

uninterrupted view of the whole enclosure. Even from here the ditch, overgrown by a profusion of plants, remains discreetly hidden. On the inner side, the ditch slopes at two points so that if an animal chances to fall in, it can easily climb out again. The plants around the enclosure have been arranged and selected to harmonize with the garden as a whole. The surface of the ground has been modelled and our rhinos are obviously perfectly content in their new enclosure.

For the hippos, three smaller open-air enclosures were fashioned with large pools fed from a former industrial canal that flows nearby. The scene, enlivened by an occasional hippo bobbing up out of the water and with drowsy hippos sleeping on the banks, gives the spectator a vivid impression of an African river landscape. The three pools lie on different levels and the water, in overflowing each basin, falls in a miniature cataract, itself becoming a cascading stream. As yet the hippos have never succeeded in crossing this barrier which would, to all appearances, be an almost negligible obstacle.

ASIAN RHINOS IN CAPTIVITY

By Richard J. Reynolds

THE Asiatic rhinoceroses are among the earth's rarest mammals and an attempt is made herein to list the ones that have been brought into captivity. Before beginning, the writer extends special thanks to Hans Jurg Kuhn of Heidelberg, Germany and S.F.C. Marvin L. Jones of the United States Army without whose co-operation this list would never have been possible. Mr Kuhn was particularly helpful in providing information on specimens in Europe before World War II, and Sgt. Jones contributed much information from his vast collection of zoo data.

The list is divided into three major sections, representing the three clearly defined species of Asian rhinos. Subdivisions are then made by geographical area of exhibition and the zoo, circus, menagerie, or locality having the captive rhino. When a period of exhibition is stated, the later date will be the date of death, unless the contrary is stated. Credits and sources of information are given by numbered reference to a bibliography at the conclusion.

I

GREAT INDIAN RHINOCEROS

Rhinoceros unicornis

This rhino, largest of all the Asian species, is by far the most commonly exhibited; and, eliminating obvious trades and exchanges, there appear to have

been ninety-four individual examples exhibited in captivity. This rhino has long been known to the western world, specimens having been shown as far back as the period of the Roman Empire. Drawings of single examples which arrived in Europe in the sixteenth and eighteenth centuries, became the classic impression of the rhinoceros for literature and science.

The Great Indian Rhino lives longer in captivity than any of the other species, as will be noted from the list.

The longevity record for a single specimen is forty-seven years and is held by a female which was shown in the Zoological Garden at Alipore, Calcutta, India for two years, after living forty-five years in a private menagerie. Two other examples lived at least forty years in captivity. A male was exhibited in London's Regent's Park Zoo forty years, four months and seventeen days; and another male is said to have lived forty years in the Zoological Gardens of Antwerp, Belgium. At present, the oldest captive specimen is a female which has been in the New York Zoological Park since 24th May 1923, almost thirty-nine years.

The Zoological Society of London holds the record for the number of specimens exhibited, having shown fifteen different examples, and the Zoological Garden at Alipore, Calcutta, India is next with at least six different examples. At this writing there appear to be twenty-five Great Indian Rhinos in captivity in sixteen different zoos and menageries.

Like all rhinos, the Great Indian does not breed readily in captivity, and there have only been five calves bred and born. The first was a stillbirth in the zoo at Alipore, Calcutta, India in 1925. In 1956 and in 1958 calves were born and successfully raised in the Basle, Switzerland Zoo. Births in 1957 and 1960 at The Zoological Society of London's Whipsnade Park were also successful.

AFRICA

GIZA ZOO, CAIRO, EGYPT

1. and 2. M and F, 1949-55. This pair died of poisoning in the early spring of 1955.¹

ASIA

ZOOLOGICAL GARDENS OF RANGOON, BURMA

1. A female named 'Rosie' was presented by the Maharaja of Nepal, date of arrival unknown. However, it was there as early as 1938 and was killed by the Japanese Army when they captured the City in March, 1942.²

ZOOLOGICAL GARDENS OF CEYLON, DEHIWALA, COLOMBO, CEYLON

A pair has been promised by the King and Queen of Nepal, but they have not arrived at the zoo.³

EARLY SPECIMENS IN CHINA

Armoured rhinos sometimes found their way into the hands of ancient Chinese emperors. In the T'sien-han-shu Annals, A.D. 300, it was said that the King of

Hwangchi sent a rhino to P'ing Wang-mang. Since Hwangchi is thought by some to have been located near Madras, this rhino may well have been *unicornis*. Other armoured rhinos which arrived in ancient China from Cambodia were either *unicornis* or *sondaicus*. In any event, transporting rhinos hundreds of miles by the primitive means available was certainly a remarkable feat, demonstrating the hardiness, at least, of the Indian rhino in captivity.⁴

ZOOLOGICAL GARDENS OF PEKING, CHINA

According to a news release around 1958, India's Prime Minister Nehru had offered a pair to the Chinese Government, but transportation difficulties prevented their being sent at that time. It is not known whether the Peking Zoo ever received these or other Indian rhinos.⁵

LALBAGH PARK MENAGERIE, BANGALORE, INDIA

1. When S. S. Flower visited this park in April 1913, he saw a curious empty cage formerly inhabited by a rhinoceros. This is the extent of the information relative to this rhino, and mere theory is its basis for being listed as *unicornis*. However, such would seem to be a reasonable presumption.⁶

BARRACKPORE, INDIA

1. and 2. A pair once lived in captivity in this city, fourteen miles north of Calcutta, and one of them is said to have lived there for forty-five years. While there is no definite authority for the proposition, it would certainly seem logical to presume that the female is the specimen that was acquired from a private menagerie by the Calcutta Zoo in 1878. In addition, S. S. Flower, after Sanyal in 1892, states that an example lived in captivity in the Bengal province for forty-seven years. Since Barrackpore is so close to Calcutta and both are in the said province, it is suggested that this reference is also to the Calcutta female.⁷

MUNICIPAL ZOOLOGICAL GARDENS OF BOMBAY, INDIA

1. M. 15th April 1952 – Still on Exhibit. Acquired by gift.
2. F. 12th May 1958 – 15th December 1958. Acquired by gift.⁸

ZOOLOGICAL GARDENS AT ALIPORE, CALCUTTA, INDIA

1. F. 1878 – May 1880. Acquired from a private menagerie where it had lived for forty-five years.
2. According to Hans Kuhn, an example was received in 1887, but it is not included in a list of rhinos compiled by zoo director, R. K. Lahiri.
3. F. February 1905 – January 1932. Received as a presentation, was bred in the zoo and produced a stillborn calf in 1925.
4. M. December 1905 – June 1930. Acquired by purchase; sire of the stillborn calf.
5. M. March 1932 – Still on Exhibit. Given to the zoo.
6. F. October 1932 – Still on Exhibit. Given to the zoo.
7. According to E. P. Gee, a female captured in 1938 was brought to the zoo where it remained until it was shipped to the National Zoological Park, Washington, D.C. It is not listed by Lahiri.⁹

ZOOLOGICAL GARDENS OF MADRAS, INDIA

1. M. 9th June 1953 – Still on Exhibit. A gift from the Assam Government.¹⁰

SRI CHAMARAJENDRA ZOOLOGICAL GARDENS, MYSORE, INDIA

1. F. 3rd July 1956 – Still on Exhibit. Received as a gift of the Government of Assam when around eighteen years old.¹¹

ZOOLOGICAL GARDENS OF TRIVANDRUM, INDIA

1. March 1878 – 16th June 1900. A rhino was exhibited at this zoo between these dates, and, according to S. S. Flower, is presumed to have been *unicornis*.¹²

TOKYO ZOOLOGICAL PARK SOCIETY, TAMA ZOOLOGICAL PARK, JAPAN

1. M. 10th November 1958 – Still on Exhibit. 'King of Tama'. Captured in the Kaziranga Game Sanctuary.
2. F. This specimen was captured in the Kaziranga Sanctuary in 1960 and was pregnant at the time. It is awaiting the birth of the calf before being shipped to Tokyo.¹³

KATMANDU, NEPAL

According to S. S. Flower, after B. H. Hodgson, 1834, a specimen was kept in this city for thirty-five years. No other particulars are known.¹⁴

EUROPE

EARLY SPECIMENS

1. An example is said to have been shown in Pompeii, Roman Empire, in 61 B.C. However, Sir William Gowers in his article, 'Early Rhinoceros In Europe', *Country Life*, 1st February 1952, Vol. 111, p. 288, states that he does not believe that *unicornis* was shown in Pompeii around this time and insinuates, at least, that *Diceros bicornis* was the only rhino known to the Romans. In contrast, George Jennison in his book *Animals For Show and Pleasure in Ancient Rome* (1937), p. 34, states that the writings of such ancients as Pliny, Strabo, and Diodorus, plainly indicate that the Indian Rhino was very familiar to the Mediterranean world, and that it may have been more common than the more delicate African Black Rhino, which was also well known to the Romans.¹⁵

2. A 'one-horned rhino', according to Pliny, was exhibited in the games of Rome given by the Emperor Pompey in the year 55 B.C. Incredible as it may seem, this rhino probably came to Rome via Egypt after having arrived there by an overland route from India.¹⁶

(Rhinos also were exhibited in Rome in 29 B.C. and during the reigns of Commodus A.D. 180–92, Caracalla A.D. 211–17, Heliogabalus A.D. 218–22, and Philip the Arabian A.D. 248. Some or all of these may have been *unicornis*.¹⁷

3. On 20th May 1515 an example arrived in Lisbon, Portugal, having been sent to King Emmanuel by Albuquerque, Governor General of India, as a gift from the King of Cambay. It was full grown in 1514 and was shipped from Goa in January 1515. In December 1515, Emmanuel shipped it to Rome as a gift to Pope Leo X. The ship bearing the rhino reached Marseilles in January 1516, where Francis I, King of France, inspected it.

In the Gulf of Genoa, the ship was sunk in a storm with the attendant loss of the rhino. From descriptions of this specimen, Albrecht Dürer made a now famous drawing which for centuries was the classic impression of a rhinoceros.¹⁸

4. An example, probably a female, reached England in 1684 and was seen by John Evelyn who recorded the event in his diary of 22nd October 1684. It was owned by East India merchants and toured England in 1684-5.¹⁹
5. In 1739, a young male was sent to London, England, by Humphrey Cole, head of the East India Company's factory at Patna. It is not believed to have lived very long.²⁰
6. In 1741, a female which had been captured in Bengal, was brought to England by Captain David Moyt. It was about two years old at the time. This rhino went to London for a short time, and within the same year to Amsterdam, Holland. It then went on to Nürnberg, Germany, where it seems to have been kept when not being toured by its owners. In 1747 it was painted by J. D. Meyer, and in 1748 a coin was struck in Nürnberg describing it. The owners toured much of Europe exhibiting it, having shown it in particular in Frankfurt, Germany in 1747 and in general in Holland, France, Germany and Austria. In St Germain in 1749, the famous French naturalist Buffon made a drawing of it which became the typical impression of a rhinoceros.²¹
7. According to Hans Kuhn, a specimen was exhibited by a menagerie in Frankfurt, Germany in 1816.²²

SCHONBRUNN ZOOLOGICAL GARDEN, VIENNA, AUSTRIA

1. F. 24th May 1856 – 23rd October 1894. Purchased from the dealer Jamrach in London for 4106 guld when about two years old. Sold to the zoo in Breslau, Germany.²³

ZOOLOGICAL GARDENS OF ANTWERP, BELGIUM

1. M. *circa* 1858 – 7th September 1898. This example was said to have lived approximately forty years in captivity.
2. A young specimen is said to have been in the zoo in 1871, and while it is not so stated, one would presume this to be a reference to a rhino other than the male which arrived in 1858. Certainly the latter would not be considered a 'young specimen' after having spent about thirteen years in the zoo. C. V. A. Peel writes that he saw an example when he visited the zoo between January and October 1902 and this may be the same one mentioned as having been there in 1871. Again, it may be a third rhino, but in any event the writer feels that there was at least one specimen exhibited between 1871 and 1902 besides the old male.
3. An example arrived in the early summer of 1907, through Carl Hagenbeck, Hamburg, Germany. It was one of four brought to Hamburg from Nepal in the spring of 1907. Sex and length of life in the zoo is unknown.²⁴

ZOOLOGICAL SOCIETY OF LONDON, ENGLAND (REGENT'S PARK ZOO AND WHIPSNADE ZOOLOGICAL PARK)

1. M. 20th May 1834 – 19th September 1849. Came from India and about four years old on arrival.
2. F. 17th July 1850 – 14th December 1873. Purchased by the Society.
3. M. 25th July 1864 – 12th December 1904. 'Jim'. Arrived from Calcutta through Mr A. Grote. Lived at Regent's Park for forty years, four months and seventeen days.

4. F. 25th July 1864 – 20th June 1865. Acquired along with 'Jim'. Sent to the Jardin des Plantes, Paris, France, in exchange for the African elephant 'Jumbo', which subsequently became famous as an attraction with the Barnum & Bailey Circus in the United States.
5. M. 25th December 1886 – 30th December 1911. Presented by H. H. Maharaja of Cooch Behar.
6. M. 9th June 1906 – 4th January 1924. Presented to the zoo.
7. M. 21st May 1912 – 2nd November 1921. Came from Nepal and was presented to the zoo by King Edward VII.
8. F. 7th April 1922 – 27th April 1926. Presented to the zoo as a young specimen. Died of sarcoma of the heart and lung.
9. M. 13th December 1924 – 21st November 1941. Presented to the zoo by the Maharaja of Nepal. Died from tuberculosis.
10. M. 29th April 1933 – 15th March 1945. 'Hush'. Presented to King George V by the Maharaja of Nepal. It came from the Terai of Nepal and was about one year old on arrival. In the summer of 1934, it and the female 'Hash' were placed on exhibit at the new Whipsnade Park.
11. F. 3rd July 1933 – 18th November 1938. 'Hash'. Deposited at Regent's Park by King George V after having come from Nepal. At Whipsnade it was injured by the male 'Hush' and was taken back to Regent's Park where it was destroyed.
12. M. 7th August 1947 – 7th March 1961 'Mohan'. Captured in Assam's Kaziranga Game Sanctuary in February 1947 together with a female which later died from septicaemia. Purchased by the society and exhibited at the Whipsnade Park.
13. F. 16th July 1952 – Still on Exhibit. 'Mohini'. Captured in Kaziranga on 12th February 1952, purchased by the society, and exhibited at Whipsnade. Bred with 'Mohan' to produce two calves.
14. F. 29th October 1957 – 23rd June 1959. 'Mohinija'. Born in Whipsnade Park. Sold to the Milwaukee Zoo, Wisconsin, USA.
15. M. 19th August 1960 – 'Manik'. Born in Whipsnade Park and still on Exhibit. Born of 'Mohan' and 'Mohini'.²⁵

BELLE VUE ZOOLOGICAL GARDENS, MANCHESTER, ENGLAND

1. M. 20th June 1876 – 1904. Purchased by the zoo.
2. An example was purchased in May 1907 from Carl Hagenbeck and was one of the four imported by him from Nepal in the spring of 1907. Its date of death is unknown to the writer. However, some idea of the length of its life at the zoo might be gained from the fact that while it is mentioned in the guide book of 1912, it is not mentioned in that of 1923.²⁶

MUNICIPAL ZOO AT MARSEILLE, FRANCE

1. A specimen is said to have lived for eleven years in this small municipally-owned zoo. It is known to have been there in 1861–2. However, by 1873 the zoo had been discontinued, and its disposition, thereupon, is unknown.²⁷

JARDIN DES PLANTES, PARIS, FRANCE

1. An example was acquired in 1794 from the Palais de Versailles when the Royal

Zoo was closed. According to S. S. Flower an Indian Rhino lived in the zoo in the early nineteenth century and lived in captivity a total of twenty-five years. If the Flower reference is to the example from the Royal Zoo, this would mean that the rhino died at the zoo in 1804, since the Royal Zoo acquired it in 1779.²⁸

2. A female was acquired in 1865 from the Zoological Society of London in exchange for the famous African elephant 'Jumbo'. Although the writer does not know the date of death of this rhino, it was still living in the old rotunda of the zoo in 1873.²⁹

VINCENNES ZOOLOGICAL PARK, PARIS, FRANCE

1. M. 7th April 1934 – 1960. Acquired from Mr Delacour.³⁰

ROYAL ZOOLOGICAL GARDEN AT VERSAILLES, FRANCE

1. 1779–94. This example was presented to King Louis XVI. Given to the Jardin des Plantes in 1794 along with the entire collection of the Palais de Versailles.³¹

LOUIS RUHE, WILD ANIMAL DEALER, ALFELD, GERMANY

1. According to Dr Ludwig Heck, a young example was brought into the animal market by the Ruhe firm in 1910. It is not known whether this rhino was kept by Ruhe at his receiving and distributing centre at Alfeld or whether he sold it to another zoo or circus.³²

ZOOLOGICAL GARDENS OF (WEST) BERLIN, GERMANY

1. M. 19th September 1872 – 26th October 1909. Purchased, together with the female, for 8,000 thalers when about three years old.
2. F. 19th September 1872 – 9th April 1896. Sold to the zoo in Frankfurt am Main, Germany.³³
3. A female was purchased in 1874 from the dealer Jamrach. Its date of death, however, is unknown. The true identity of this rhino has been the subject of considerable controversy, which merits some discussion. It was captured in Manipur, India and brought by Jamrach to London where zoologists identified it as a Javan Rhino, *Rhinoceros sondaicus*. Jamrach, however, was not satisfied and published an account of it in October 1874, naming it *Rhinoceros jamrachii*. It was then sent to Berlin and exhibited as a Javan Rhino. In 1879 P. L. Sclater of London's Regent's Park Zoo saw it and positively identified it as *unicornis*. After this, according to Kuhn, the Berlin Zoo changed its view and dropped the Javan Rhino identification. Its identity is still not certain, however, because B. Gaebler, writing in *Der Zoologische Garten*, Vol 24, 1883, pp. 212 and 240, says that in December 1882, he saw a Javan Rhino in the Berlin Zoo. Thus it would seem that the *sondaicus* label was still on the cage. In addition Dr. Ludwig Heck, director of the Berlin Zoo from 1888 to 1932, wrote in 1929 and again in 1941 that the rhino was a Javan. Dr Heinz G. Klös, the present zoo director, relies upon Dr Heck for the position that this was a Javan Rhino. In contrast, Hans Kuhn feels that the identification by Sclater is definitive since the latter had both species at Regent's Park and certainly knew them well. In all probability, this issue will not be resolved until the remains of the rhino have been found and examined. In the

meantime, your writer is inclined to agree with Kuhn that this specimen was a Great Indian Rhino.³⁴

4. M. 22nd September 1959 – Still on Exhibit. 'Arjun'. Captured in the Kaziranga preserve in January 1959.³⁵

ZOOLOGICAL GARDEN OF Breslau, Germany (now Wrocław, Poland)

- I. F. 23rd October 1894 – 14th November 1895. Purchased from Vienna's Schönbrunn menagerie. For several months preceding its death it could not rise but had a good appetite until the end.³⁶

ZOOLOGICAL GARDENS IN COLOGNE, Germany

- I. F. 26th April 1872 – 1900.³⁷

ZOOLOGICAL GARDENS OF DRESDEN, Germany

- I. M. 4th February 1873 – 1892.³⁸

ZOOLOGICAL GARDENS OF FRANKFURT AM MAIN, Germany

- I. F. 10th April 1896 – 24th August 1909. Purchased from the Berlin Zoo. Now in the Senckenburg Museum which entered into an agreement with the zoo before its death to acquire the remains.³⁹

ZOOLOGICAL GARDENS OF HAMBURG, Germany*

- I. M. 14th March 1870 – 12th July 1900. 'Begum'. Captured in the delta of the Bramaputra River, and arrived after a journey of thirty-five days by sea from Calcutta to Marseilles and five days by train to Hamburg. S. S. Flower says this rhino was acquired in 1871, but the exactness of the 1870 date seems more convincing. This rhino was killed because of a wound on its head.⁴⁰

CARL HAGENBECK, WILD ANIMAL DEALER, HAMBURG, Germany

Note: This list does not contain any rhinos definitely known to have been exhibited by Hagenbeck at his zoo in the Hamburg suburb of Stellingen.

1. In 1871 a seven- or eight- year-old female was obtained in London from the dealer Jamrach. The writer does not know what disposition was made of this rhino.⁴¹
- 2 & 3. F. C. Noll, writing in the 14th January 1873 issue of *Der Zoologische Garten*, states that the Berlin zoo acquired its pair in 1872 from Hagenbeck.⁴²
- 4 & 5. In the same article, Noll states that another pair was in Hagenbeck's shipping and receiving quarters as recent as 'four weeks past' but that it is not known to which zoo they had been sent. This would certainly imply that these rhinos were in Hagenbeck's quarters around December 1872. In contrast, Hans Kuhn says that he has a vague reference to the effect that Hagenbeck had no Indian Rhino in 1872.⁴³
- 6 & 7. Hans Kuhn says that he has a note to the effect that Hagenbeck acquired two from Jamrach in 1873. However, both Mr Kuhn and your writer agree that the matter of old Hagenbeck rhinos is confusing at best so that the 1873 reference might well be to one of the pairs mentioned earlier. Giving the famous dealer the benefit of the doubt, the 1873 examples are listed separately.⁴⁴
- 8-11. In the spring of 1907, four examples were imported from Nepal. They were seen in April by S. S. Flower at Port Said, Egypt on their way to Hamburg in the custody of Hagenbeck's agent Johannsen. One was sold to the Antwerp Zoo, another to the Belle Vue Gardens, Manchester, and a third to New York's Bronx

* The Zoological Gardens of Hamburg went out of existence in 1930.

Zoo. All available evidence suggests that the fourth was sold to the Barnum & Bailey Circus and travelled to the United States along with the example for the Bronx.⁴⁶

CARL HAGENBECK'S TIERPARK, HAMBURG-STELLINGEN, GERMANY

1. F. 1930-55. 'Nepali'. This was the first Indian rhino known to have been exhibited at the Tierpark which was opened on 7th May 1907. This specimen survived the frightful air raids of 25th July 1943, although it was severely burned by phosphorus incendiary bombs.
2. F. 11th June 1957 - Still on Exhibit.⁴⁶
3. According to Hans Kuhn, a pair was at Stellingen in August 1960, and while it was not certain that this is the same female as No. 2, above, and that a male has been added as a mate for her, such would seem to be a reasonable presumption.⁴⁷

NATURA ARTIS MAGISTRA, AMSTERDAM, HOLLAND

1. An example was purchased on 19th June 1864 from E. Fronsaeq of Bordeaux, France for 4,710 Gulden. The exact length of its life is unknown, but it was still living in 1873. According to Kuhn, there was no *unicornis* at the Natura Artis Magistra in 1901.⁴⁷

THE ROYAL ZOOLOGICAL SOCIETY OF IRELAND, PHOENIX PARK, DUBLIN

1. M. 3rd August 1864 - 6th April 1865. This specimen was sent to Europe along with the pair which was received by the London Zoo on 25th July 1864.⁴⁸

ZOOLOGICAL GARDENS OF ROME, ITALY

1. M. 5th September 1951 - Still on Exhibit. Captured in the Kaziranga Sanctuary and imported by the Molinar firm of Turin.⁴⁹

ZOOLOGICAL GARDENS OF MOSCOW, RUSSIA

1. A specimen was exhibited around 1865.⁵⁰

ZOOLOGICAL GARDENS AT ST PETERSBURG (NOW LENINGRAD), RUSSIA

1. An example was on exhibit on 1st January 1882. The writer has no other details.⁵¹

ZOOLOGICAL GARDENS OF BASLE, SWITZERLAND

1. M. 30th May 1951 - Still on Exhibit. 'Gadadhar'. Captured in the Kaziranga Sanctuary by Peter Ryhiner.
2. F. 8th July 1952 - Still on Exhibit. 'Joymothi'. Also captured in Kaziranga by Ryhiner.
3. M. 14th September 1956 - June 1959. 'Rudra'. Born in the zoo. This was the first successful birth of an Indian Rhino bred in captivity. Sold to the Milwaukee, Wisconsin Zoo, USA.
4. F. 17th August 1958 - Born in the zoo and Still on Exhibit. 'Moola'.⁵²

UNITED STATES OF AMERICA

Note: During the nineteenth century and into the early decades of the twentieth, the most common type of wild animal exhibition in the USA was the travelling menagerie and circus. During this period the zoological garden was largely unknown in America, only a few large cities having collections worthy of note and this primarily toward the turn of the century. Consequently, it is not sur-

prising that the first rhinos to appear in American zoos were either purchased or borrowed from travelling shows. For this reason, captive rhinos in America are treated throughout the list in two sections.

(A) Travelling Menageries and Circuses

P. T. BARNUM'S GREAT ROMAN HIPPODROME

1. A male was sold by Barnum to the Philadelphia Zoo in 1875. It is not known how long the rhino was exhibited by Barnum's circus.⁵³

BARNUM & BAILEY'S GREATEST SHOW ON EARTH

1. M. 1907-19. 'Old Bill'. All evidence points to the conclusion that this rhino was the fourth example imported by Carl Hagenbeck from Nepal in the spring of 1907. Although the Ringling brothers purchased control of this circus in 1907 the rhino apparently travelled with the Barnum & Bailey Circus until it was combined with the Ringling Circus in 1919.⁵⁴

PEALE'S MUSEUM, NEW YORK, NEW YORK

1. An example was shown there on 16th October 1826. This was the first rhino known to have been exhibited in the Western Hemisphere. The same example was shown at 350 Broadway, New York, in June and July 1829.⁵⁵

DAN RICE CIRCUS

1. The versatile showman Dan Rice owned an example which was tame enough to be led around the tented arena by means of a rope through a ring in its nose. It was exhibited as early as 17th May 1858. In August 1861 it escaped when a riverboat transporting the circus on the Mississippi River was wrecked. For several days the rhino was free along the banks of the river.⁵⁶

RINGLING BROS. AND BARNUM & BAILEY COMBINED SHOWS

1. M. 1919 - 28th September 1926. 'Old Bill'. Acquired from Barnum & Bailey. Died while the circus was playing an engagement in Fort Worth, Texas.⁵⁷

JOHN ROBINSON CIRCUS

1. An example was owned in at least 1877, because on 14th April of that year it was placed on deposit at the Cincinnati Zoo. By 1881 it may have been returned to the circus for it was not in the zoo that year. No other data are known.⁵⁸

WASHINGTON GARDENS, TREMONT STREET, BOSTON, MASSACHUSETTS

THE ZOOLOGICAL INSTITUTE, NEW YORK, NEW YORK

1. On 9th May 1830 a young male arrived in Boston. It was captured at the foot of the Himalaya Mountains near a branch of the Ganges River when around three months old. It was purchased in January 1830 in Calcutta and was shown in the Washington Gardens on 14th May 1830. It was then owned by the Zoological Institute and it was shown in that firm's permanent quarters at 37 Bowery, New York during the winter. In the summer it was exhibited with travelling menageries, appearing with the American National Caravan in 1831, the Association's Menagerie in 1835, and Purdy, Welch, Macomber & Company's Magnificent Collection of Zoological and Ornithological Subjects from the Zoological Institute in 1837.⁵⁹

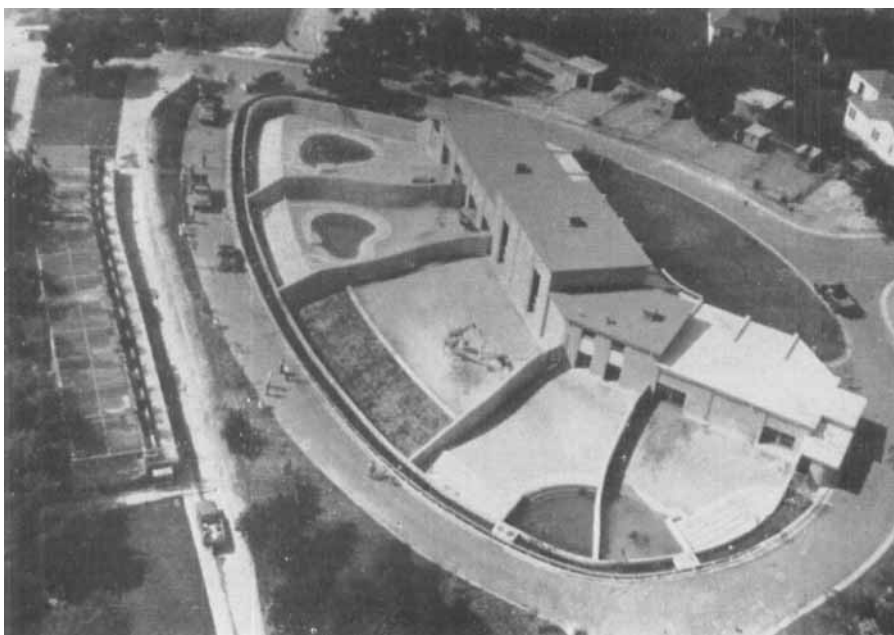


Plate I

Aerial view of the Large Mammal Building at Dallas Zoo (*see pp. 1-2*). On the far left is the Elephant Area with its pool, and to the right are the enclosures for the Black Rhinos, Reticulated Giraffes, Pigmy Hippos and River Hippos, in that order. All enclosures are moated and all have pools, except for that of the giraffes. The spectators' gallery is 18 ft. wide with a concrete slatted roof. The animals are separated from the visitors by a glass wall.

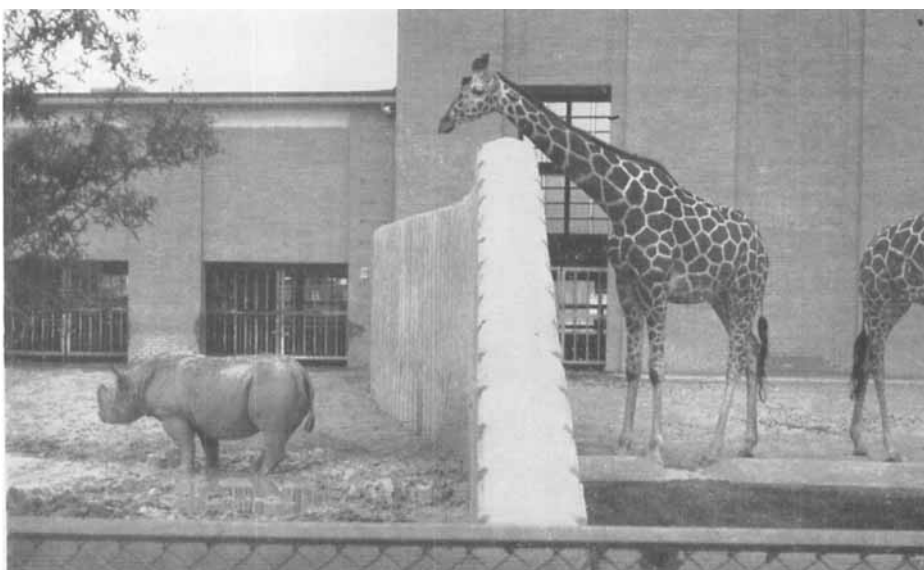


Plate II

Enclosures for Black Rhino and Reticulated Giraffe at the Dallas Zoo. The different species are separated by a concrete wall 1 ft. thick. (*See pp. 1-2.*)



Plate III

Reticulated Giraffe Enclosure at the Dallas Zoo. The giraffes are kept out of the moat by a low 'stumbling mound' of concrete. The floor of the paddock is at the same level as the spectators' walk. In this way the relative height of the giraffe can be realized. (See pp. 1-2.)



Plate IV

'Stockade' for young elephants at the San Diego Zoo Children's Zoo. (See p. 2).

San Diego Zoo Photo



Plate V

View from the gardeners' service passage showing the indoor accommodation for rhinos at Chester Zoo's new Pachyderm House. (See pp. 3-5.)



Plate VI

Enclosures for Malayan Tapir and Black Rhino at Chester Zoo's new Pachyderm House. (See pp. 3-5.)



Plate VII

Elephant Section at Chester Zoo's new Pachyderm House. (See pp. 3-5.)



Plate VIII

Paul Steinemann, Basle Zoo

Outdoor Enclosure for Great Indian Rhinos at Basle Zoo. The new Rhino House can be seen in the background. (See pp. 15-17.)

(B) *Zoological Gardens*

NATIONAL ZOOLOGICAL PARK, WASHINGTON, D. C.

1. M. 8th July 1939–59. 'Gunda'. Captured in Assam, Died in January 1959.
2. M. 26th May 1960 – Still on Exhibit. 'Tarun'. Acquired as a gift of the Indian government and shipped by air from India to the USA.

Note: A female captured in 1938, which according to E. P. Gee was kept for a time at the Alipore Gardens, was sent to the Washington Zoo as a mate for 'Gunda', but died on board ship three days out of the port of New Orleans.⁶⁰

CHICAGO ZOOLOGICAL PARK, BROOKFIELD, ILLINOIS

1. M. 1948 – Still on Exhibit. 'Kashi Ram'.
2. F. 1948 – Still on Exhibit. 'Kamala Rani'. This pair was captured in Kaziranga for the society by the George B. Dryden Expedition.⁶¹

ST LOUIS ZOOLOGICAL PARK, ST LOUIS, MISSOURI

1. M. 19th January 1934 – Still on Exhibit. 'Harry'. Purchased from Frank Buck who captured it in Nepal.⁶²

NEW YORK ZOOLOGICAL PARK, NEW YORK, NEW YORK

1. M. 23rd July 1907 – 27th August 1919. 'Mogul'. Purchased from Carl Hagenbeck, who imported it, together with three others, from Nepal in spring of 1907.
2. F. 24th May 1923 – Still on Exhibit. 'Bessie'. Purchased from Frank Buck who captured her in Nepal along with a female which he sold to the Philadelphia Zoo.⁶³

CINCINNATI ZOOLOGICAL PARK, CINCINNATI, OHIO

1. On 14th April 1877 an example was placed on deposit by John Robinson, Esq., owner of the John Robinson Circus, which maintained its winter quarters in Cincinnati. It is not known exactly how long this rhino lived at the zoo but it was not on exhibit in 1881, having either died or been returned to John Robinson by the said date.⁶⁴
2. According to Sol A. Stephan, a 2½-year-old example was purchased from Hagenbeck Brothers on 9th April 1923 for \$10,000. However, the zoo at present has no records to indicate how long this rhino lived in the zoo.⁶⁵

PHILADELPHIA ZOOLOGICAL GARDEN, PHILADELPHIA, PENNSYLVANIA

1. M. 13th March 1875 – 3rd January 1901. 'Pete'. Purchased from P. T. Barnum's Great Roman Hippodrome.
2. F. 24th May 1923 – 14th April 1943. 'Peggy'. Purchased from Frank Buck who captured her in Nepal.
3. F. 17th June 1953 – Still on Exhibit. 'Kanaklota'. Purchased from Peter Ryhiner, who captured her in the Kaziranga Sanctuary.
4. M. 14th September 1955 – Still on Exhibit. 'Kanakbala'. Also purchased from Ryhiner.⁶⁶

WASHINGTON PARK ZOOLOGICAL GARDEN, MILWAUKEE, WISCONSIN

1. M. 20th July 1959 – Still on Exhibit. 'Rudra'. Purchased from the Zoological Gardens of Basel.

2. F. 20th July 1959 – Still on Exhibit. 'Mohinja'. Purchased from London's Whip-snade Zoo. Both rhinos travelled to Milwaukee via the St Lawrence seaway.⁶⁷

FRANK BUCK, WILD ANIMAL DEALER

1. A female was captured in Nepal and sold to the Bronx Zoo in New York City in 1923.
2. Another female, also captured in Nepal, was sold to the Philadelphia Zoo in 1923.
3. A male captured in Nepal was sold to the St. Louis Zoo in 1934.⁶⁸
4. A Frank Buck movie made in the 1930's shows the capture of a young example which had been attacked by a tiger and so badly mauled that one of its ears had to be cut off. Buck tried to sell it to the Brookfield Zoo in 1935, but the zoo did not want the maimed animal. Its disposition is unknown.⁶⁹

FOOTNOTES

1. Gee, E. P., Upper Shillong, Assam, 14th May 1960; Kuhn, Hans Heidelberg, Germany, 10th August 1959, after Street, *Whipsnade*, p. 77.
2. Thein, Kyaw, Rangoon, Burma, 11th October 1960.
3. Weinman, A. N., Colombo, Ceylon, 23rd February 1960.
4. Wendt, Herbert, *Out of Noah's Ark*, Cambridge, 1959, pp. 45–6.
5. Anonymous, c. 1958.
6. Flower, S. S., *Report on a Zoological Mission to India* In 1913, 1914, p. 40.
7. Flower, S. S., 'Contributions to Our Knowledge of the Duration of Life in Vertebrate Animals', *P.Z.S.L.*, 1931, pp. 145, 202–3; Kuhn, Hans, Heidelberg, Germany, 10th August 1959, after Blyth in *Brehm*, 4th ed., XII. p. 620.
8. Municipal Zoological Gardens of Bombay, India, 6th October 1959.
9. Gee, E. P., supra; Kuhn, Hans, 10th August 1959; Lahiri, R. K. Calcutta, 6th September 1958.
10. The Assistant Health Officer, Corporation of Madras, 25th September 1959.
11. Mari Gowda, M. H., Mysore, India, 26th October 1960.
12. Flower, S. S., *P.Z.S.L.*, 1931, pp. 202–3, after Ferguson, H. S., 1899–1900, p. 18.
13. *Animals and Zoo*, Tokyo, Vol. 11, No. 2, February 1959; Gee, E. P. supra; Jones, Marvin, L., Nullo-ri, Korea, 26th September 1960.
14. Flower, S. S., *P.Z.S.L.* 1931, pp. 202–3.
15. Noll, F. C., 'Die Rhinoceros Arten,' *Der Zoologische Garten*, 14th January 1873.
16. Jennison, George, *Animals For Show and Pleasure in Ancient Rome* (Manchester, 1937), p. 54.
17. *Ibid.* pp. 29, 87, 90, 91, and 92.
18. Gowers, Sir William, 'Early Rhinoceros In Europe'. *Country Life*, 1st February 1952, Vol. 111, p. 288.
19. *Ibid.*
20. *Ibid.*
21. Gee, E. P., *Country Life*, 8th August 1952, Vol. 112, p. 401, and Gowers, Sir William, supra.
22. Kuhn, Hans, 10th August 1959.
23. Fiedler, Walter, Vienna, 21st November 1959 and Kuhn, Hans, 10th August 1959, both from Antonius, Otto, *Der Zool. Gart.* February 1937, Vol. 9, Heft 1/2, p. 20.
24. Flower, S. S., *P.Z.S.L.* 1931, pp. 202–3; Flower, S. S., *Notes On Zoological Collections Visited In Europe*, 1907, Cairo, pp. 11–12, Kuhn, Hans, 10th August 1959; Noll, F. C. supra; Peel, C. V. A., *The Zoological Gardens of Europe*, 1903, pp. 60–1.
25. Kuhn, Hans, 10th August 1959 from *D. Zool. Gart.* 1908, p. 1, from *P.Z.S.L.*, 1834, p. 41, 1886, p. 697, 1887, p. 1, 1904, p. 156, 1906, p. 759, 1925, p. 327, 1933, pp. 153 and 1119, 1939, p. 290, Vol. 117, p. 792, and from *Zoo Life*, Vol. 2, p. 86, Vol. 3, p. 107, and Vol. 7, p. 53; Matthews, L. Harrison, London, 8th July 1958.
26. Flower, S. S., *P.Z.S.L.*, 1931, pp. 202–3; Flower, S. S., *Report On Mission To Europe*, 1905, Cairo, p. 26, Flower, S. S., *Notes on Zoological Collections Visited in Europe*, 1907, p. 32; Iles, Gerald, Manchester, 24th October 1960; Peel, C. V. A., supra, p. 207.
27. Kuhn, Hans, 10th August 1959, from *D. Zool. Gart.* 1862, p. 146, and *Revue et Magaz. de Zoologie*, Janvier, 1861; Noll, F. C., supra.
28. Flower, S. S., *P.Z.S.L.* 1931, pp. 202–3

- after E. Oustalet, 1900, pp. 378-9; Peel, C. V. A., supra, p. 2.
29. Noll, F. C., supra.
 30. Jones, Marvin L., Arlington, Virginia, 10th April 1961; Rinjard, Vre. J., Paris, 26th September 1958.
 31. Noll, F. C., supra; Peel, C. V. A., supra.
 32. Kuhn, Hans, 8th September 1959, from Heck, L. *Brehm's Tierleben* 4th ed., Vol. 12, p. 620.
 33. Klös, Heinz-Georg, Berlin, 12th August 1958 and 23rd January 1961; Kuhn, Hans from *D. Zool. Gart.* 1894, p. 141 and *P.Z.S.L.* 1880 p. 420.
 34. Barbour and Allen, 'The Lesser One-horned Rhinoceros,' *Journal of Mammalogy*, Vol. 13, No. 2, 11th May, 1932; Heck, Ludwig, *Geschichte des Zoologischen Gartens zu Berlin* 1841-1929, p. 36; Heck, Ludwig, 'Heiter-ernsten Erinnerungen an Tiergartner', *D. Zool. Gart.*, N. F., Vol. XII, 1940-1, p. 230; Klös, Heinz-Georg, supra; Kuhn, Hans 10th and 12th August 1959 from B. Gaebler in *D. Zool. Gart.* 1883, p. 212 and 240, *P.Z.S.L.*, 1880, p. 420, and *Transact. Zool. Soc. London*, IX p. 650.
 35. Klös, Heinz-Georg, 24th January 1961; Jones, Marvin L., Ft. Belvoir, Virginia, 17th November 1959.
 36. Kuhn, Hans, 10th August 1959, from *D. Zool. Gart* 1896, p. 280; Lukaszewicz, K., Wroclaw, Poland, 7th July 1960.
 37. Kuhn, Hans, 10th August 1959, from *D. Zool. Gart.* 1892, 1893, p. 331, 1897 p. 318, and 1901, p. 200.
 38. Ullrich, Wolfgang, Dresden, Germany, 30th June 1960.
 39. Jones, Marvin L., Arlington, Va., 24th April 1961, from 41 *Bericht, de Senckenbergischen Naturforschenden Gesellschaft in Frankfurt am Main*, Heft 3, Juni 1910, p. 161.
 40. Flower, S. S., *P.Z.S.L.* 1931 pp. 202-3; Kuhn, Hans, 10th August 1959, from *D. Zool. Gart.*, 1879 p. 110, 1893, p. 281, and 1901, p. 200; Noll, F. C., supra.
 41. Hagenbeck, Carl, *Beasts and Men*, London, 1909, p. 165.
 42. Noll, F. C., supra.
 43. Kuhn, Hans, 8th September 1959; Noll, F. C., supra.
 44. Kuhn, Hans, 10th August 1959.
 45. Davall, Grace, New York, 27th February 1961; Flower, S. S. *Notes on Zoological Collections Visited in Europe*, 1907, pp. 11, 12, and 31; and Heck, L. in *Brehm's Tierleben* 4th Ed., Vol. 12, p. 620. See footnote (54) infra.
 46. Hagenbeck, Carl Heinrich, Hamburg, 2nd September 1958; Hagenbeck, Lorenz, *Animals Are My Life*, London, 1956, p. 220; Jones, Marvin L., Fort Belvoir, Va., 5th November 1959.
 47. Kuhn, Hans, 10th August, 1959, Noll, F. C., supra.
 48. Bartlett, A. D., *Wild Animals In Captivity*, London, 1899, p. 67; Murphy, E. T., Dublin, Ireland, 19th May 1959.
 49. Bronzini, Ermanno, Rome, Italy, 14th October 1958 and 18th August 1959.
 50. Kuhn, Hans, 10th August 1959, after Usuff in *Preroda* I. pp. 362-79.
 51. Kuhn, Hans, 10th August 1959, from *D. Zool. Gart.* 1883, p. 280.
 52. Lang, E. M., Basel, 13th March 1958; Ulmer, Frederick, A., 'On Breeding Rhinoceroses', *America's First Zoo*. Vol. 10, No. 3, September 1958; Wackernagel, H., Basel, 7th April and 6th June 1959, and 19th September 1960. See footnote (67) infra.
 53. Ulmer, Frederick A., Jr., 'The Golden Age of Zoo Exhibits', *America's First Zoo*, Vol. 11, No. 1, March 1959, p. 6.
 54. Anonymous, *Billboard*, Chicago, 1st January 1927, p. 66; *Fort Worth Star-Telegram*, 29th and 30th September 1926; Parkinson, Bob, Cambridge, Illinois, 11th November 1960, after Barnum & Bailey route book 1907, Woodcock, William, Hugo, Oklahoma, 7th June 1960.
 55. Vail, R. W. G., *Random Notes on the History of the Early American Circus*, Barre, Mass., 1956, p. 21.
 56. Anonymous, 'The Mississippi Once Had A Rhino In It', *Tri-Weekly Democrat*, La-Crosse, Wis., 21st-30th August 1861 in *White Tops*, December 1946; Chinduhl, George L., *A History of The Circus In America*, Caldwell, Idaho, 1959, p. 64; Farley, Leonard V., San Antonio, Texas, 2nd September 1959.
 57. See footnote (54), supra.
 58. Heusser, J. F., Cincinnati, Ohio, 27th January 1961.
 59. Chindahl, George L., supra, p. 38; Durant, John and Alice, *Pictorial History of the American Circus*, New York, 1957, pp. 27 and 31; Vail, R. W. G., supra, pp. 21 and 38.
 60. Gee, E. P., 14th May, 1960; Mann, Wm. M., Washington, 2nd September 1958; Reed, Theodore H., Washington, D.C., 5th September 1958; and *Washington Post* 26th and 27th May 1960.
 61. Graham, Ralph, Brookfield, Ill., 23rd July 1958.

62. Buck, Frank, *Jungle Animals*, New York, 1945, p. 13; Vierheller, George, St Louis, 10th April 1959.
63. Buck, Frank, *Bring 'Em Back Alive*, New York, 1930, pp. 48-90; Davall, Grace, New York, 19th March and 29th April 1958, and 27th February 1961.
64. Heusser, J. F., *supra*.
65. Heusser, J. F., *supra*; Stephan, Sol A., *Cincinnati Zoo Guide*, 1924, p. 89.
66. Ulmer, Frederick A., Jr., 'The Golden Age of Zoo Exhibits', *America's First Zoo*, Vol. 11, March 1959, p. 6; Cridland, M., Philadelphia, 11th March 1958; Ulmer, Frederick A., Jr., 'On Breeding Rhinoceroses', *America's First Zoo*, Vol. 10, No. 3 September, 1958.
67. Anonymous, 1959; Speidel, George, Milwaukee, 8th April 1959.
68. See footnotes 62 and 63 *supra*.
69. The writer recalls seeing the movie but does not have its name or the date of its production. See also, *The Brookfield Zoo*, 1934-1954, Chicago, 1954, p. 40.
70. Kuhn, Hans, 18th June 1961.

II

JAVAN RHINOCEROS

Rhinoceros sondaicus

THIS rhino, on the very verge of extinction, is the rarest of the rhinos and has been exhibited less than any other species.

During the seventeenth and eighteenth centuries and the early part of the nineteenth, it was sometimes kept in private menageries or as a pet by Javanese nobles and princes, indicating that it makes a very docile captive. Apart from those in Java, only nine individual examples are definitely known to have been in captivity, including at least one which died *en route* to Europe. However, since so very few Javan Rhinos are known to have been exhibited, your writer takes the liberty of mentioning others, the references to which are vague at best, in the hope that further information may be obtained thereby.

The longevity record is held by a male which lived in the Zoological Gardens of Adelaide, Australia for approximately twenty-one years. Curiously, this rhino was exhibited as a Great Indian throughout its life at the zoo, a fact which calls to mind the confusion over the identity of the rhino in Berlin and reminds one of the striking similarity in outward appearance between *sondaicus* and *unicornis*.

Other than several vague references, there is no definite record of a Javan Rhino having been in captivity since the aforesaid male died in Adelaide in 1907. The Javan Rhino is not known to have bred in captivity.

ASIA

ZOOLOGICAL GARDEN AT ALIPORE, CALCUTTA, INDIA

1. F. 1887-92. Acquired as a presentation from the private menagerie of the King of Oudh, India.¹

CALCUTTA, INDIA

1. In May 1875 an example was captured in the Sunderbunds near the Ray Mangal River and was shipped immediately to Calcutta where it lived only twenty-four

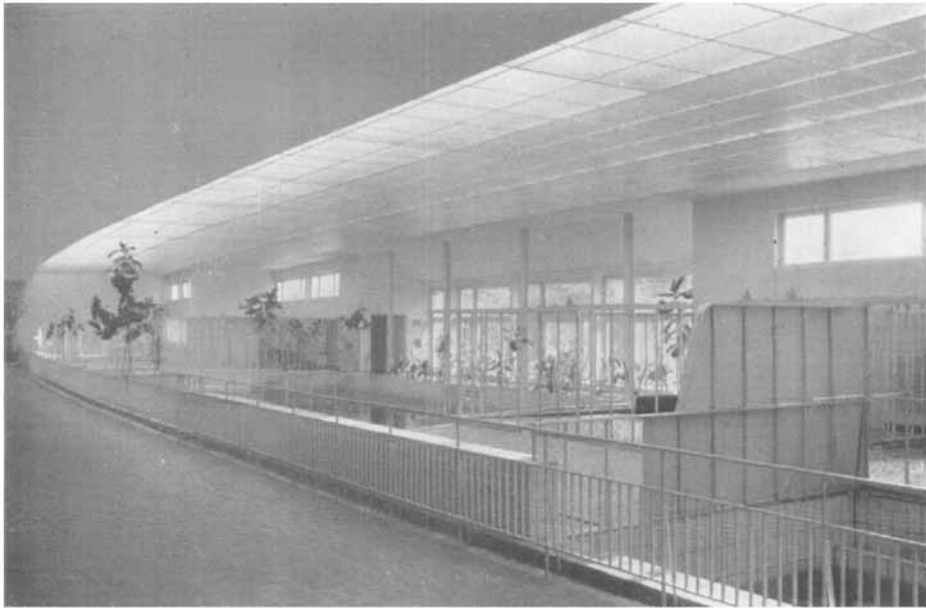


Plate IX
Interior of the new Hippo House at West Berlin Zoo. (See pp. 45-74.)

A. C. Lasberg



Plate X
Interior of the new Elephant House at West Berlin Zoo. (See pp. 45-47.)

A. C. Lasberg



Plate XI

Bob McIntyre

Interior of the new Hippo House at Cheyenne Mountain Zoological Park. (See pp. 48-49.)



Plate XII

Bob McIntyre

New Hippo House and Enclosure at Cheyenne Mountain Zoological Park. (See pp. 48-49.)



Plate XIII

San Diego Zoo Photo

Hippo Pools at the San Diego Zoo, showing the curtain wall concealing the sleeping quarters. (See p. 49.)



Plate XIV

San Diego Zoo Photo

View of the new Hippo Pools at the San Diego Zoo. (See pp. 49.)

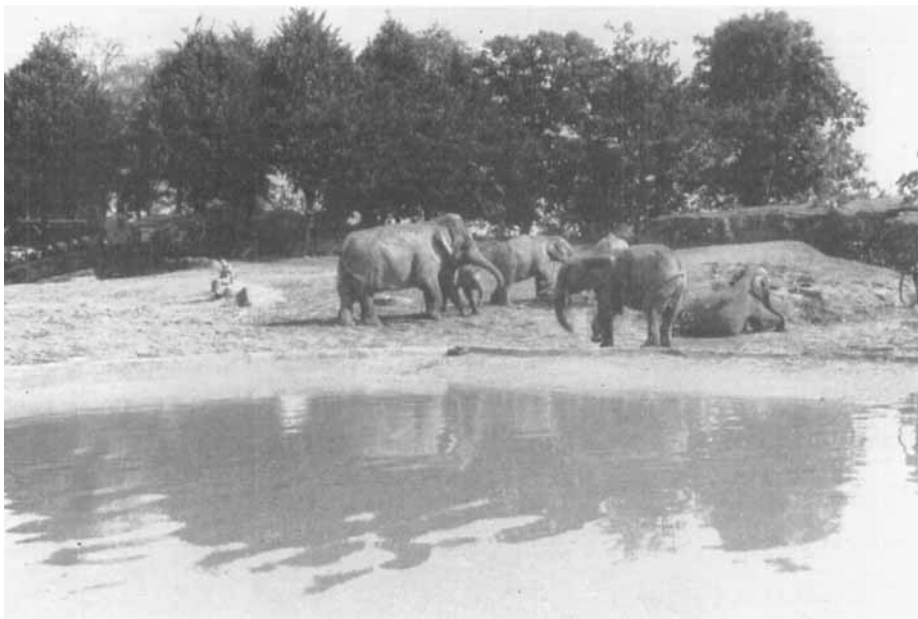


Plate XV

African and Indian Elephants in the open enclosure at Hamburg Zoo are always accompanied by an attendant who assumes the rôle of 'leader elephant'. (See p. 11.)



Plate XVI

Elephants at the Hamburg Zoo are trained to work in harness. (See p. 11.)

hours. It is not known whether this rhino went to the Alipore Zoo. R. K. Lahiri, present director, does not list it among the Alipore rhinos.²

PRIVATE MENAGERIE OF THE KING OF OUDH, INDIA

1. F. c. 1877-87. Presented to the Alipore Zoo.³

BATAVIA, JAVA

G. B. Schwarz, writing in 1751, states that rhinos, presumably Javan, were kept in a menagerie in Batavia; no other particulars are known.⁴

Valentijn, writing in 1875, says that a tame rhino was kept near the city of Batavia; here likewise there are no further particulars.⁵

PRIVATE COLLECTION OF THE SOESOEHOENAN VON MATARAM, JAVA

This Javan noble kept many rhinos in captivity during the years 1648-54, when he was visited by Rykloff Van Goens.⁶

CASTLE AT SURAKARTA, JAVA

1. An example lived for many years in the yard of the castle and was absolutely tame. It was captured in the forests of the province of Keddu in 1815 or 1816 and was seen at the castle by Horsfield and Raffles during their travels in Java.⁷

JAVA (No definite exhibition site)

1. A female was captured in Java in 1661, but no other details are known.⁸

SUMATRA (No definite exhibition site)

1 & 2. During 1959, two examples are said to have been captured in Sumatra. However, the reference is very general and no other details are known.⁹

ZOOLOGICAL GARDENS OF BANGKOK, THAILAND

1. Guy Cheminaud, after the *Bangkok Times* of 22nd October 1938, states that the zoo at one time offered a price of 120,000 francs to whoever captured a living rhino and that the Northern Laotians finally succeeded in capturing a young specimen. Upon arrival in Bangkok it was 2 m. long, 1 m. high, possessed only one horn, and was around twelve years old. While the species is not stated, it is suggested that the description relates to the Javan Rhino.¹⁰

AUSTRALIA

ZOOLOGICAL GARDENS OF ADELAIDE, AUSTRALIA

1. M. 12th April 1886 - 1907. Purchased for £66 in Singapore in January 1886 by R. E. Minchen, director of the zoo. The animal was about eighteen months old when purchased and was exhibited at the zoo as a Great Indian Rhino. Its true identity was not discovered until its remains were studied at an Adelaide museum.¹¹

EUROPE

VIENNA, AUSTRIA

1. In 1788 a botanist of the Imperial Court of Vienna acquired a calf, but it died during the journey, and its remains were presented to the Museum of Natural History of Vienna.¹²

ZOO AT LIVERPOOL, ENGLAND

1. An example was shown in this zoo in 1836. It also travelled all over England and

Scotland with a menagerie and was said to stand 4 ft. 8 in. at the highest part of the back.¹³

ZOOLOGICAL SOCIETY OF LONDON, ENGLAND (REGENT'S PARK ZOO)

1. M. 7th March 1874 – 23rd January 1885. Brought from Batavia, Java, by the dealers Cross and Jamrach from whom it was purchased for £800.¹⁴

JAMRACH'S WILD ANIMAL EMPORIUM, LONDON, ENGLAND

1. F. March 1877 – c. September 1877. A young female lived in Jamrach's quarters for approximately six months and died there before it could be sold or placed on deposit in a zoo.¹⁵

CARL HAGENBECK, WILD ANIMAL DEALER, HAMBURG, GERMANY

1. Carl Hagenbeck said that towards the end of the 1870's he had the genuine Javan rhino. No other particulars are given and it is not known whether this rhino was sold to any zoo.¹⁶

ZOO AT VENICE, ITALY

1. An oil painting of an armoured rhinoceros by Pietro Longhi is said by Herbert Wendt to have been made in the Venice Zoo.¹⁷ Ingo Krumbiegel thinks the painting was done around 1730–40 and that the rhino is *sondaicus*.¹⁸

UNITED STATES OF AMERICA

MONTGOMERY MENAGERIE, SAN FRANCISCO, CALIFORNIA

1. In 1879, a Javan rhino is said to have arrived in San Francisco for the 'Montgomery' menagerie. It travelled, together with other wild animals, from New York aboard the ship *Colon*. While the ship was near Cape Hatteras, North Carolina, rough sea wrecked the rhino cage and it escaped on to the deck of the ship, causing much havoc. The Montgomery menagerie is unknown as such, although around this time The Montgomery Queen Circus was operating in California, and this reference may well concern that organization.¹⁹

FOOTNOTES

1. Lahiri, R. K., Calcutta, India, 6th September 1958.
2. *P.Z.S.L.*, 1876, p. 751.
3. See footnote (1) supra.
4. Kuhn, Hans, 6th August 1960, from Sody, H. J. V., 'Das Javanische Nashorn', *Zeitschrift Für Säugetierkunde* 24 Band, Heft 3–4, 1959, p. 130. Sody refers to Schwarz, G. B., *Reise in Ostindien Worinnen Mancherley Merkwürdigkeiten*, Heilbronn, 1751, p. 51.
5. Kuhn from Sody, supra. In this case Sody refers to Valentijn, *Journ. As. Soc. Bengal* XLIV, 1875, part 2, p. 10–12.
6. Kuhn from Sody, supra, p. 128. Here Sody refers to *Verh. Bat. Gen. K & W*, XXXIV, 1880, p. 52.
7. Kuhn from Sody, supra, p. 134. See also Wendt, Herbert, *Out Of Noah's Ark*, Cambridge, 1959, p. 314.
8. Kuhn from Sody, supra, p. 128. Here Sody relies on *Dagh Register Gehoud int Casteel Batavia Anno. 1661*, Batavia, 1889, p. 289.
9. Kuhn from Sody, supra, p. 167.
10. Cheminaud, Guy, *Mes Chasses Au Laos*, Paris, 1939, p. 83.
11. *Eighth Annual Report of The South Australian Zoological & Acclimatization Society* 1886, Adelaide, p. 8; Finlayson, H. H., *P.Z.S.L.*, 1950–1, Vol. 120, p. 151.
12. See footnote (23) under Great Indian Rhinoceros, supra.
13. Ulmer, Frederick A., see footnote (52) under Great Indian Rhinoceros, supra.
14. *P.Z.S.L.* 1874, p. 182.
15. Kuhn, Hans, 10th August 1959, from *P.Z.S.L.* 1877, p. 270, and 1st October 1877, p. 707.

16. Hagenbeck, Carl, *Beasts and Men*, London, 1909, p. 167.
17. Wendt, Herbert, *supra*, p. 36.
18. Krumbiegel, Ingo, Hannover, Germany, 19th January 1961.
19. Kuhn, Hans, 10th August 1959, from *D. Zool. Gart.* 1879 p. 157.

III

ASIATIC TWO-HORNED RHINOCEROS

Didermocerus sumatraensis

Didermocerus sumatraensis lasiotis

THERE is some question whether there is more than one true species of Asiatic Two-horned Rhino. The typical form is the *Didermocerus sumatraensis* which has long been known to science as the form from the islands of Sumatra and Borneo and the Malay Peninsula. It is commonly referred to as the Sumatran Rhino. In 1872 an Asiatic Two-horned Rhino arrived in London from Chittagong, India and created quite a sensation because it was so different from the typical form. It was named *Didermocerus s. lasiotis* and commonly called the Hairy-eared Rhino. The latter is said by some to be a separate species larger than the typical form, and replacing it in the northern mainland range of the Asiatic Two-horned Rhinos. It is thought at the present that *lasiotis* is not a true species but a subspecies or northern race of this rhino. Your writer will not attempt to resolve his question, for such is not the purpose of this paper. Suffice it to say that given captive examples have been variously referred to as 'Hairy Rhino', 'Hairy-eared Sumatran Rhino', and 'Asiatic Two-horned Rhino'. The writer lists as *lasiotis* only those examples specifically designated as such.

The first Asiatic Two-horned Rhino in captivity was, oddly, the female *lasiotis* which arrived at London's Regent's Park in 1872. This example was captured near Chittagong, India in January 1868 where she lived four years before going to Europe. This specimen also holds the longevity record for Asiatic Two-horned Rhinos, having lived in captivity a total of thirty-two years and some eight months. The typical form *sumatraensis* was first seen in captivity at the Zoological Gardens of Hamburg, Germany, a female having arrived there in January 1872. The longevity record for this form is held by a female which lived approximately seventeen years in Vienna's Schönbrunn Garden. Generally, however, Asiatic Two-Horned Rhinos do not live as well in captivity as do the other species.

Eliminating obvious trades and exchanges there appear to have been fifty-five individual examples of this rhino in captivity, forty-eight of the typical form *sumatraensis* and seven of the form *lasiotis*. The Zoological Society of London holds the record for the number of specimens exhibited, having shown six *sumatraensis* and two *lasiotis*. As will be noted in the list, most Asiatic Two-horned Rhinos were brought into captivity around the turn of the century. In

fact, no example is known to have been exhibited in a zoo for the forty years between the death of the female in Vienna in 1919 and the arrival of three examples in captivity in 1959.

Only one Asiatic Two-horned Rhino has been bred and born in captivity. This event took place in the zoo at Alipore, Calcutta, India in 1889. Not only was this the first rhino of any species to be bred and born in captivity, but the baby was a hybrid, the father being the typical form *sumatraensis* and the mother *lasiotis*. There have been two captive births of females bred in the jungle. The first was a *sumatraensis* born in 1872 aboard the steamer *Orchis* in London harbour and the second was a *lasiotis* born in Calcutta, India in 1895.

Didermocerus sumatraensis

ASIA

ZOOLOGICAL GARDENS OF RANGOON, BURMA

1. A male was received from the straits settlements in 1909. It was seen by Flower when he visited the zoo on 5th–7th May 1913. The date of its death is unknown.¹

ZOOLOGICAL GARDENS AT ALIPORE, CALCUTTA, INDIA

1. M. 1882–9. Sire of the calf born on 30th January 1889. This rhino was sold to Amir Abdul Rahman of Afghanistan.
2. Born in the zoo on 30th January 1889. This was the first rhino bred and born in captivity; its father was the typical form *sumatraensis* and the mother *lasiotis*. It is not known how long this hybrid lived at Alipore.²

ZOOLOGICAL GARDENS OF MADRAS, INDIA

1. A female arrived in this zoo around 1899. It was there in 1913 but its date of death is unknown.³

CENTRAL INSTITUTE OF NATURE RESEARCH, BOGOR, JAVA, INDONESIA

1. F. 1959 – Still on Exhibit. Captured in central Sumatra by the Copenhagen zoo expedition, which also acquired specimens for Basel and Copenhagen.⁴

JELEBU, MALAYA

1. According to Theodore Hubback, a male was kept as a pet for seven years by the 'To Raja Kiah of Jelebu. No other particulars are known.⁵

SINGAPORE, STRAITS SETTLEMENTS

- 1.–3. When R. E. Minchen brought his Javan back to Adelaide, Australia, he said it was one of four taken to Singapore in 1885 by Malay proas from Borneo. The Javan Rhino probably did not come from Borneo, but it is very likely that the remaining three did, assuming they were Asiatic two-horned rhinos. This is extremely vague information upon which to base a listing, but is noteworthy insofar as it relates an incidence of rhinos in captivity. These rhinos probably came into the hands of dealers and may well be listed otherwise herein.⁶

SUMATRA (No definite Exhibition Site)

1. A young female named 'Bong' was kept in Sumatra for a time during 1930, and

during November of that year, Coenraad Uhlig took some interesting photographs of it. The exact length of its captive life is unknown.⁷

AUSTRALIA

ZOOLOGICAL GARDENS OF PERTH, WESTERN AUSTRALIA

1. Charles Mayer says that he captured an example in Trengganu and sold it to the Perth Zoo for £200. This appears to have been around 1902; no other details are known.⁸

EUROPE

SCHÖNBRUNN ZOOLOGICAL GARDEN, VIENNA, AUSTRIA

1. F. 26th October 1900 – 11th November 1908. 'Jenny'. Acquired by the Austrian consul general in Singapore; died from tuberculosis.
2. F. 17th July 1902 – Summer 1919. 'Mary' Acquired likewise in Singapore; died from enteritis.⁹

ZOOLOGICAL GARDENS OF ANTWERP, BELGIUM

1. According to Kuhn an example was in the zoo in 1899. Presumably, this is the same example seen there by Peel in 1902 and mentioned in the 1903 guide book. Its date of death is unknown.¹⁰

ZOOLOGISK HAVE, COPENHAGEN, DENMARK

1. F. December 1959 – Still on exhibit. Captured in August 1959 in central Sumatra by a special expedition for the Copenhagen Zoo. The same expedition also captured three other females and one male. One of the females was sold to Peter Ryhiner, who sent it to Basel, another went to Bogor, and the third died in the trap. The male escaped after having been captured. These were the first Asiatic two-horned rhinos successfully brought to captivity since the female died in Vienna in 1919. At the time of writing, the Zoologisk Have is attempting to acquire a male.¹¹

ZOOLOGICAL SOCIETY OF LONDON, ENGLAND (REGENT'S PARK)

1. F. 21st August 1872 – 21st September 1872. Purchased for £600 from Jamrach who acquired it in Malacca, Malaya.
2. F. 14th July 1875 – 29th May 1877. Captured in Johore, Malaya, and placed on deposit by Jamrach. In 1876 it was purchased for £600.
3. F. 4th October 1878 – 19th March 1879. This adult example was placed on deposit by Jamrach and returned to him for sale to the Barons Arthur and Fernand von Schickler as a gift to the Berlin Zoo.
4. M. 20th March 1879 – 6th April 1879. Placed on deposit and died in that status.
5. M. 1st April 1885 – 22nd May 1885. Purchased as a young animal together with the next described female, from Mr Cross of Liverpool for £500.
6. 1st April 1885 – 26th October 1888.¹²

JARDIN DES PLANTES, PARIS, FRANCE

1. According to Ingo Krumbiegel an example was in Paris in 1900. No other particulars are known.¹³

ZOOLOGICAL GARDENS OF (WEST) BERLIN, GERMANY

1. F. 1879–1879. A gift of Barons Arthur and Fernand von Schickler. It lived only

six months and was valued at 9,000 marks. It had been previously exhibited in the London Zoo.¹⁴

ZOOLOGICAL GARDENS OF Breslau, Germany (now Wrocław, Poland)

1. On 17th November 1904, Director Grabowsky wrote a letter to the Council of the zoo informing them that an example had been offered for sale by the dealer Cross of Liverpool for the sum of £400. A telegram was sent to Cross asking him to send the animal to Hamburg, but there are no other records of the transaction and no further trace of the rhino.¹⁵

ZOOLOGICAL GARDENS IN COLOGNE, Germany

1. Ingo Krumbiegel, after Wilhelm Bolsche, says that an example was once exhibited in this zoo. However, its sex, dates of exhibition, or other particulars are unknown.¹⁶

ZOOLOGICAL GARDENS OF DRESDEN, Germany

1. In 1928, a calf which was raised in Sumatra was bought by Professor Brandes for the Dresden Zoo. Unfortunately, it died from a cobra bite before it left Sumatra.¹⁷

ZOOLOGICAL GARDENS OF HAMBURG, Germany

1. F. 18th January 1872 – 24th March 1876. Caught in Malacca in a pit and imported jointly by Hagenbeck and Jamrach. It was shipped from Singapore, and the journey to Europe via the Suez Canal took sixty days. This was the first example of the form *sumatraensis* exhibited alive in Europe.¹⁸

CARL HAGENBECK, WILD ANIMAL DEALER, HAMBURG, Germany

- 1–5. Hagenbeck said that on four different occasions he had the ‘sumatran black rhinoceros’ but that the five examples all died from enteritis. It is presumed that none of these ever reached a zoo or circus.¹⁹

ZOOLOGICAL GARDENS AT LEIPZIG, Germany

1. An example arrived in 1894 from Penang, having travelled to Europe with an example which was sent to the Budapest Zoo. According to Dr Zukowsky, director, this rhino is not listed in the zoo’s records and was probably owned by Ernst Pinkert, director at that time. The latter was an animal dealer in his own right, and sometimes kept his animals in the zoo. Rumours in Leipzig say that Pinkert handled more than one *sumatraensis*.²⁰

NILL’S TIERPARK, STUTTGART, Germany

1. An example was in this zoo in 1895, but no other particulars are known.²¹

EHLBECK CIRCUS, Germany

1. A ten-year-old specimen was exhibited by this circus in 1895.²²

NATURA ARTIS MAGISTRA, AMSTERDAM, HOLLAND

1. A young animal arrived in 1881, but no other particulars are known.
2. A young female came from Borneo in 1896, and according to Hans Kuhn was not there in 1898.²³

ZOOLOGICAL GARDEN AT BUDAPEST, HUNGARY

1. 1894–5. This example, acquired by purchase, came from Penang and travelled to Europe along with the specimen in Leipzig.²⁴

ZOOLOGICAL GARDEN OF BASLE, SWITZERLAND

1. F. 2nd July 1959 – Still on Exhibit. 'Betina', captured on 17th March 1959 in central Sumatra near the Siak River by the Copenhagen expedition. Sold to the zoo by Peter Ryhiner.²⁵

MISCELLANEOUS EXAMPLES SENT TO EUROPE

Note: These are not known to have been destined for or exhibited at a particular zoo, nor are they known to have been imported by one of the well-known dealers.

1. An example arrived in Europe sometime between January and October 1872. It was purchased by an agent of one of the American travelling menageries and shipped to New York. The particular menagerie for which it was intended is unknown.²⁶
2. A male was captured in Malacca along with the next described female and shipped to London in 1872. It died *en route*.²⁷
- 3-4. A female arrived at London's Victoria docks on 7th December 1872 aboard the steamer *Orchis*. Before being unloaded it gave birth to a calf, and both were taken to the stables of its owner, a Mr Rice. The calf lived only two weeks, and thereafter the mother and remains of the young one were shipped to the USA. The destination of the mother is unknown.²⁸
5. According to Bernhard Grzimek a ten-month-old calf arrived in Hamburg, Germany in 1886. Other specifics are unknown. Perhaps it was one of the five imported by Hagenbeck?²⁹

UNITED STATES OF AMERICA

(A) *Travelling menageries and circuses*

ADAM FOREPAUGH CIRCUS

1. When the 'Great Forepaugh Show' exhibited at Cambridge, Illinois, on 4th September 1874 it claimed to have, 'a monster two-horned hairy rhinoceros as large as an elephant'. An insurance appraisal of this circus in 1873 lists a rhinoceros worth \$3,000 and in 1875 a rhino was killed when its cage wagon fell through a bridge while *en route* from Amsterdam to Schenectady, New York. These latter references probably concern the same example. This specimen may have been one of the two sent to the USA from Europe in 1872.³⁰
2. A female was deposited in Washington's National Zoo in November 1893 at the close of the circus season. While the specific date of acquisition of this example is unknown, a rhino is listed among the animals with the circus in 1879, 1884 and again in 1888. This may be the same animal, although an unusual longevity is thereby suggested.³¹

ADAM FOREPAUGH AND SELLS BROTHERS COMBINED CIRCUS

1. While its female was loaned to the Washington Zoo, the Adam Forepaugh Circus was closed and its interests were acquired by the Sells brothers. In March 1896 the rhino was returned by the zoo to the circus. It is not known how long the rhino lived.³²

RINGLING BROTHERS WORLD'S GREATEST SHOW

1. A female, 'Mary', was purchased on 16th December 1902 from the New York

Zoological Society. It is mentioned in 1915 and 1917 advertisements, but there was no rhino with the circus in 1918.³³

JOHN ROBINSON CIRCUS

1. When 'John Robinson's World's Exposition' exhibited at Decatur, Illinois, on 2nd July 1873 it advertised, 'one double-horned, three-ton, black Sumatran Rhinoceros, cost \$13,000'. This same colourful advertisement was used at Dixon, Illinois, on 13th July 1874. A Sumatran Rhino is also mentioned in an 1880 advertisement and is presumably the same one. This might also be one of the two examples shipped from Europe in 1872. Attention is called, however, to the *unicornis* deposited by John Robinson in the Cincinnati Zoo in 1877. Perhaps there was only the Great Indian Rhino?³⁴

SELLS BROTHERS CIRCUS

1. In an advertisement for the engagement at Kewanee, Illinois, on 31st July 1880 is the statement, 'It alone exhibits the only gigantic living, two-horned Hairy Asiatic Rhinoceros'. This rhino is again advertised in 1881. An African Black Rhino was also said to have been shown by this circus around the same time so that it is possible there was no Asiatic two-horned rhino.³⁵

(B) Zoological Gardens

NATIONAL ZOOLOGICAL PARK, WASHINGTON, D.C.

1. F. 7th November 1893 – 24th March 1896. Deposited by the Adam Forepaugh Circus and returned to the Adam Forepaugh and Sells Brothers Combined Circus.³⁶

NEW YORK ZOOLOGICAL PARK, NEW YORK

1. F. 25th March 1902 – 16th December 1902. Received from the Malay peninsula and because of crowded conditions at the zoo was sold to the Ringling Brothers Circus.³⁷

Didermocerus sumatraensis lasiotis

ASIA

ZOOLOGICAL GARDEN AT ALIPORE, CALCUTTA, INDIA

1. According to Kuhn an example arrived in 1880 and is referred to in the 1883 guide book as the second known specimen from Chittagong. However, Director Lahiri lists only the next described female in his list of Alipore rhinos.³⁸
2. F. 1882–92. Mother of the so-called hybrid born on 30th January 1889. Director Lahiri states that further records of the female are not traceable, thereby indicating that it may have lived longer than 1892.³⁹
3. M. 1884–6. Captured on 25th March 1884 in the Bassein district of Burma, close to the ocean. It was brought to Rangoon on 27th March 1884 and taken immediately to Calcutta. Sent to Regent's Park zoo in an exchange.⁴⁰

CALCUTTA, INDIA

- 1–2. A female gave birth to a calf in Calcutta in February, 1895, but it is not known whether this took place in the Alipore Gardens or in the custody of a dealer. Lahiri makes no reference to it in his list of Alipore rhinos, and it is presumed that the female was bred in the wild. Both mother and calf were sent to Hagenbeck in 1895.⁴¹

CHITTAGONG, INDIA

1. F. January 1868-72. This example was the first Asiatic two-horned rhino known to have been exhibited in captivity. It was captured near Chittagong in January 1868 and remained there until sent to England.⁴²

EUROPE

ZOOLOGICAL SOCIETY OF LONDON, ENGLAND (REGENT'S PARK)

1. F. 14th February 1872 - 31st August 1900. 'Begum'. Imported by Jamrach from Chittagong where it had been in captivity four years. It was sold to the zoo for £1,250. When it arrived in London, it was described as a new species, *Didermocerus lasiotis*.
2. M. 27th April 1886 - 22nd November 1910. Acquired by exchange from the Alipore Gardens.⁴³

CARL HAGENBECK, WILD ANIMAL DEALER, HAMBURG, GERMANY

- 1-2. A female and young arrived from Calcutta in December 1895. In 1896 they were sold to the Barnum & Bailey Circus in the USA for 25,000 marks.⁴⁴

UNITED STATES OF AMERICA

(A) Travelling menageries and circuses

BARNUM & BAILEY'S GREATEST SHOW ON EARTH

- 1-2. It is known only that the mother and young were purchased from Hagenbeck in 1896. Your writer has no record of their having been exhibited by the circus.⁴⁵

(B) Zoological gardens

PHILADELPHIA ZOOLOGICAL GARDEN, PHILADELPHIA, PENNSYLVANIA

- 1-2. A pair was shipped to Philadelphia in March, 1952 aboard the steamer *Schuyler Otis Bland*. The male succumbed in the Red Sea soon after the vessel encountered a severe sand storm, and the female died just out of Naples, Italy. The remains were disposed of at sea.⁴⁶

FOOTNOTES

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4. Anderson, Svend, Copenhagen, Denmark, 9th May 1960.
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6. Finlayson, H. H., *P.Z.S.L.*, 1950-51, Vol. 120, p. 151; Kuhn, Hans, 8th September 1959.
7. Uhlig, Coenraad, *D. Zool. Gart.* N. F. 1933, pp. 114-16.
8. Mayer, Charles, *Trapping Wild Animals in Malay Jungles*, New York, 1920, pp. 108-17 and 195.
9. See footnote (23) under Great Indian Rhino. (supra).
10. Kuhn, Hans, 12th August 1959, after *D. Zool. Gart.* 1899, p. 11 and Meyer, Knottnerus in *D. Zool. Gart.* 1902; Moes, Jos., *Le Jardin Zoologique d'Anvers*, Albumguide 1903; Peel, C. V. A. *The Zoological Gardens of Europe*, 1903, pp. 60-1.
11. Anderson, Svend, Copenhagen, Denmark, 9th May 1960.
12. Kuhn, Hans, 12th August 1959, after *P.Z.S.L.*, 1872, p. 791; 1876, p. 694; 1878, p. 790; 1879, p. 308; 1885 pp. 421 and 937; and after Beddaert and Treves, *P.Z.S.L.*, 1889 p. 7; Matthews L. Harrison, London, 8th July 1958.
13. Krumbiegel, Ingo, 'Die Asiatischen Nashorne', *Saugetierkundliche Mitteilungen* VIII, Heft 1/2, 1960, p. 13.
14. Jones, Marvin L. 1959, after Berlin Zoo

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15. Lukaszewicz, K., Wroclaw, Poland, 7th July 1960.
 16. Krumbiegel, Ingo, *Orion* 11, 1956 p. 116; and Krumbiegel, Ingo, Hannover, Germany, 30th September 1960, after Wilhelm Bolsche.
 17. Ullrich, Wolfgang, 'Bemerkenswerte Aufnahmen eines jungen Sumatra-Nashorns', *D. Zool. Gart.* (N.F.) Bd. 22. 1/3 1955, p. 30.
 18. Kuhn, Hans, 12th August 1959, after *Die Reform* 1872, *D. Zool. Gart.*, 1879, p. 110, and *P.Z.S.L.*, 1873 p. 114; *Nature*, London, 24th October 1872; Noll, F. C., *D. Zool. Gart.* 14th January 1873.
 19. Hagenbeck, Carl, *Beasts and Men*, London, 1909, p. 167.
 20. *Scientific American*, Vol. LXXII, No. 16, 20th April 1895, p. 245; Zukowsky, Leipzig, 16th July 1960.
 21. Krumbiegel, Ingo, *Orion* 11, 1956 p. 116.
 22. Krumbiegel, Ingo, *Saugetierkundliche Mitteilungen* VIII, Heft 1/2, 1960, p. 13.
 23. Kuhn, Hans, 12th August 1959, from *Bijdragen tot de Dierkunde* 1888; *P.Z.S.L.* 1896, p. 784.
 24. Anghi, Cs. G., Budapest, Hungary, July 1960; *Scientific American*, supra.
 25. Wackernagel, H., Basel, Switzerland, 4th February 1960.
 26. 'The New Rhinoceros', *Nature*, London, Vol. VI, 24th October 1872, pp. 518-19.
 27. *Nature*, London, Vol. VII, 30th January 1873, p. 255; Noll, F. C., *D. Zool. Gart.*, 14th January 1873.
 28. Bartlett, A. D., *P.Z.S.L.*, 1873, p. 104; *Nature*, London Vol. VII, 30th January 1873, p. 255.
 29. Grzimek, Bernhard, 'Die gegenwartige Zahl der Nashorner auf der Erde', *saugetierkundliche Mitteilungen*, Heft 3, 1st July 1958, p. 120.
 30. Conover, Richard E., *The Great Forepaugh Show*, Xenia, Ohio, 1959, pp. 2 and 5; Parkinson, Robert L., Cambridge, Ill. 12th March 1961.
 31. *Annual Report of The Smithsonian Institution*, 1894, p. 73; Fox, Charles P., Oconomowoc, Wis., 11th September 1959; Parkinson, Robert L., *ibid*; *White Tops*, Vol. 13, December-January, 1939-40, p. 6.
 32. Conover, Richard E., supra, p. 17; Durant, John and Alice, *Pictorial History of The American Circus*, New York, 1957, p. 314. See also footnotes (31) supra and (36) infra.
 33. Davall, Grace, New York, 9th June 1958; Ringling Brothers advertising couriers 1915 and 1917; Woodcock, William, Hugo, Oklahoma, 7th June 1960.
 34. Parkinson, Robert L., Cambridge, Ill., 12th March 1961. See also footnote (58), Great Indian Rhinoceros, supra.
 35. *Bandwagon*, Vol. 3, No. 6, November-December 1959, p. 17. Parkinson, Robert L., 12th March 1961.
 36. Mann, Wm. M., *Wild Animals In and Out of The Zoo*, 1930, p. 202; Reed, Theodore H., Washington, D.C., 5th September 1958.
 37. See footnote (33) supra.
 38. Kuhn, Hans, 12th August 1959.
 39. Lahiri, R. K., Calcutta, 6th September 1958.
 40. Kuhn, Hans, 12th August 1959 after *D. Zool. Gart.*, 1908 p.1; *P.Z.S.L.*, 1886 p. 266.
 41. Kuhn, Hans, 12th August 1959.
 42. Anderson, *P.Z.S.L.*, 1872 p. 129-32; *P.Z.S.L.*, 1872, pp. 493-4, 790-4, and 882.
 43. Matthews, L. Harrison, London, 8th July 1958; 'The New Rhinoceros', *Nature*, London, Vol. VI, 24th December 1872, pp. 518-19; See also footnotes (40) and (42) supra.
 44. Kuhn, Hans, 8th September 1959: See also Kuhn in Grzimek, Bernhard, 'Die gegenwartige Zahl der Nashorner auf der Erde (Teil 2)', *Saugetierkundliche Mitteilungen*, Band VIII, Heft 1/2, 1st July 1960, p. 23.
 45. *Ibid*.
 46. *America's First Zoo*, Philadelphia, Vol. 4, No. 2, June 1952.

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WHITE RHINOS IN CAPTIVITY

by Richard J. Reynolds

THE White Rhinoceros, the largest of all the species, was not exhibited until 1946, and, including the first, there have only been thirteen examples brought into captivity, all of which are still living.

NATIONAL ZOOLOGICAL GARDENS OF SOUTH AFRICA, PRETORIA, S. AFRICA

1. F. 29th July 1946 – Still on Exhibit. Found in the Umfolosi Game Reserve, Zululand, on 24th July 1946 when not one day old. This was the first White Rhino ever exhibited in captivity.
2. M. 16th January 1949 – Still on Exhibit.
3. F. 23rd August 1952 – Still on Exhibit. The latter pair were both presented to the zoo by the Natal Parks Game and Fish Preservation Board. These three examples are the only southern white rhinos in captivity. All the others are examples of the northern race. (Bigalke, R., 'Pretoria Has a Baby White Rhinoceros', *Animal Kingdom*, Vol. 50, No. 2, 3rd April 1947; Bigalke, R., Pretoria, 3rd September 1958.)

CARR HARTLEY, WILD ANIMAL DEALER, RUMURUTI, KENYA

- 1 & 2. M & F. Around 1949 Hartley captured this pair as very young animals. He keeps them on his ranch on the Laikipia Plains at Rumuruti. (Ruark, Robert, 'He Fights Lions Barchanded', *Saturday Evening Post*, 26th December 1953, p. 26.)

ZOOLOGICAL GARDENS OF ANTWERP, BELGIUM

1. M. 7th April 1950 – Still on Exhibit.
2. F. 7th April 1950 – Still on Exhibit. This pair was acquired from the Game Preservation Department of the Anglo Egyptian Sudan. (Verlaeckt, Raymond, Antwerp, 17th September 1958.)

ZOOLOGICAL SOCIETY OF LONDON, ENGLAND (REGENT'S PARK)

1. M. 25th July 1955 – Still on Exhibit.
2. F. 25th July 1955 – Still on Exhibit. This pair was purchased from the dealer Seago. (Jones, Marvin L., Ft. Belvoir, Va., 17th November 1959; Matthews, L. Harrison, London, 8th July 1958.)

NATIONAL ZOOLOGICAL PARK, WASHINGTON, D.C., USA

1. M. 4th September 1956 – Still on Exhibit.
2. F. 4th September 1956 – Still on Exhibit. This pair came from Uganda through the dealer Seago. (Jones, Marvin L., *supra*; Reed, Theodore H., Washington, 5th September 1958.)