

THE LESSER ONE-HORNED RHINOCEROS

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[Plate 11]

For many years there has been in the collection of the Museum of Comparative Zoology a mounted specimen of the lesser one-horned rhinoceros, *Rhinoceros sondaicus*, which apparently is the only mounted skin in any American museum. It was purchased of Ward's Natural Science Establishment at Rochester, New York, in 1880, and was said to have come from Java. Beyond this, nothing is known of its history, the record books of that great firm having been lost in the recent lamentable fire. The specimen is a somewhat immature female, and in place of a horn, has merely a large knob on the end of the snout. A photograph of the animal is given herewith, showing very well its general appearance, the very small horn, and the hooked upper lip, and also, unfortunately, the loss of hair on its tail.

A realization that this species is now actually on the verge of extinction has led us to call attention to the specimen and to make a census, no doubt imperfect, of the specimens at present preserved in other museums, in the hope that it will not only serve to bring other examples to light but also that it may emphasize the necessity of securing, if possible, a representation of the species ere it wholly disappears. For it is perhaps too much to expect that any amount of protective legislation will ever suffice to re-establish it over at least the continental portion of its former range.

The lesser one-horned or Javan rhinoceros is easily told from the larger Indian rhinoceros (*R. unicornis*), not only by its smaller size but by the pebbly nature of its skin, which appears as if studded with wart-like nodules. In both there is a prominent fold transversely at the hip, another just back of the shoulder, and a third at the base of the neck, so that the body seems to be divided into sections. A difference appears in the neck, which in the Indian rhinoceros has the skin fold at its base curved backward across the shoulder until it nearly reaches the fold behind the shoulder, whereas in *R. sondaicus* the fold is more nearly transverse, running from in front of the leg to the summit of the neck, with a small fold from the occiput back to the middle of the main neck fold, cutting off a triangular area on the nape. When full grown, the lesser one-horned species stands nearly as high at the shoulder as the larger, but its bulk is much less. One in the Liverpool Gardens about

1836 is said to have measured 4 feet, 8 inches at the highest part of the back; another, a large female, according to Cockburn (Proc. Asiatic Soc. Bengal, 1884, p. 140) stood 5 feet, 6 inches high, and its skull had a basal length of 23 inches. Dollman (1928) gives the height at shoulder as 5 feet, 10 inches. The skull is said to be easily distinguishable by the broader mesopterygoid fossa, with its palatal margin produced in the middle, and by its partially ossified nasal septum. The molar teeth differ in lacking the crista. The well-known monograph with illustrations by Sclater (1876), and his account of a Javan specimen with a colored plate (Sclater, 1874), may be referred to for additional details.

Formerly this rhinoceros had a somewhat extensive range, extending, according to Blanford (1888-91) from the Sundarbans and parts of eastern Bengal, the Sikkim Terai and Assam, throughout Burma and the Malay peninsula to Sumatra, Java, and Borneo. Probably, however, the statement of its occurrence in the Sikkim Terai, based on Kinloch, is erroneous, and Blanford discredits Jerdon's record of its presence in the forests of Orissa. It may be said, also, that the evidence for its occurrence in Borneo is far from good, being based in part on native report (see Sclater, 1869); and until recently even its presence in Sumatra was questioned. Positive evidence is now forthcoming, however, that it still occurs in Sumatra, for De Beaufort (1928) gives an account of a complete skeleton, presented to the Zoological Museum of Amsterdam, that was procured by a Mr. Keith, 250 kilometers southwest of Palembang, on that island. The same writer, in summarizing various notes on the range of the species, mentions that according to P. Vageler (in "Die Umschau," vol. 31, p. 289, 1927) a big-game hunter, G. C. Hazewinkel, killed in Sumatra no less than eight, which were supposed to represent a new variety, but in fact appear absolutely identical with Javan specimens.

At the present time it is likely that very few individuals of *Rhinoceros sondaicus* still exist in continental Asia. G. H. Evans (1905), writing of rhinoceroses in Burma, says that the two-horned *R. sumatrensis* is the commoner, and that during the previous eight or nine years he had known of only two *R. sondaicus* having been killed by Europeans. They occurred only in certain areas of hilly country in Upper and Lower Burma, preferring this type of terrain to the lowlands, and frequenting even mountainous districts. They are partial to water, especially streams with rocky or shingly beds, and like to roll in wet mud. During the day they lie up in the shade on hillsides or on the summits of ridges above streams. They appear to be browsers, and also to like fruit,

such as wild mangoes and figs; also leaves of trees, and bamboo. They swim well, crossing rivers, and in fighting bite with the large incisor teeth, use their horn, and finish by trampling an adversary. Shortridge (1915) confirms their hill-loving habits, saying that in the Dutch Indies they seem to be more of a mountain animal than is the Sumatran species. He knew of but a single one shot by a European in southern Tenasserim, some years previously at Victoria Point, but doubts not that a number are killed at water holes by natives, with whom the blood and horns are in great demand as medicine. More recently, C. Boden Kloss (1927) writes that, though formerly fairly numerous in Tenasserim and Java, only a few dozen individuals now survive, all "strictly protected," and that he has no evidence of the animal's presence in the Siamese portion of the Malay States. In Perak, lower Malay Peninsula, however, two individuals have been killed in the last thirty years, the mounted heads of which are now in the Selangor Museum of the Federated Malay States. The first of these was the locally famous Pinjih rhino, shot in 1899, in the Pinjih valley, Kinta district, by Sir George Maxwell. It was a male, standing 5 feet, 5.5 inches at the shoulder. The second was a female, killed April 16, 1924, at Kuala Serukoi, near Telok Anson, in Perak, by an unlicensed hunter. The skull and head skin only are preserved at the Selangor Museum. Both these animals were savage, and given to unprovoked attacks. The Pinjih rhino was a well-known individual and had been the terror of the valley long before the British occupation in 1874. It had killed at least three men and only large and well-armed parties went into its area. The 1924 cow rhino had come to notice through its having attacked a Chinese who was tapping jelutong in the forest. He was charged three times, tossed, and chased, but managed to escape. It was said that there was a second rhino in the neighborhood. No doubt single individuals such as the Pinjih bull, may, as the species dwindles in numbers, survive for many years in a chosen haunt without breeding, partly because they tend to be local in their habits, so that the survivors are too scattered to find one another.

The horn in this species is small, and in the female hardly developed. According to Rowland Ward's Records of Big Game, the largest known specimen measured $10\frac{5}{8}$ inches in height and is in the collection of the British Museum; a second of practically equal height and a third measuring $8\frac{1}{4}$ inches are privately owned. All three are from Java.

LIST OF SPECIMENS IN MUSEUMS

The following list includes all the specimens in museum collections of whose existence we have been able to learn. It is doubtless incomplete, for certainly there must be more in some of the European institutions or in private collections.

AMSTERDAM, HOLLAND, *Zoological Museum*: three complete skeletons, including the one from 250 km. southwest of Palembang, Sumatra, recorded by De Beaufort (1928); also two separate skulls.

BERLIN, GERMANY, *Zoologisches Museum der Universität*: Dr. Pohle kindly informs us, in reply to inquiry, that the Museum has in all five specimens of *R. sondaicus*, including a skeleton and three other skulls from Java, and a skull from Kapala Wuada, Sumatra, collected by Blandowski.

Although Dr. Pohle has been unable to trace the type of *R. jamrachii*, it may be that the specimen is still in Berlin which according to Sclater (1876) was taken in Manipur in 1874 and imported to London by the dealer, Jamrach. After remaining some time in London, it was transferred to the Berlin Zoological Gardens, where Peters pronounced it *R. sondaicus*, as had the zoologists in England. This determination did not satisfy Jamrach who, impressed by its large head, long ears, and the numerous boss-like excrescences of the skin, insisted that it represent an undescribed species. Since no naturalist would describe it, he decided to do so himself, and published an account of it in October, 1874, on a sheet of green paper, naming it *Rhinoceros jamrachii*! If the remains of the specimen were preserved, they constitute the type of this nominal species. Sclater (P. Z. S. 1880, p. 420) later announced that he believed this animal, as grown to adult size, represented *R. unicornis*. Since Professor Ward often got rare specimens from European Zoological Gardens it is by no means impossible that the specimen in the Museum of Comparative Zoology may be the lost type with the formal locality of "Java" added. Specimens from Zoological Gardens have a way of getting wrong localities attached to them.

BUITENZORG, JAVA, *Buitenzorg Museum*: K. U. Dammerman writes: "According to your request made in your letter of September 29th, I have pleasure in sending you a photograph of our mounted female rhinoceros of Java and two photographs of a head of a male of the same species, shot in South Sumatra. The female is an old and badly stuffed specimen and we ourselves are trying to get fresh specimens. But the species has already become very rare except in one of our reserves, where, however, we do not like to kill specimens. The Museum has one complete skeleton from Java and several skulls."

CALCUTTA, INDIA, *Indian Museum*: one adult female, mounted skin, from the Sundarbans, mouth of the Ganges, about 1870; one stuffed specimen, also the skeleton, collected in Sundarbans by O. L. Fraser and J. F. Barclay; one stuffed specimen, also the skeleton, collected in Sundarbans by J. F. Barclay; one skeleton and skull from Jessore District, collected by J. H. Barlow; one incomplete skeleton, locality and collector unknown; one skull, locality unknown, collected by M. Wallich, Asiatic Society Bengal; one skull from Tavoy Point, collected by Genl. Fytche, Asiatic Society Bengal; one skull from Java, Batavian Society, Asiatic Society Bengal; one skull from Sundarbans, collected by W. W. Shepperd; one skull from Chillichang Creek, Sun-

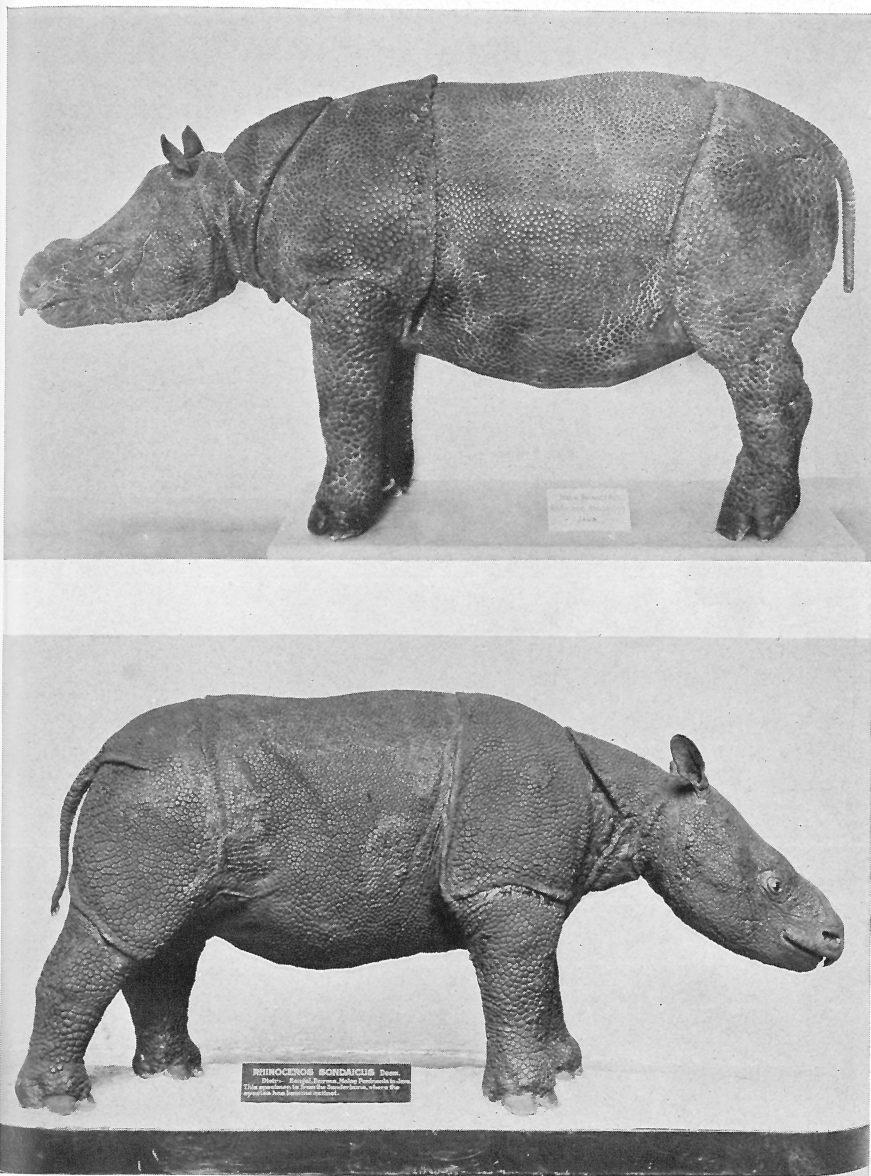
- darbans, collected by Capt. Charling; one skeleton and skull, locality and collector unknown; one lower jaw, locality and collector unknown; two skulls, locality unknown, collected by W. Rutledge; one incomplete skeleton, locality and collector unknown; one skeleton, locality unknown, collected by W. Rutledge.
- CAMBRIDGE, MASSACHUSETTS, *Museum of Comparative Zoology*: a mounted skin from Java; a skull from west Java, received in exchange from the Buitenzorg Museum.
- CLEVELAND, OHIO, *Western Reserve University, Laboratory of Anatomy*: a skull, probably from Sumatra, purchased from Gerrard, London, 1919.
- KUALA LUMPUR, *Federated Malay States Museum*: a mounted head-skin of a male, Pinjih valley, Perak, 1899; a mounted head-skin and separate skull of a female, Kuala Serukoi, Perak, April 16, 1924.
- LEYDEN, HOLLAND, *Leyden Museum*: a mounted skin (no other details available).
- LENINGRAD, UNION OF SOVIET SOCIALIST REPUBLICS, *Museum of Academy of Sciences*: 2 mounted adult male skins; adult and juvenile skull; skeleton (adult). Information from Mr. H. J. Coolidge, Jr.
- LONDON, ENGLAND, *British Museum*: (1) a mounted female shot by Mr. T. R. Hubback, from Tenasserim; (2) a mounted specimen of a young individual, probably the one mentioned by Selater (1876a) as having been captured in the Sundarbans near the Ray Mangal River, in May, 1874. It died at Calcutta twenty-four months later, and the skin, brought by the dealer Jamrach to London, was supposed to be the first brought from there to England; in the following year Selater (1877) mentions a second young one brought alive to London from the Sundarbans, a female, three feet high, and hornless. It died very soon after and became the subject of a paper by Garrod (1877) on the visceral anatomy of the species. (3) An adult skeleton from Java; (4) an imperfect skeleton from Sumatra, presumably the one mentioned by Gray (1867); (5) the skull with the record horn shot by Mr. Maxwell in Bantam, Java; (6) a skeleton of a half-grown individual; (7 and 8) two imperfect skulls of adults, without locality, from the Zoological Society. For the above list we are much indebted to Captain Dollman, Assistant Keeper, Department of Zoology, British Museum.
- Royal College of Surgeons*: eight skulls (four of them young), a mandible, and four molars. Of the skulls only two have a definite locality, namely, an adult from the Sundarbans, Bengal, 1859; and a very young one killed by the side of its mother, on the Malay coast, opposite Penang, in 1816. One of the skulls without definite locality is the type of *R. floweri* Gray. It is quite possible that the above information from Flower and Garson's Catalogue (1884) is not up to date.
- MELBOURNE, AUSTRALIA, *National Museum of Victoria*: one juvenile mounted specimen, no locality.
- PARIS, FRANCE, *National Museum of Natural History*: one mounted specimen, about three quarters grown; three skeletons and two skulls.
- STOCKHOLM, SWEDEN, *Riksmuseum*: Dr. Einar Lönnberg kindly informs us by letter that the Museum has an immature mounted skin, taken in Java, 1829.
- WASHINGTON, D. C., *United States National Museum*: one cranium from Java.
- In all, then, as a result of our inquiry, we have learned of but thirteen

mounted skins of the animal, three mounted heads, seventeen skeletons, and some thirty skulls, young and adult. It would be interesting to know how many other specimens there may be in the museums of the world, and to be informed more exactly concerning the present status of the living animal.

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TWO SPECIMENS OF RHINOCEROS SONDAICUS

UPPER: SPECIMEN FROM JAVA IN THE MUSEUM OF COMPARATIVE ZOOLOGY,
CAMBRIDGE, MASS.

LOWER: SPECIMEN FROM THE SUNDARBANS OF BENGAL, IN THE INDIAN MUSEUM,
CALCUTTA; THE LAST EXAMPLE KNOWN TO HAVE BEEN TAKEN
IN THAT REGION