumenid</i> ...														x	x	
<i>Elis</i> , sp. ...													x			
Other winged <i>Aculeata</i> ...			x				x	x				x				x
Ants ...												x				
LEPIDOPTERA—																
<i>Danais</i> , sp. ...			x			x					x					x
<i>Castalius rosimon</i> ...													x			
<i>Telchinia violae</i> ...													x			
<i>Terias</i> , sp. ...			x		x						x	x	x	x		
<i>Lycaena</i> , sp. ...														x		x
A white butterfly ...			x			x				x						x
<i>Suastus</i> , sp. ...													x			
<i>Parnara</i> ? sp. ...														x		
<i>Microlepidopton</i> ...													x			
DIPTERA—																
<i>Helophilus</i> , sp. ...		x					x						x			
<i>Eristalis</i> , sp. ...									x							
COLEOPTERA—																
<i>Coccinellid</i> ...		x	x	x	x		x		x			x				

Corchorus olitorius, Linn.

The floral mechanism of this is exactly like that of *Corchorus capsularis*. The flowers also open at the same time and the anthers discharge pollen in the same manner. If insect visitors be excluded, self-pollination gives rise to a supply of good seed. At midnight the flowers are no longer shapely, and by the next morning the petals are falling. The flowers open by time not by weather, and will expand on the wettest day.

Visitors at Burdwan—

HYMENOPTERA ACULEATA. Apidæ. (1) *Apis florea*, Fabr., sometimes trying to visit before the flowers open. (2) A black Apid. (3) A black and tawny Apid. All sucking honey.

Visitors at Chinsurah on September 16th, 1906—

HYMENOPTERA ACULEATA. Apidæ. (1) *Xylocopa æstuan*s, Lepel., two individuals diligently sucking honey. (2) An Apid of the size of *Apis dorsata*, sucking honey. LEPIDOPTERA RHOPALOCERA. (3) *Papilio* sp. (4) A white butterfly frequently at honey. COLIOPTERA. Carabidæ. A small species, frequently feeding on pollen.

It is only in the Hooghly District and within the borders of adjoining districts that this jute is a commoner crop than *C. capsularis*, and I have not given to it the same attention that *C. capsularis* has had. But insects do not avoid the crops: and dragon flies and *Vespa cineta* find plenty of prey in them as in plots of *Corchorus capsularis*.

65. *Notes on the Pollination of Flowers in India. Note No. 3—The Mechanism of six flowers of the North-West Himalaya.—By*
I. H. BURKILL.

The following are wayside notes made in marching through the hills and valleys north and west of Simla, in May—the hottest and driest month of the year, when the shade temperature at the lower levels passed daily far above blood heat.

ADHATODA VASICA, Nees.

The conspicuous flowers of *Adhatoda Vasica* are in spikes, but they open only a few at a time. They are large, white and honied. The plant grows as a small bush in waste lands and on the borders of fields very plentifully below 4,000 ft., and flowers from December to June.

The tube of the corolla is 12 mm. long and curved a little: near its base the lumen is constricted by four indentations from outside, a pair above and a pair below (rather diagrammatically represented in fig. 12); the dorsal pair are a little above the ventral pair as indicated in fig. 11. At this point there is a weal of hairs obstructing a free passage down to the honey: the sides of the tube are strengthened by the adherent filaments of the two stamens. There is a large humped platform for insects to alight on.

The flowers open in the evening by the falling away of the lower from the upper lip—an act which leaves the upper lip hooded over the green anthers. These green anthers are in contact at the opening of the flower, and the stigma just peeps over the top of them. A little after the opening of the flower the tip of the hood turns up a very little, making room for the stigma to lift itself from contact with the anther-lobes. The anthers dehisce downward, on the lower side exposing their pollen for the backs of visiting bees to rub it off. It is 4 mm. from the anthers to the top of the hump of the platform.

As the flower ages the stamens diverge and the empty anthers are no longer covered by the hood; they become 10 mm. apart or more. While this is happening, the upper part of the style curves so as to bring the stigma exactly where the anthers were. The flower is then in the female stage.

Two species of *Bombus* were seen on the flowers—*B. hæmorrhoidalis*, Sm., and another species, here called *Bombus B.*, at 1,600 ft., and *Xylocopa æstuans*, Lepel., at 2,000 ft., all sucking honey. Flowers that are not visited do not set any seed, and they are 90 to more than 99 per cent. of those produced in the rather dreary parts of the Sutlej valley, where, in May, these observations were made.

DICLIPTERA BUPLEUROIDES, Nees.

The flowers of *Dicliptera bupleuroides* are numerous enough to make the plant quite conspicuous on the road-sides and

dry half bush-clad slopes that it inhabits. It is an excessively common plant in the Simla Hills from the plains to 7,000 ft.: it is generally much stunted. The flowers are purple (magenta), very rarely white, and they are honied.

The tube of the corolla is 7—9 mm. long and twisted through half a circle, so that the morphologically upper lip with the stigma and anthers is below, and the morphologically lower lip is above. The upper lip having no function as a hood has become flat and is converted into a fairly broad landing stage: while the lower (ultimately upper) lip serves as a standand, having dark dots near its base. The twisting of the tube takes place in the half-grown flower and always towards the same side. Except that the twisting practically obliterates the lumen of the very thin-walled tube, there is no obstruction in the way to the honey. The outside of the corolla is hairy and below the twist is more or less protected against biting and robbing insects by the bracts (see fig. 6). The rectangular mouth of the tube is seen in fig. 8.

The flowers open at dawn and fall on the same day between 4 P.M. and midnight.

Insects visiting the flowers settle on the stamens and style, touching the anthers and stigma, which are 2 mm. apart, with the underside of their bodies. An *Anthophora* was seen on the flowers at Suket, 4,000 ft., and *Apis indica* was seen on the flowers in Simla at 7,000 ft., both sucking honey, the latter diligently. A wasp was found at Suket to bite through the corolla tube for the honey.

MORINA PERSICA, Linn.

The flowers are, in whorls, on a very conspicuous spike, white, honied, and sweetly but not strongly scented. The plant grows in the open on dry hill-sides at altitudes of 6,000 to 9,000 ft., flowering in May when the grass is short, and it has not many competitors. The following observations were made on May 21st, 22nd, and 23rd, 1906, on the hills both north and south of the valley of the Sutlej above Suni, not far from Simla.

The tube of the flower is 40—45 mm. long and contains honey in fair quantity: no obstruction of hairs or difficulty is offered in the lumen to the passage of an insect's proboscis, if only long enough. But a platform to settle on is not provided. The outside of the tube is somewhat glandular-hairy; and a hard calyx protects its lowest 5—6 mm. against the biters of corollas. Nevertheless, though rarely, *Bombus hæmorrhoidalis* bites the corolla, and steals the honey: the holes which it makes I have seen utilised afterwards by a small Apid.

The flower opens just before sun-down, and is then pure white: the stamens have already dehisced and the stigma is sticky with sweet juice. In the opening of the flower the lower three petals begin to separate from the upper two, and the lowest petal of all falls: a quarter of an hour later the lateral members of the lower trio turn outwards and downwards: then the upper

lobes spread exposing the stigma and two contiguous stamens : after about forty-five minutes from the appearance of the first crack in the bud the flower is fully expanded as drawn in fig. 1.

Fertilisation is affected by Sphingidae, which leave abundant signs of their visits in plumes adhering to the stigma. After a fine night, I found that almost every flower had been visited by them. Once at sundown I saw *Bombus hæmorrhoidalis* in vain trying to reach the honey from the throat of the flower. I saw no butterflies going to the flowers by day, though I watched for them.

On the second day, some fourteen hours after they open, the flowers become flushed with rose-purple on the corolla-lobes : and before the sun sets and the next night's flowers open, they wither.

Kerner, in his *Pflanzenleben*, ii., p. 349, translated as the *Natural History of Plants*, makes several statements regarding *Morina persica* in Europe that point to differences between the Indian plant and the European plant. The time of opening and withering is the same, but he figures the corolla lobes as projecting forward, and says that anthers do not dehisce in the bud but half an hour after the flower opens. Afterwards, he says, the stigma curls round onto the anthers.

SALVIA LANATA, Roxb.

The flowers are, in whorls, on a conspicuous spike, deep lilac and honied. The plant grows in the open on dry hill-sides at altitudes of 5,000 to 8,000 ft., and the spikes stand out of the short burnt-up turf of May. The following observations were made over a wide stretch of country both west and north of Simla.

The tube is 11--12 mm. long, widening much vertically : it contains honey in fair quantity, the way to which is blocked by the sterile half anthers, as in *Salvia pratensis* ; a tooth on the sterile end is just seen at the entrance to the throat in a side view of the flower (see fig. 4). There is no obstruction within the tube beyond the sterile half anthers. The outside of the corolla is somewhat glandular-hairy, and the gamosepalous calyx is very glandular and for a length of 7 mm. protects the corolla-tube. Nevertheless, the corolla-tube is frequently bitten through, generally on the right-hand side, most probably by *Bombus hæmorrhoidalis*.

The flower opens in the early morning. The stigma projects from the hood as drawn : and the anthers are protected by the hood as indicated in fig. 4. A single stamen is drawn in fig. 5. There is a horizontal platform made by the lower lip, for bees to alight on : it is 7 mm. long. A bumble bee, alighting on the platform, touches with its back the projecting stigma, and then pushing with its head against the sterile anther lobes, brings the fertile anther-lobes down upon its back, just as in other *Salvias*.

A *Bombus* which I have not yet determined and may call *Bombus A*, was seen at 7,000 ft. on the flowers, going diligently from one to another.

SCUTELLARIA LINEARIS, Benth.

The flowers are in spikes and are conspicuous, but are not raised above the short grass of the dry slopes where the plant flowers in April and May. They are rose-pink with a yellow patch on the landing-stage of the lower lip, and are abundantly honied. They open in the early morning.

Observations were made on the flowers north and west of Simla, on both sides of the Sutlej valley.

The tube is 11—15 mm. long, rather narrow in the lower half, and slightly curved at the very base: in the upper half it broadens into the two lips. The lips are pressed very close together so that the tube is closed. There is no other obstruction to the tongues of insects, beyond the compression of the lips. The flower is intended for the visits of *Bombi*, which are strong enough to open the lips and adept enough to know how to get the honey. With their feet on the well-marked landing stage they have to raise with their heads the upper lip, a process which is contrived by pressing against the curious palatal plates (marked *p.* in fig. 10): on raising the hood the stigmas and anthers become exposed and the hood again returns over them when the lifting pressure is removed. These palatal plates are invaginations of the hood behind the lobe which is seen at the base of the upper lip in fig. 9.

The outside of the corolla is covered by fine hairs: the calyx hardly protects the tube at all at the base. *Bombus hæmorrhoidalis* bites every flower that it visits. It settles on the lower lip as if to suck honey in the proper way, then rapidly turns head downwards on the right-hand side of the flower and bites the tube just above the calyx: it busies itself with this work from dawn to dusk; and almost every flower examined had been robbed thus.

TEUCRIUM ROYLEANUM, Benth.

The flowers are in whorls, on a moderately conspicuous spike, white with a very faint green tinge, and are honied. The plant grows in hedges and under trees, flowering in May. The following observations were made at Bilaspur on the Sutlej, 1,600 ft. above sea-level on May 12th and 13th, and at Suket, further north, on May 16th, 1906.

The tube of the flower is 8—9 mm. long and slightly curved: the bases of the filaments divide its lumen as in fig. 3, into a part which contains the style and a part which contains the honey. The lower lip forms a horizontal landing stage—a sort of spoon wherein insects may alight: the handle of the spoon has two pairs of teeth on it for compelling the insect-visitors to approach

the mouth of the tube under the anthers and stigmas, which stand exposed over the landing stage. The distal teeth diverge, but are not horizontal as is the case in some European species of the genus: the nearer teeth are vertical and parallel as in *Teucrium Chamædrys*. The outside of the corolla is not hairy: the gamosepalous calyx protects the lower half of it from the biters of corollas.

The flower is proterandrous, and when it has just opened the stigma is behind the stamens: it moves forward during flowering as indicated in fig. 2.

The flower is visited by an *Anthophora*: and this bee settles on the spoon with its head thrust between the divergent teeth and up to the parallel processes. A glance at fig. 2 will show how, in so visiting the flower, it touches the anthers when the flower is young and the stigmas first when it is old. The longer filaments of the two pairs of stamens elongate a very little during flowering and just carry their anthers to a point beyond that indicated in the figure. The stalk of the flower is less rigid than the stalk of the alighting platform, and bends a little under the weight of a suitable insect-visitor.

EXPLANATION OF THE PLATE.

All the flowers are represented exactly twice their natural size, and at the angles which they take in life.

Fig. 1. Flower of *Morina persica*.

Fig. 2. Flower of *Teucrium royleanum*; the early and the late positions of the style are dotted in.

Fig. 3. Section through the tube of *Teucrium royleanum* near the base to show the way in which the honied part of the tube is made small and the distribution of hairs in it.

Fig. 4. Flower of *Salvia lanata*, with the position of the stamens dotted in: s. is the tooth on the sterile anther-lobe.

Fig. 5. A stamen of *Salvia lanata* in the position that a bee makes it to take.

Fig. 6. Flower of *Dicliptera bupleuroides* with its bracts.

Fig. 7. Corolla and style of *Dicliptera bupleuroides* to shew the twist of the tube.

Fig. 8. Corolla of *Dicliptera bupleuroides* seen from the front and from slightly below.

Fig. 9. Flower of *Scutellaria linearis*, with the position of the stamens dotted in: the narrow lobe at the base of the upper lip hides the invaginations that make the palatal plates.

Fig. 10. Tube and hood of *Scutellaria linearis* seen from below, the lower lip having been cut away: p. the palatal plates.

Fig. 11. Flower of *Adhatoda Vasica* just after opening.

Fig. 12. Diagrammatic section through the tube of *Adhatoda Vasica* at the invaginations near its base.

[N.S.]

66. *Note on the Common Kestrel (Tinnunculus alaudarius).*—By
LIEUT.-COLONEL D. C. PHILLOTT, *Secretary, Board of Examiners.*

In the Kapaurthala State the Common Kestrel is, by bird-catchers and falconers, called *Regi*, a name elsewhere in the Panjab given to the English Merlin. Amongst Panjab falconers generally, it is known by the name of *Larzānak* or "the Little Quiverer," and amongst Pathans by *Bād-Farukh*, probably a corruption of *Bād Khurak*, a term nearly equivalent to the English "Windhover." In the Chhach district of the Panjab (Lawrence-pore, Hazru, etc.) it is called *Shikl*.

According to Blanford it builds in the Himalayas above 7,000 feet. On 12th June 1891, however, I took two young birds from a nest in the chimney of the church at Abbottabad, Panjab, the height of Abbottabad being about 4,000 feet. The young had no down left on the feathers, though the tail-quills were only about three inches long. I have also observed the Kestrel during the breeding season in the Sulaiman Range, in the Rakhni Plain, Baluchistan, height about 3,500 feet, and at Fort Munro just above Rakhni, height about 6,000.

The Kestrel is easily caught in a *do-gaza* with a mole-cricket (Panjabi *ghū, ān*) as a bait.

In the Chhach-Hazara District it is sometimes used as a *bārak*¹ for the English Merlin, two or three inches of the end of its tail being previously cut off.

According to the *Bāz-Nāma-yi Nāṣiri*² it is, round Bushire and in other parts of the *Dashtistān-i Fārs*, used in the following manner as a decoy for snaring saker falcons. Being caught and trained to "wait on,"³ a string about twenty inches long is fastened to its legs, and at the end of the string is a small bunch of feathers. Thus trained and prepared, it is cast in the air to "wait on." From a distance it appears as though it were circling over a small bird in difficulties, and various birds of prey are attracted from far and near by the sight. As soon as a bird of prey draws near it, the Kestrel, apparently of its own accord, settles on the ground, and the trapper produces a pigeon. "The moment," says the writer, "that the hawk seizes the pigeon, it falls into the snare"; but what particular kind of snare is adopted he does not inform us. Persian and Arab gentlemen, whom I have visited at Baghdad, Basra, Muhammarah, and Shiraz, have confirmed this description.

The same author says that he has himself seen the Arabs of 'Unayzah and Shammar using the 'eyess'⁴ kestrel to train greyhound-pups that are intended for gazelle-hawking. The nestling is

¹ *Bārak*, a hawk used as a decoy: it has horse-hair nooses attached to its feet.

² A modern Persian work on falconry.

³ 'Wait on'; to circle high over the falconer's head waiting for the quarry to be flushed.

⁴ A young hawk or falcon taken from the nest (eyrie).

tamed and called to the fist till it is 'hard-penned.' It is then entered to jerboa-rats let loose at the end of a string. A rat with a broken leg is next released in front of a greyhound pup of "two months old" and the Kestrel is cast off: the rat is taken after a few stoops. Next a rat with a broken leg is released before two pups of "three or four months old," and when the pups start in pursuit, the Kestrel is cast off. The pups make a dash and the Kestrel makes a stoop, and so on alternately till the rat is taken. After a few maimed rats have been taken by the pups and the hawk, a sound rat is released in front of the pups, but a thin strip of wood, three or four inches in length, is passed transversely through the rat's ears to prevent its entering a hole. Behind the pups, the Kestrel is cast off. "It is obvious," says the author, "that two-month old pups cannot in the open country overtake or seize a sound 'two-legged rat.' After about thirty or forty stoops the rat is taken. The sport is just like gazelle-hawking with a *charkh* and greyhounds."

In an old Persian MS. on Falconry, written in India, it is contemptuously stated that, "The Kestrel is of no use except that its feathers may be used to imp the broken feathers of Merlins." No wonder that, in the olden days of falconry, it was assigned to a "knave."

67. ANTHROPOLOGICAL SUPPLEMENT.

6. *Two Persian equivalents for Peter Piper.*

The following are two Persian Equivalents for "Peter Piper":—

I. *امشب سه شب است که در شبستان شیخ هر سه سه شب سخت*

*شب سردیست شیخ شمس الدین **

Imshab si shab ast ki dar Shabistān-i Sayyakh har si si-shab sakht shab-i sardī 'st Shaikh Shams'-d-Dīn.

Shabistān is the covered and enclosed portion of the mosque: *rūzistān* is that portion open on all sides, the roof being supported by pillars.

Har si si-shab means the three consecutive nights, 'this night, last night, and the night previous to last night.'

II. *ز بُز دُزدی بُزی دزدید دزدی * عجب دُزدی ز بُز دُز بُز دزدید*

Z' buz-duzd-ī buz-ī duzdīd duzd-ī.

'Ajab duzd-ī z' buz-duz buz bi-duzdīd.

"From a goat thief, a thief thieved a goat;
A rare thief to thieve a goat from a goat-thief."

The following well-known verse gives the days of the month considered unlucky by the Persians:—

هفت روزی نعلش باشد هر مهی

ز آن حذر کن تا نیابی هیچ رنج

سه و پنج و سیزده با شانزده

بیست و یک با بیست و چار و بیست و پنج

Haft rūz-ī nahis bāshad har mäh-i

Z' ān ḥazar kun tā na-yābī hīch ranj.

Si u panj u sizdah bā shānzdah

Bist u yak bā bist u chār u bist u panj.

"Seven days are unlucky in each month.

Avoid these if you wish to avoid ill;

The third, the fifth, the thirteenth, and
the sixteenth,

The twenty-first, and the twenty-fourth
and the twenty-fifth."

D. C. PHILLOTT, *Lieut. Colonel.*

¹ *Duz* vulgar for *duzd*.

7. *Note on the Jargon of Indian Horse Dealers.*

Besides the mercantile sign language detailed in Journal No. 7, Vol. II, 1906, some trades have a jargon of their own that amounts to a secret language. A horse-dealer, for instance, instructing an underling to go and examine a horse in a fair, with a view to purchase, might still say *jā, o theko*, the verb *theknā* being probably a corruption of *dekkhnā*; but this, as well as most of the horse-dealers' jargon, belongs to a past generation. Old Panjab dealers, still living, remember the time when the following phrases were current amongst them:—

Horse, *gorpā*; mare, *gorpī*; fore-legs, *hāṭh* or *dastāure*; it has good fore-legs, *dastāure māle*; it has bad fore-legs, *dastāure kason*; bad, *bushasī*; eye, *kilkiyān*; tooth, *chhubāhī*; bog-spavin, *lāsa*; to examine, *hāzanā*. In discussing prices, too, a secret code used to be observed. The following list of numbers was collected with difficulty, by the writer, at various horse-fairs in the Panjab, various horse-dealers contributing odd numbers that had stuck in their memory. The numbers are given exactly as collected, discrepancies included. Writing on the subject an ancient *Dallāl* says, "These numbers are Pushtu, or if not Pushtu, then they must be some other language." As they are not Pushtu, we must conclude they are 'some other language':—

$\frac{1}{2}$	<i>Nīm.</i>	20	<i>Sūtī.</i>
1	<i>Akel</i> or <i>Aspīna</i> . ¹	25	<i>Kafa</i> ² <i>māle</i> ⁷ <i>sūtī.</i>
$1\frac{1}{2}$	<i>Akel nīm.</i>	30	<i>Gerī daigān</i> . ³
2	<i>Yāz.</i>	35	<i>Kafa kaso</i> ⁹ <i>yā sūtī.</i>
3	<i>Gerī.</i>	40	<i>Yā sūtī, ān.</i>
4	<i>Gōpān.</i>	45	<i>Kafa māle yā sūtī, ān.</i>
5	<i>Kafī</i> . ²	50	<i>Kafa daigān.</i>
6	<i>Rekhī.</i>	60	<i>Gerī sūtī, ān.</i>
7	<i>Rekhī-bas</i> . ³	70	<i>Rekhī bash sūtī, ān.</i>
8	<i>Yāz bash.</i>	80	<i>Gōpān sūtī, ān.</i>
9	<i>Sar-ī bash.</i>	90	<i>Sar-ī aspīna kaso lāng.</i>
10	<i>Sar-ī aspīna.</i>	95	<i>Kafī</i> ² <i>ka: o lāng.</i>
11	<i>Sār-ī mātē</i> . ⁴	100	<i>Lāng.</i>
12	<i>Sar-ī yāz.</i>	125	<i>Māsha māle lāng.</i>
13	<i>Sar-ī gerī.</i>	150	<i>Akel nīm lāng.</i>
14	<i>Sar-ī gōpān.</i>	175	<i>Māsha kaso yōz lāng.</i>
15	<i>Sar-ī nīm</i> . ⁵	200	<i>Yāz lāng.</i>
16	} ⁶	225	<i>Yāz lāng māsha māle.</i>
17		250	<i>Yāz nīm lāng.</i>
18		275	<i>Māsha kaso gerī lāng.</i>
19		300	<i>Gerī lāng.</i>

¹ It lingers in my mind that I have heard *aspīna* used for a rupee.

² In 5 and 95 *kafī*; elsewhere *kafa*.

³ *Bas* should apparently be *bash*.

⁴ Why not *Sar-ī akel*?

⁵ Why not *Sar-ī kafī*?

⁶ I was unable to obtain these numbers but logically 16, 17 and 18 should be *sar-ī rekhī*, *sar-ī rekhī bas*, *sar-ī yāz bash*.

⁷ *Māle* = "on, upon."

⁸ *Daigān* = *dahā*°i.

⁹ *Kaso* = *kam*.

325	Māsha māle gerī lāng.	600	Rekhī lāng.
350	Gerī nīm lāng.	700	Rekhī bash lāng.
375	Māsha kaso gāpān lāng.	800	Yāz bash lāng.
400	Gāpān lāng.	900	Sar-ī bash lāng.
	1000	Pare māle lāng.	

D. C. PHILLOTT, *Lieut. Colonel.*

8. *A Muslim charm (Arabic) suspended over the outer door of a dwelling to ward off Plague and other sicknesses.¹*

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
حَكِيمٌ
بِعِلْمِكَ يَا اللَّهُ يَا اللَّهُ يَا اللَّهُ الْأَمَانُ
عَلِيمٌ
الْأَمَانُ الْأَمَانُ مِنَ الطَّاعُونِ وَالْوَبَاءِ وَمَوْتٍ وَفَجَاءَةِ
مُؤْمِنُونَ
بِعَقْدِ مُحَمَّدٍ وَآلِهِ الطَّاهِرِينَ آمِينَ
يَا رَبَّ الْعَالَمِينَ *

"In the name of God the Compassionate, the Merciful.

O God! Thou art { the Wise
the Clement,² } and Thou art possessed
the All-knowing } of
forbearance. There is in us no power to fathom

Thy { Wisdom
Clemency³ } O God!
Knowledge

¹ This has been copied from one suspended over a house-door in Calcutta.

² Any of these epithets may be used.

³ Alternative readings.

O God! Security, security, security!—from Plague, Epidemics, Sudden Death, Misfortune and the Rejoicings of Enemies: from these punishments, Good Lord, deliver us, for we are

of the { Believers. } This we ask through Muḥammad and
of the { Faithful. }

his Holy Family. Amen, Lord of the Universe!"

Should a childless man read this charm twenty-one times on the 15th of *Sha'bān*, after the *maghrib* prayer, setting aside one pice after each reading and then give the pice to the poor, he will be blessed with offspring.

D. C. PHILLOTT, *Lieut. Colonel.*

9. *Note on the Humā or Lammergeyer.*

The *Humā* or *Humāy*, so often translated 'Phoenix,' is not, as is commonly supposed, a fabulous creature: it is merely the Lammergeyer or Ossifrage. Sa'di¹ says of it:—

همای بر همه مرغان از آن شرف دارد

که آستخوان خورد و جانوری نیا زارد

"The *Humā* is, for this, of birds the king:

It feeds on bones and hurts no living thing."²

Jehangir, in his memoirs, writes:—

"Accordingly, on the 19th of the sacred month of *Muḥarram* 1035 A. H.,³ We moved our Royal Standards towards Lahore. Previous to this it had been frequently represented to Us that in the *Pir Panjal* there existed the bird known as the *Humā*. People of that district stated that its food was fragments of bone, and that the bird was ever to be seen sailing in the air, seldom seated on the ground. Since our Royal Mind was greatly bent on investigating this matter, it was directed that, should any of Our Royal *Qarāvuls*⁴ shoot one of these birds and bring it to Our Presence, he would receive a reward of a thousand rupees. It so happened that *Jamāl Khān*, a *Qarāvul*, shot one and brought it to Our August Presence. As it was merely wounded in the leg, it reached Us alive.⁵ We directed that its crop should be examined. The crop was accordingly opened and was found to contain nothing but fragments of bone. The hillmen informed

¹ *Gulistān*, Chap. I., St. 15. ² Eastwick's translation. ³ A. D. 1625.

⁴ *Qarāvul* "a guard, a sentry," etc.: in India, apparently the matchlock men that acted as guards and *shikāris*, and accompanied the royal elephants on hunting expeditions.

⁵ *Bi-naẓar dār āmad*: in modern Persian this would mean "appeared," and not as in the text "was viewed, seen."

Us that its food consists entirely¹ of bits of bone, and that it is ever seen sailing in the air questing, with its attention turned towards the earth; and that whenever it spies a bone, it seizes it in its beak, and rising aloft casts it on a rock and shatters it, and then descends and eats the shattered fragments. It therefore appears to us most probable that this is the *Humā* so well known by name."²

The Lammergeyer, however, does not confine itself to bone. I have seen one carry off a dead chicken *in its beak*. Once, too, in Baluchistan I saw one stoop at a covey of 'chukor.' A Pathan orderly galloped to the spot and brought back a 'chukor,' dead but still warm. Whether the Lammergeyer had killed it, or whether it had robbed it from some other bird of prey is possibly doubtful; but my party of seven or eight keen-sighted hillmen stated that the Lammergeyer had killed it, and this too was my own impression. An Englishman, a sportsman and a keen observer, told me that he had once seen a Lammergeyer chase a 'chukor' down a ravine, but did not witness the end of the chase. (As the 'chukor' was a solitary bird, it was perhaps a sickly one.) On another occasion, in the little hill-station of Shaikh Budin, near Dera Ismail Khan, I saw a Lammergeyer stoop repeatedly at a *mārkhor* kid on a narrow precipitous path on the cliff below me. At each stoop the mother brought her horns down to the 'charge' and effectually kept the assailant at bay. Blanford writes: "The stories, chiefly Alpine, of its carrying off lambs (whence its name of "Lammergeyer" or Lamb vulture) and even children, and pushing goats and other animals over precipices, are now generally discredited. It is somewhat doubtful whether this great bird ever attacks living prey, * * *." Whether the Lammergeyer was really attempting to brush the kid off the cliff-side, or whether it was merely animated by that spirit of mischief that enters into birds as well as beasts, I cannot say.

The old Persian fable, that the man on whose head the shadow of a *Humā*³ falls, will eventually become a king,⁴ is well known; not so the modern Persian superstition, that he who shoots one of these auspicious birds, knowing it to be a *humā*, will meet his death within forty days.

D. C. PHILLOTT, *Lieut. Colonel.*

¹ *Madār* "centre," etc.: properly "its chief food," but the word is often incorrectly used to signify, as in the text, "entirely."

² "Tūzuk-i Jahāngīrī"; *Jashn-i Bistumīn-i Nauroz*, page 398 edition by 'Syud Ahmad, Ally Gurh,' 1864 A.D.

³ From *Humā* comes the adjective and proper name *Humāyūn*, "Fortunate."

⁴ کس نیاید بزیر سایه بوم * و ره ما از جهان شود معدوم

"What though the phoenix from the world take flight,
'Neath the owl's shadow none will ere alight."

Gulistan, Chap. I., St. 3, Eastwick's Trans.

10. Notes on certain *Shi'ah Tilisms*.

It is believed by the Shi'ahs that the following seven *tilisms* have been handed down direct from the *Twelve Imāms* and other great saints. These are generally inscribed on blank pages at the beginning of the Qur'an or other religious books. There is a special *tilism* for each day of the week, and it should be simply looked at, not perused, after the morning prayer.

Saturday.

"He who regards this diagram on Saturday, will, till the following Saturday, under God's protection, be preserved from all calamities. He will further receive respect from kings and dignitaries of the State; all who meet him will love him; and he will also be protected from sudden death."

افوض	اصري	الى الله	ان الله	بصير بالعباد
محمد علي	هـ	٧٦	١٢٠٢	٧
١٧٣	ي	١٢	ع	١٧
٦	٧٠	٨١٧٥	١٩	١٧
١٨	١٧	٩٦	ع	١٠٧١
لا	اله	الا الله	محمد رسول	الله

Sunday.

"He who regards this diagram on Sunday will escape hell-fire; all things will be easy to him; he will be loved and respected by all people, high and low; and all his enemies will be vanquished."

يا قدوس	يا مبرح	مينا	لك فتحا	انا فتحننا
٢٥٨	١٨٢	٩٧	١١٦١	١
٩٦	٥٩٥	٢	٧	٨٧
٥٥٤٥	١٦٥	١٩٦	١٨٤	٤
١٨	٤	٦٦	٩٦	١٢٢
الله	محمد رسول	الا الله	اله	لا

Monday.

"He who regards this diagram on Monday will that day be, under God's protection, safe from all harms; and he will be saved from his enemies, from those that seek to injure him, and from the temptations of Satan; he will be loved by all and will be prosperous in all his undertakings."

و هو ارحم الراحمين	فاله خير حافظ	و بشر المر منين	و فتح قريب	نصر من الله
١٥	٧	٨	١٨١	١
٥٤٥	١٧٣	٨	٤	٨
٨٦	٧	٢٧٢	١٤	٦
١٧٤	٧	٣٤	١٨	٦٢
الله	رسول	محمد	الا الله	لا اله

Tuesday.

"He who regards this diagram on Tuesday, will be under the protection of the Great Protector, and will be saved by God on High from the commission of sins, great or small, and will obtain his desires in this world and in the next."

يا نورالنور	يا منور	النور	يا خالق	النور
٩١	١٨	٩٧١	٨	٩
٥٦٣	٧	٢٦	٧	٨٢
٢٢	٢٢	٢	٢	٥٤٣
٢٩	٥٥	١٤	٧٦	٥١٤
لا اله	الا الله	محمد	رسول	الله

Wednesday.

"He who regards this diagram on Wednesday will be saved from all the ills and dangers of that day; he will be loved and respected by all, and the Lord Most High will accomplish his lawful desires."

يا الله	يا فتاح	يا الله	يا قدوس	يا رزاق
١	١٨١	٨١٨٨	١١٨	٩٨
٤٩	١٨	٧	٣	٣
٤	٤	٢١	٢٨٢	٣
١٤	٥٥	٤	٥٥	٥٢٥
١٥	٨١	١١	٢٨٨	٧١٢

Thursday.

"He who regards this diagram on Thursday will be loved and regarded by all; he will obtain wealth, and, under the protection of God on High, will escape all dangers and be successful in this world and blessed in the next."

يا قدوس ^١	يا ودود	يا الله	يا فتاح	يا مبرج
١	٢١	١٥٥	٧	٢٠٢
١٢	٧	١٣	٣	٢
٤٤	٤	٩	٩	١٩
٢	٩	١٢٩	٤	١٩٩
٦٩	٨	٣١	٣	٢

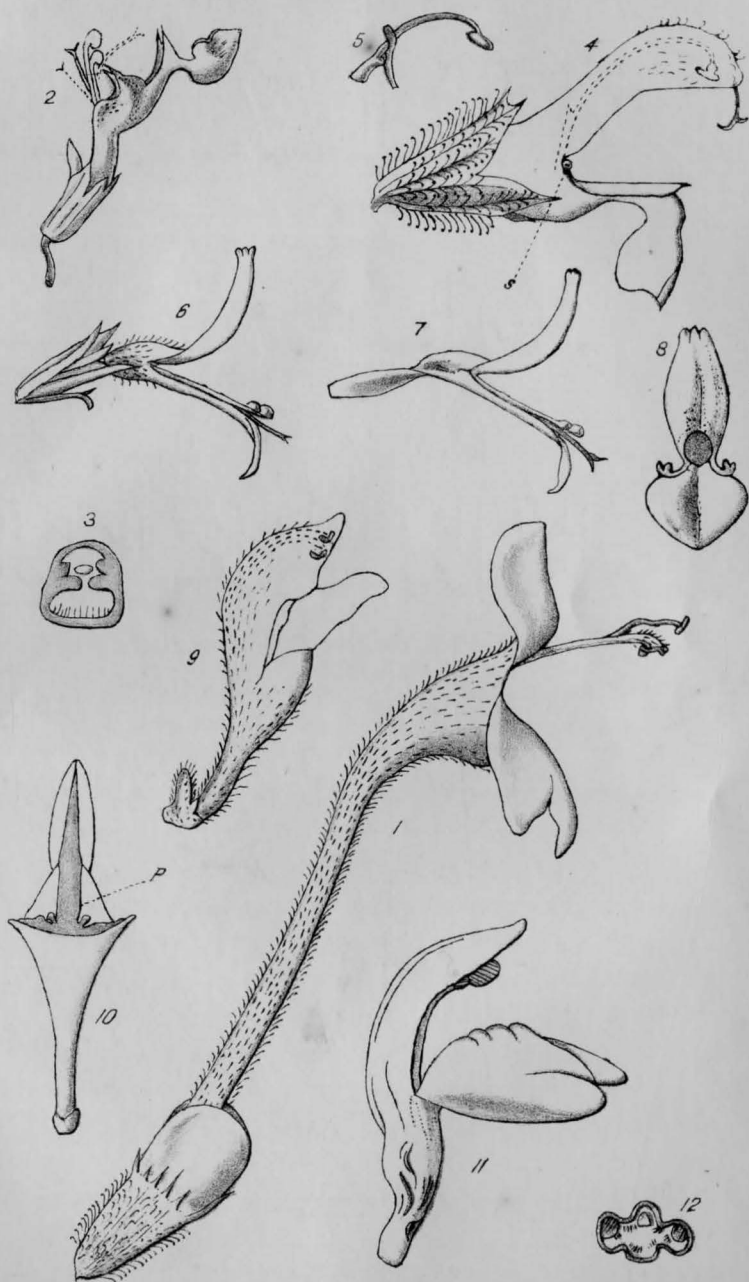
Friday.

"He who will regard this diagram on Friday will find, on that day, his enemies turned into friends; he will obtain his desires to the full and will be loved and respected; and he will be safe from all ills."

مليقا	مليقا	انت نعلم	صافي قلوبهم	مليقا
١	٤١	٢	٤	١٨
٤	٥٥٥٨	٥٥٧٨	١٢	١٢
٧٢	٤	١٢	٥٤	١٣
٥٢٥	٤	١١٤١	٤١	٣٣
لا اله	الا اله	محمد	رسول	الله

D. C. PHILLOTT, *Lieut. Colonel*; and
MUHAMMAD KAZIM SHIRAZI.

¹ An epithet frequently used in *Tilisms* is يا بدوح which seems to have no correct meaning.



SIMLA HILLS FLOWERS, ALL x2.

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Journal, Vols. 1—73, 1832—1904.

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