

THE
ASIATIC JOURNAL

AND

MONTHLY REGISTER

FOR



British India and its Dependencies :

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VOL. XXII.

JULY TO DECEMBER, 1826.

LONDON :

PRINTED FOR KINGSBURY, PARBURY, & ALLEN,
BOOKSELLERS TO THE HONOURABLE EAST-INDIA COMPANY,
LEADENHALL STREET.

1826.

VARIETIES.

PHYSICAL COMMITTEE OF THE ASIATIC SOCIETY.

The meetings of this Committee, long interrupted by the illness of the secretary, were resumed on the evening of the 21st of December, when the following papers were read.

1. A letter from Lieut. Col. Blacker, C.B., on the construction of a barometer, contained observations on the height of the mercurial column in different latitudes, accompanied by meteorological registers for May and June.

2. A letter from the same officer, also transmitting a meteorological journal for other months, and detailing some interesting observations and experiments on Daniell's and Leslie's hygrometers.

3. A communication from the same gentleman, on meteorological subjects, with a notice of a singular meteor which the writer observed in Calcutta, on the 3d of November, a little after sunset.

4. A communication from Mr. Hodgson, on the *chiru*, or supposed unicorn of the Himala, the skin and horns of which were presented to the inspection of the Society.

5. Observations on Mr. Hodgson's paper, by Dr. Abel.

6. Remarks on the rate of growth and habits of the *rhinoceros Indicus*, by Mr. Hodgson, communicated with notes by Dr. Abel.

7. A notice respecting a large female orang-outang of Sumatra, by Capt. Hull, communicated in a letter to Dr. Abel.

8. A paper on the *kyouptsing*, or greenstone of the Burmese, by Dr. Abel.

Meteorological registers have been kept ever since the invention of the barometer in various parts of the world, but have been so kept, that they are more adapted to vitiate than correct our conclusions on the subjects they were intended to illustrate. The Royal Society, to which we should naturally look for some precision, at least in their published records, have put forth such puerilities on the subject of atmospheric phenomena, as to have merited the castigation they have received from the pen of Mr. Daniell, who tells us, in his *Meteorological Essays*, that "the carelessness exhibited in this department has for a long time been the subject of serious and public complaint; and there is scarcely a person who has had occasion to consult the record, who has not declared it to be unworthy of confidence." And yet the *Meteorological Register* is always announced as kept at the apartments of the Royal Society, by order of the president and council. We are happy to learn, how-

ever, that this disgraceful laxity has ceased, and from the guidance of a committee composed of men "in the first ranks of science," we are to expect "a full indication of those points in meteorology which most require elucidation; a complete development of the means and precautions to be used in carrying on an experimental investigation of their nature; and a perfect model of the form of register best adapted to elicit all the advantages of the observations." Such having been the case with the Royal Society, it may be imagined that we have no great inducement to expect correctness elsewhere, especially in transoceanic situations, where observers rarely possess accurate instruments, or have sufficient leisure to detect the errors of such guides as the Royal Society; it has consequently been a cause of vexation to many, that the data afforded by the observations of scattered observers were unfit to be relied on; and the opportunity lost of judging of the universality of certain meteorological laws deduced from observations effected in Europe. Col. Blacker has felt this inconvenience, and with respect to his own observations, has remedied it in the best manner. He has constructed meteorological tables which embrace observations made at every period of the twenty-four hours, calculated to give a fair average of results, and has brought into operation all the instruments which can enable him to judge of the modifications of atmospheric pressure, and that can afford valuable criteria to others. "The register is generally divided into four columns, the first of which contains the day of the month, the age of the moon, and time of her passing the meridian. The second and third columns are headed 'Barometer' and 'Thermometer,' as those instruments have obvious periods of maxima and minima, with reference to which the remaining atmospheric phenomena are arranged; each of these two, accordingly, appears once as principal, when the other is annexed as secondary; so that the temperature corresponding with the barometric periods in the one case, and the pressure corresponding with the thermometric periods in the other case, are always exhibited. Besides the divisions headed "maximum" and "minimum" of the thermometer two other epochs are inserted in the same column, for the temperature at noon and that at sunset; the first of them being the climax of day, and the second having nearly the mean temperature of the four and twenty hours. The fourth column contains the register of all occasional phenomena of irregular occurrence,

rence, the fall of rain, extraordinary force of the wind, and general aspect of the heavens." Besides the thermometer and barometer, the hygrometer, photometer, and rain gauge are employed by Colonel B. in constructing his tables. We have thought it just to preface thus much in illustration of the general nature of some of Colonel Blacker's inquiries, and now return to his communications.

His first paper, on the construction of a barometer, resulted from the difficulty often encountered by observers of meeting with a barometer the indications of which can be safely relied on. The task of making this instrument is a work of so much delicacy and labour, that few ordinary instrument-makers will take, or can afford to take, the necessary pains in constructing it, and it has consequently happened that different philosophers have made their own barometers, although repeated failures in their attempts to boil the mercury in the tube have been abundantly discouraging. Colonel Blacker, however, succeeded perfectly on a first trial, although the operation of boiling the mercury in the tube occupied six hours. When the process was completed, not a particle of air was to be detected. With this instrument, accurately divided by the imperial brass standard, and with its capacity and dilatation minutely calculated, Colonel Blacker pursues his atmospheric researches. Amongst the first-fruits of his investigations are his interesting remarks on the height of the barometer in different latitudes. The conclusions, however, which the Colonel draws on this subject he wishes rather to be understood as inferences which he could not indeed escape from, with the materials before him, but which he proffers rather as inducements for others to inquire, than as fixed principles established on a sufficient generalization of facts. It not being compatible with our present purpose to enter into the detail of Col. Blacker's paper, we must content ourselves, in this place, with quoting his more important conclusion, namely, "that the same Barometer, corrected for difference of circumstances, will indicate a greater height in France and England, at the level of the sea, than within the northern latitude of the torrid zone to the eastward of the Cape of Good Hope:" an inference at variance with the opinion, that the atmospheric pressure, under equal conditions of moisture, &c., is the same in all parts of the world. "The atmosphere," observes Colonel Blacker, "has always been considered to oppose the same mean pressure all round the globe at the level of the sea; but if the present result, from which I cannot defend myself, shall prove true, there will not only be a difference of atmospheric pressure within the limits I have described, but a very important difference."

In his second communication, Colonel Blacker goes into a comparison of the relative merits of Mr. Leslie's and Mr. Daniell's hygrometers.

Colonel Blacker found the two instruments to differ materially in their indications; in some instances upwards of twelve degrees: a difference certainly fatal to the accuracy of one, if not of both. The discussions and statements on this point not being suited to our immediate purpose, we shall only observe, that Colonel B. decides in favour of Leslie's instrument. The feeling at home is, we believe, in favour of Daniell's, and from some experience of the use of the two, we decidedly prefer it. The question is one of very great interest, and merits further investigation.

Colonel Blacker's third communication gives an account of a singular meteor, having the appearance of an elongated ball of fire, which he observed on the 3d of November, a little after sunset, when on the road between the Court-house and the Town-hall. Its colour was pale, for the daylight was still strong, and its larger diameter appeared greater, and its smaller less than the semi-diameter of the moon. Its direction was from east to west, its track nearly horizontal, and altitude about thirty degrees. Colonel B. regrets not having heard of any other observation of this phenomenon at a greater distance, whereby he might have estimated its absolute height. As, however, it did not apparently move with the velocity of ordinary meteors, it was probably at a great distance, and consequently of great size. So long as Colonel Blacker beheld it, which was for five or six seconds, its motion was steady, its light equable, and its size and figure permanent. It latterly, however, left a train of sparks, soon after which it disappeared suddenly, without the attendant circumstance of any report audible in Colonel Blacker's situation. Colonel Blacker concludes his paper with some interesting observations on luminous meteors, and considers them of perpetual occurrence, although daylight, clouds, and misty weather, so often exclude them from our view. Of their number no conception can be formed by the unassisted eye, but some conjecture may be formed of their extent from the fact mentioned by our author, that in using his astronomical telescope he has often seen what are called falling stars, shooting through the field of view, when they were not visible to the naked eye; and when it is considered that the glass only embraced one-twenty-five-thousandth part of the celestial hemisphere, it will be apparent that these phenomena must be infinitely numerous, in order to occur so frequently in so small a space.

Mr. Hodgson's paper on the *chiru* concerned the animal which has been so often mentioned as the unicorn of the Himala.

The

The reports respecting this animal were so numerous and concurring, and so borne out by the specimens of single horns sent down at various times to the Asiatic Society, and by Bhotea drawings of a deer-like animal, with one horn springing from the centre of the forehead, that scepticism was almost silenced by the variety and quantity of evidence. The zeal of Mr. Hodgson for the advancement of knowledge, and which has afforded to the Asiatic Society the means of judging of the literature, antiquities, arts, and natural productions of the Himalayan region, has at length settled the question respecting the *chiru*, or antelope of the Bhoteahs. The skin and horns sent by Mr. Hodgson were the spoils of an animal which died in the menagerie of the Rajah of Nepal, to whom it was presented by the Lama of Digurchi, whose pet it had been. The persons who brought the animal to Nepal, informed Mr. Hodgson that the favourite abode of *chiru* is the Tingri Maidan, a fine plain or valley, through which the Arrun flows, and which is situated immediately beyond the snows by the Kooti pass; that in this valley beds of salt abound, to which the *chirus* are said to resort in vast herds. They are represented as in the highest degree wild, and inaccessible by man, flying on the least alarm; but if opposed, assuming a bold and determined front. The male and female are said to present the same general appearance.

The living subject of Mr. Hodgson's description presented none of those formidable attributes with which the tales of the Bhoteahs had clothed the *chiru*. In form and size he offered the common character of the antelope tribe, lived chiefly on grass, and did not seem dissatisfied with his captivity, although his panting showed that even the climate of Nepal was oppressive to him; he at length sunk under a temperature which rarely exceeded 80° as a maximum, at the commencement of the hot weather. Although timid, and on his guard against the approach of strangers, he would, when warily laid hold of, submit patiently to handling.

The general form of the animal was graceful, like that of other antelopes, and was adorned with their matchless eye. His colour was reddish or fawn on the upper, and white on the lower part of the body. His distinguishing characters were, first, long sharp black horns, having a wavy triple curvature, with circular rings towards their base, which projected more before than behind: and, secondly, two tufts of hair projecting on the outer side of each nostril, together with an unusual quantity of bristles about the nose and mouth, and which gave to his head a somewhat thickened appearance. The hair of the animal resembled in texture that of

all the trans-Himalayan animals which Mr. Hodgson has had the opportunity of examining, being harsh and of a hollow appearance; it was about two inches long, and so thick as to present to the hand a sense of solidity; and beneath lay a sparse fleece of the softest wool.

Dr. Abel's remarks on Mr. Hodgson's paper chiefly concern the specific characters and dimensions of the animal, and present a formal description of it drawn from the data furnished by Mr. Hodgson, and Dr. A.'s own examination of its remains. Dr. Abel proposed to call the animal, *Antelope Hodgsonii*, after its discoverer.

Capt. Hull's account of a female orang of large size, taken on the south coast of Sumatra, is exceedingly interesting, in reference to the large male animal of the same species, which is described in the last volume of the Asiatic Transactions. It appears that Capt. Hull having, whilst at Bencoolen, heard of the capture of the last-mentioned animal at Truman, despatched a young man to the spot where it was taken, in the hope of his meeting with another orang of the same kind. After a lapse of several months he returned to Bencoolen, bringing with him a large female orang, as the fruit of his enterprise.

On his arrival at Truman, where he was kindly received, he heard various accounts from the natives of the animal—he was in search of, called by them Orang Mawah, Mawi or Mawy. These animals, they said, resided in the deepest part of a forest, distant from Truman about five or six days' journey, and appeared very averse to undertake any expedition in search of them, stating that these beings would assuredly attack any small party, especially if a woman should be with them, whom they would endeavour to carry off. They were unwilling also to destroy these animals, from a superstitious belief that they are animated by the souls of their ancestors, and that they hold dominion over the great forests of Sumatra. After some days' debate, however, and hearing that a Mawah had been seen in the forest, the young man collected a party of twenty persons, armed with muskets, spears and bamboos, and having marched in an easterly direction for above thirty miles, fell in with the object of his search. The orang was sitting on the summit of one of the highest trees, with a young one in its arms. The first fire of the party struck off the great toe of the old orang, who uttered a hideous cry, and immediately lifted up her young one as high as her long arms would reach, and let it go amongst the topmost branches, which appeared too weak to sustain herself. During the time the party were cautiously approaching her to obtain another shot, the

poor animal made no attempt to escape, but kept a steady watch on their movements, uttering at the time many singular sounds, and, glancing her eye occasionally towards her young one, seemed to hasten its escape by waving her hand. The second volley brought her to the ground, a ball having penetrated her breast, but the young one escaped. She measured four feet eleven inches in length, and two feet across the shoulders, and was covered with red hair. It is probable, from the spot where this animal was found being so near to Truman, that she was the mate of the one destroyed by the party from the brig. Her remains, consisting of the skin and all the bones, were transmitted home by Capt. Hull to Sir Stamford Raffles.

Mr. Hodgson's observations on the rhinoceros are in continuation of a paper, read at a meeting of the Physical Committee, in February 1825, on the gestation of the rhinoceros, at the close of which he proposed to furnish to the committee, from time to time, an account of the rate of growth of one of these animals which was born in the menagerie of the Rajah of Nepal. The first dimensions taken of the animal were made at three days old, when it measured two feet in height, three feet four inches and three-quarters in length, and four feet and seven-fourths of an inch in its greater circumference: since that it has increased in the following proportions. From three days to one month, it gained five inches in height, five inches and three-quarters in length, and three inches and three-quarters in circumference; while from the age of one to fourteen months, it increased one foot seven inches in height, two feet in length, and two feet seven inches in circumference; from fourteen to nineteen months, four inches in height, one foot four inches and a half in length, and two feet four inches in circumference, the rhinoceros being, at the date of the last measurement, in December 1825, four feet four inches high, seven feet four inches and a half long, and nine feet five inches in circumference.

In general aspect the cub now resembles the mother, the heavy folds of the skin, which were wanting in July last, being fully formed in December. The nasal horn at the latter period scarcely protruded two inches beyond the skin.

The observations of Mr. Hodgson are of great value, in reference to all questions respecting the rate of development and full growth of many of the larger animals, respecting which scarcely any authentic statements are to be found in authors, although they have exercised the genius of Buffon and other philosophical writers. The diminished ratio of increase of height remarkable in the latter period of deve-

lopment, as stated by Mr. Hodgson, renders it probable that the animal will yet be a long time in arriving at its adult size, a supposition which is also rendered probable by its seventeen months' gestation, and the slow growth of its horn.

Mr. Hodgson, in pursuing his inquiries, has had occasion to remark the amiableness of the young animal's disposition, both towards his keeper and strangers; an instance, he observes, of the power possessed by Asiatics, through their tranquil familiarity, of taming the most formidable quadrupeds. That the rhinoceros will submit to the domesticating influence of man we have seen more than one instance, nor would the tractability of this herbivorous animal seem in any way a matter of surprise, when we know that the fiercest of the carnivorous tribe have become the attached companions of their master, if the rhinoceros had not been held up by writers of every age and country as a standard of brutal and untameable fury. India exhibits numerous proofs of false conclusions by historians regarding the habits and temper of animals, and affords a field of interesting inquiry respecting their instinct, as contradistinguished to what might be called their educatable faculties. This subject has hitherto, we believe, only been treated by the naturalists of Europe, who have relied, in many cases, upon very vague or insufficient narratives, but never by any person residing in the native country of the animals whose history has been recorded.

The *kyoupsing*, called also the *mo-dyoothwa* by the Burmese, and *yeeshulou-ise* by the Chinese, of which Dr. Abel's paper gives some account, is said to be highly prized by the Burmese, and to form a principal article of export from the Mogaon country. It is stated that large prices are given for large specimens; but that the purchasers run considerable risk, as the precious part must be sought for in the centre of the stone, and is frequently sought for in vain. The specimen which Dr. Abel examined he describes as being of a dark green, mottled or veined with a lighter green colour; of a triangular pyramidal form, of a polished surface, and as weighing 79 lbs. 4 oz. troy. Whether this be the natural aspect of the mineral, or has been produced by art, Dr. Abel does not decide. From several experiments, he found its average specific gravity to be 3.03. It resisted the action of the blowpipe, excepting that it became white and brittle; when mixed with borax, and subjected to a strong heat, its colouring matter formed a hard green glass with the flux, whilst its substance formed a white enamel. The stone felt greasy, and was broken with extreme difficulty. Its fragments were very translucent on the edges. From its exterior characters, Dr.

Abel was disposed to class it with nephrite, and considers it to be the oriental jade of mineralogists. A subsequent analysis of the stone, however, has satisfied him that whilst it is the mineral described under the latter name, it is, in fact, distinguished both from nephrite and prehnite, with the latter of which it has some analogy, by distinct chemical characters. He finds it composed of silica, lime, alumina, iron, manganese, and chrome, and suspects the existence of one or both of the fixed alkalis, but has not yet determined the point to his satisfaction. From nephrite he states this stone to differ in its proportion of silica, and in containing very little or no magnesia, and resembles it in the presence of chrome; from prehnite it differs in its much smaller proportion of alumina, and in the presence of chrome and manganese, but resembles it in the proportions of silica and lime. With Saussure's analysis of oriental nephrite it agrees in its general constituent character, but differs from it in the proportion of ingredients and in the presence of chrome; whether it will also be found to agree with it in the presence of potash and soda is yet undetermined. Another stone with which it would be interesting to compare it is the celebrated yu stone of the Chinese, which Dr. Abel, in his work on China, conjectured to be a species of nephrite closely allied to axestone, but is of opinion, from subsequent experience, that it will be found distinct from it, and probably a variety of the oriental jade. An analysis of the yu must determine this point, and no analysis that we are aware of has yet been published.

According to the second volume of the *Oriental Magazine*, it appears that M. Abel Rémusat, in his work entitled "*Histoire de la Ville de Khotan*," has determined the yu stone to be "nephrite or jade, the species called China or Oriental," and that he was confirmed in this opinion by Mr. Koenig, of the British Museum, who has declared it to be China jade. There is reason to believe that Mons. Rémusat has fallen into a mistake on this subject, by confounding what is commonly called oriental with China jade. The former is much better known than the latter, and has been ranked with nephrite by those who would not class the China stone under the same head; thus Professor Jamieson admits an Asiatic variety of nephrite, although he refers China jade to prehnite. The minerals known in Europe under the name oriental jade are derived from India, Persia, Siberia, and even from Egypt. Mr. Koenig might therefore state the yu to be "unquestionably the same as the substance called China jade," without thinking it the same as oriental jade. He particularly states the China jade to be allied to prehnite;

but whether the two substances be the same or not, it is singular that Saussure's analysis did not satisfy Mons. Rémusat that oriental jade could not be nephrite.—[*Cal. Gov. Gaz.*]

MEDICAL AND PHYSICAL SOCIETY.

A meeting of this Society was held at the rooms of the Asiatic Society on the 4th Feb., A. Gibb, Esq. the president in the chair.

Dr. Burke, inspector of hospitals in his Majesty's service, was elected a member.

The secretary read a paper on the native operation for cataract, by Mr. Breton. This operation is very commonly practised by the natives of Hindustan, both Mohammedans and Hindus, and with a degree of success that could scarcely be anticipated from the rudeness of the implements, and the ignorance of the operators, who are utterly unacquainted with the anatomy of the eye. The native mode of couching differs in some respects from that which has been practised in Europe since the days of Pliny, and from that described after the Greek authorities by the Arabs. Mr. Breton, therefore, concurs with Dr. Scott, who has given some account of the operation in the *Quarterly Journal of Science*, in regarding it as of indigenous origin, and not borrowed from Grecian or Arabian surgery. Instead of the couching needle in use with European practitioners, the native operator employs two instruments, a lancet and a needle; the first is used to perforate the coats of the eye: and, to obviate the possibility of its penetrating too deeply, a guard of thread is bound round the blade at about 1-10th of an inch, from the point. After the perforation is made, a kind of probe or needle is introduced to depress the lens; this instrument is about five inches long, of the size of a crow-quill, the shaft circular, diminishing in diameter to within about an inch of the point, when it becomes of a triangular shape, with blunt edges; the apex is also blunt: just above the triangular part thread is wound round it to prevent its passing too far. The needle is directed in the axis of the lens, and serves to depress it below the pupil: the eyelids are then closed, the needle remaining in the eye, being supported by the sort of shoulder which it forms where expanding into a triangle, and resting on a dossil of lint placed on the cheek. After a short interval, the eye is examined: if the lens have risen, it is again depressed; and this is repeated until the operator is satisfied that the depression has been effected; the needle is then withdrawn, and some slight precautions are taken against the inflammation that follows.

After being satisfied of the safety and efficacy