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Sandra Lash Shoshani

Jeheskel Shoshani

*Department of Biological Sciences, Wayne State University*

Fred Dahlinger Jr.

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# Jumbo: Origin of the Word and History of the Elephant

## **Cover Page Footnote**

The authors thank Richard J. Reynolds, III, who brought us together and encouraged the writing of this article. Jules L. Pierce lent his assistance in researching origins of the word and in reviewing the article, and Sabu (Raymond Moreau) and Joseph G. Engelhard made useful comments. We thank the staffs (especially Bill McCarthy) at the Circus World Museum Library and Research Center at Baraboo, Wisconsin (CWMLRC, BW), USA for their help and access to Jumbo's material, the National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA (especially to John M. Miles, Jr.) for obtaining materials, the American Museum of Natural History, New York, USA (especially Bill Coull and Helmut Sommer), Robert Johnson-Lally, the Assistant Archivist at the P. T. Barnum Collection, Tufts University, Medford, Massachusetts, USA for valuable information, and Kim Bryan at the British Museum (Natural History), London, England, for her help with obtaining a photograph of the statuette of Jumbo and for measuring this model. We also thank the Jumbo Centennial Committee at St. Thomas, Ontario, Canada (especially Bob Stollery) for information on the Centennial, and to "Sabu" for providing us with valuable photographs. Last but not least, thanks to Jumbo and the man who brought him to fame, Phineas Taylor Barnum.

**JUMBO: ORIGIN OF THE WORD AND HISTORY OF THE ELEPHANT**

by

Sandra Lash Shoshani<sup>1</sup>, Jeheskel Shoshani<sup>2</sup>, and Fred Dahlinger, Jr.<sup>3</sup>

1. 106 E. Hickory Grove Road, Bloomfield Hills, Michigan 48013 USA

2. Department of Biological Sciences, Wayne State University,  
Detroit, Michigan 48202 USA

3. 743 Beverly Park Place, Jackson, Michigan 49203 USA

**ABSTRACT:** "JUMBO" was an African elephant (Loxodonta africana) whose exact place of origin is unknown. He was collected as a calf in 1861, probably in the French Sudan, south of Lake Chad, and was transferred to the Jardin des Plantes in Paris, France. In 1865 he was taken to the London Zoological Gardens, England, where he was named Jumbo. The origin of the name is also unknown. Most likely it originated from Angola, West Africa ("onjamba" = elephant). During 1880-1881 Jumbo showed signs of unreliable temper which paved the way for his sale to the American showman P.T. Barnum in 1882. In the United States, from 1882 to 1885, Jumbo was exhibited by the Barnum and London Circus and was heralded as "the towering monarch of his race." Jumbo was indeed large for his age, but his size was certainly exaggerated in print. On September 15, 1885 Jumbo was killed by a locomotive at St. Thomas, Ontario, Canada. His mounted skin and skeleton were displayed on tours until 1890. The skeleton was given to the American Museum of Natural History (AMNH), New York, in 1900, and the skin donated to the Barnum collection at Tufts College, Medford, Massachusetts (later Tufts University) where it was destroyed in a fire in 1975. "Jumbo Centennial" was celebrated in 1985 at St. Thomas, Ontario and a statue was erected just outside of St. Thomas. Jumbo is the type specimen (AMNH 3283) of Elephas africanus rothschildi after Lydekker, 1907. Much mythos developed about Jumbo, most of which centered on his size (especially when P.T. Barnum and his partner, James A. Bailey, would not allow him to be measured); his name lives as a gift to the English language - a synonym for all things gigantic.

**INTRODUCTION**

From 1982 to 1985 a number of events took place in North America as part of the "Jumbo Centennial." In retrospect, we offer this article as our commemoration of "Jumbo" the elephant's contribution to our language, stories and history. An attempt has been made to maintain accuracy in this account, by referring to primary historical sources in as many cases as possible. A considerable amount of mythology has developed in regard to Jumbo, not the least of which centers on his enormous size. Without a doubt, this elephant was large for his age but P.T. Barnum's showmanship did much to enhance the impression that Jumbo was "bigger than life." That legend survives today in our language and stories.

## ORIGINS AND HISTORY

### Origins of the word "jumbo"

Many interpretations of the word "jumbo" have been voiced. Prior to 1860 the term was used in the English language in two ways: 1) for an evil spirit or powerful supernatural being in Africa - "mumbo jumbo" (Garrison, 1955; Jolly, 1976; The Oxford English Dictionary, 1961; and Webster's New International Dictionary, 1959) and 2) for a clumsy person, animal or thing (Jolly, 1976; The Oxford English Dictionary, 1961; and Greig, 1982). In retrospect, writers have sought derivations for the word which might explain its use as a name for a large African elephant:

- a Zulu word "jumba" meaning a large packet (Jolly, 1976)
- a Swahili greeting - "jambo" (Galpin, 1982)
- a Swahili word meaning chief - "jumbe" (Gordon-Forbes, 1982)
- an Angolan vernacular name for elephant - "jamba" (Galpin, 1982)

In a letter to African Wildlife Desmond T. Cole (1983), formerly Professor of Bantu Languages, University of Witwatersrand, Johannesburg, Republic of South Africa, clarified the probable origin of the English word "jumbo". In the Angolan dialect of Bantu language (UMBundu) the term for elephant is "onjamba". The word "jumbo" may have been carried back to England in the early 19th Century by explorers or hunters in Angola. Jolly (1976) comments that the name "Jumbo" was probably given to the young African elephant at the Zoological Gardens in London by Superintendent A.D. Bartlett in 1865. Cole (1983) points out that another animal name, "Bambi", probably was derived from the Angolan word "ombambi" for small antelope, e.g., steenbok or duiker. He stresses that there is "...no semantic connection between 'jumbo', elephant or elephant-like thing, and any of the concepts expressed by 'mumbo-jumbo'."

Today, of course, the word "jumbo" has more significance because of its association with the historic figure of a large elephant. Several meanings have developed in the past 100 years. The word is often used as a reference to an elephant in a general way but it may be employed in speech as an adjective meaning large. Tremain (1982:128) states, "His name came to mean anything of great size, including olives and shrimps." In the Britannica World Language Dictionary (1961) the matter of relative size is emphasized in the definition: "very large; especially, larger than usual of its kind, (after JUMBO)".

### Origin of the animal "Jumbo"

Although the word "jumbo" apparently came to the English language from Angola, the elephant of that name did not. There is some disagreement on his origin, due to a lack of records, but no suggestions connect him to that area. Several writers state that Jumbo was captured near the Setit River in Abyssinia (now Ethiopia) (Bolger, 1940; Preston, 1983). Nonetheless, Gcodwin (1953, 1954) and Bolger (1940) give credit to an account by English naturalist and paleontologist Richard Lydekker (1907) that Jumbo was caught

in the French Sudan south of Lake Chad in 1861. According to Barnum (1892:397) Jumbo "...was brought across the desert by Arabs, and was fed on camel's milk." Blunt (1976) stated that Jumbo was captured by Matabele (in Zimbabwe; see Oliver and Page, 1970) hunters.

#### Jumbo as a type specimen

Interest in Jumbo has not been limited to children and adult lay-people; Richard Lydekker, a noted British naturalist, in referring to the shape and structure of the external ears of the African elephant to classify them, described Jumbo as the subspecies Elephas africanus rothschildi (Lydekker, 1907:399, Fig. 119). Lydekker proposed the "statuette of 'Jumbo' in the British Museum (Natural History) as the type." (see Fig. 1). At a later date the subspecies rothschildi was considered to be Loxodonta africana oxyotis, one out of six subspecies as given in Laursen and Bekoff (1978). Today, most authorities agree that until further research is conducted, there should be only 2 subspecies listed for the African elephant: Loxodonta africana africana (the Bush African elephant, to which group Jumbo belongs), and Loxodonta africana cyclotis (the Forest African elephant) (see details in Sikes, 1971; Laursen and Bekoff, 1978; and Eltringham, 1982).



Figure 1. The statuette of Jumbo which was used as the type specimen by Lydekker (1907:399) for a new subspecies Elephas africanus rothschildi. Model is about 1/6 of natural size [60 cm shoulder height as measured by Kim Bryan of the British Museum (Natural History)=BMNH]. Photograph by BMNH.

Since Jumbo is a type specimen (Goodwin, 1953:367) and is therefore important to scientific museum collections, we document the locations of known remains of Jumbo:

1. The skeleton is presently housed at the American Museum of Natural History (AMNH 3283) in New York;
2. Three tiny fragments of the broken cranium which could not be replaced during repair (see details below) were given to J. Shoshani and are presently held at the Elephant Interest Group office at Wayne State University, Detroit, Michigan.
3. Four or five cross sections of Jumbo's tusks that can be traced are at:
  - a. One piece along with the cast of Jumbo's teeth was sent from Ward's Natural Science Establishment in Rochester, New York, in 1886 following the dissection of the dead elephant, to the Natural History Section of the British Museum in London, England (Goodwin, 1952:45; Jolly, 1976:161).
  - b. Another section was sent in March 1886 by Henry A. Ward to the Mammal Division at the Smithsonian Institution, National Museum of Natural History (NMNH), Washington, D.C. (NMNH, pers. comm.; see Fig. 2a-c).
  - c. The third cross section labelled "Alleged to be a piece cut from the tusk of Jumbo" is on exhibit at Circus World Museum, Baraboo, Wisconsin. Its measurements in centimeters (taken through the exhibit glass) are: length 13, width 10.5, thickness 0.7, pulp cavity 4.5 x 3.3, outer circumference 39, inner circumference 12.7 (see Fig. 3).
  - d. The fourth cross section of Jumbo's tusk "with scenes of Jumbo's life painted on it" is at the P. T. Barnum Collection, Tufts University Archives, Medford, Massachusetts (R. Johnson-Lally, pers. comm.).
  - e. According to Goodwin (1952:45) a piece of Jumbo's tusk was sent by Ward to Mrs. Barnum. Whether or not this last section of Jumbo's tusk that was given to Mrs. Barnum is the same piece that is exhibited in Baraboo, Wisconsin, or at Medford, Massachusetts, we do not know.

Note: Goodwin (1952:21, 45) gave a detailed account as to what happened to the rest of the tusks of Jumbo; for example: "About a pound and one-half of Jumbo's tusks were ground into a fine powder and used in preparation of a composition jelly." which was served at a party. Also, "Thin slices of Jumbo's tusks inscribed as souvenirs were given to favored few of the guests." If indeed the original tusks of Jumbo were sectioned and powdered, then it is puzzling to see tusks on Jumbo's head and skull in Figures 11, 13, 14 (top), and 15.
4. A card with several hairs cut off Jumbo's tail about 1880 by W.J. Robb in Winona, Minnesota, and donated by Helen M. Robb in 1961 is held in the Jumbo file at Circus World Museum Library and Research Center, Baraboo, Wisconsin (see Fig. 3).
5. A piece of skin from the tail of Jumbo with "little hair", measuring about "6 inches long and 2 inches wide" is at the P. T. Barnum Collection, Tufts University Archives (R. Johnson-Lally, pers. comm.).
6. The heart of Jumbo was sent to Cornell University, Ithaca, New York (Goodwin, 1952:21). Attempts were made, via the telephone to trace the whereabouts of Jumbo's heart, but were not successful (Jayne, pers. comm.; see also notes on page 122).



Figure 2a. A photograph of a cross-section of Jumbo's tusk inscribed with his terse life history. Other views of this specimen are shown in Figs. 2b and 2c. Note that the skeleton was "mounted for the U.S. National Museum Washington" as stated on the tusk but P. T. Barnum changed his mind at a later date and donated the skeleton to the American Museum of Natural History in New York (see Fig. 12). These photographs were sent to us by John H. Miles, Jr., courtesy of the National Museum of Natural History (NMNH), Smithsonian Institution, Washington, D.C., USA. The specimen is documented in Accession File No. 17276 and Catalog No. NMNH 22247.

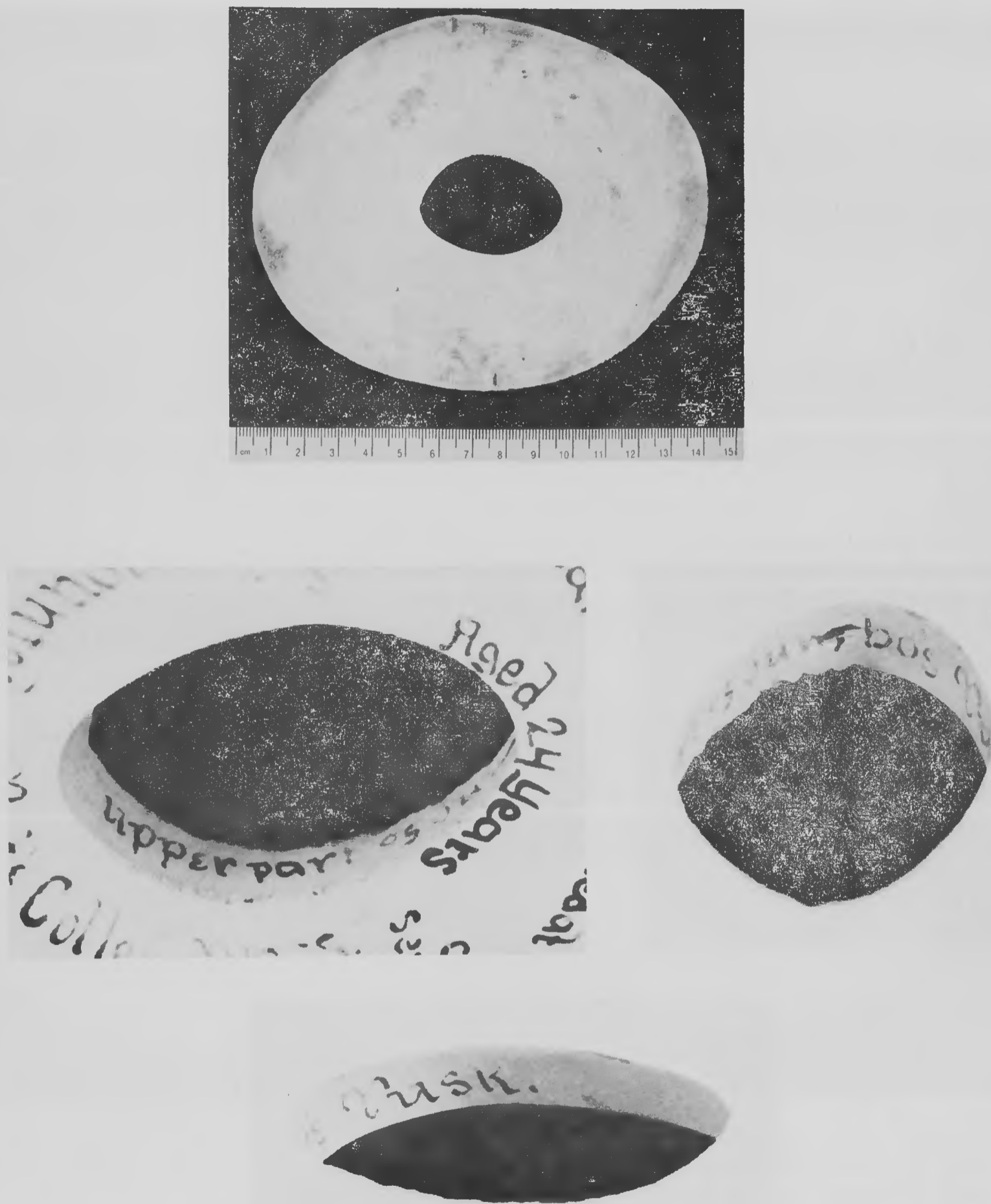


Figure 2b. Top: The other side of Jumbo's tusk shown in Fig. 2a. Middle and Bottom: A sequence of photographs showing the writings in the pulp cavity; in total it reads "Upper part of Jumbo's Tusk".



Figure 2c. A sequence of photographs depicting the inscription on the outer circumference of the specimen shown in Figs. 2a and 2b; in total it reads "Property of Barnum & London Combined Show's 1886".

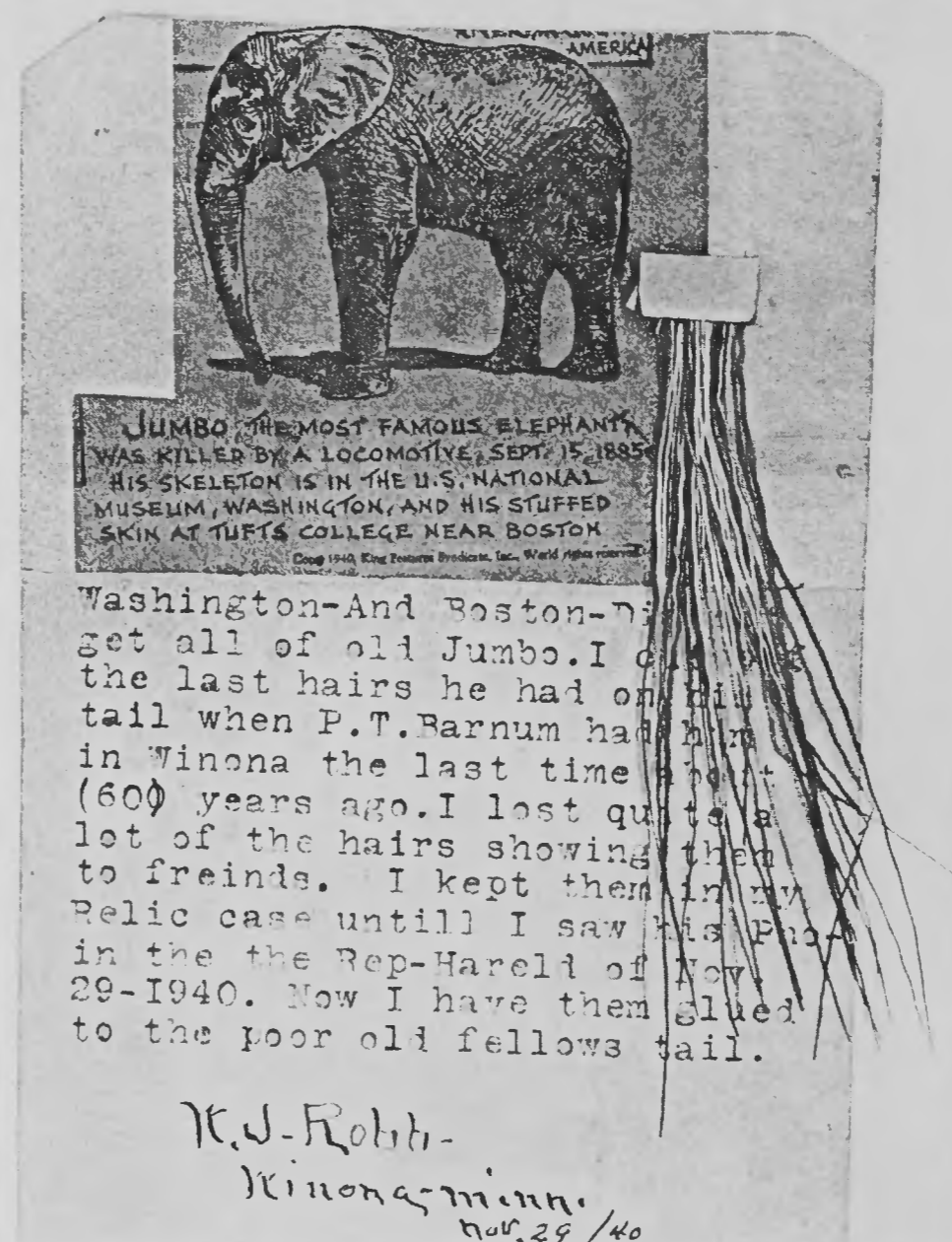
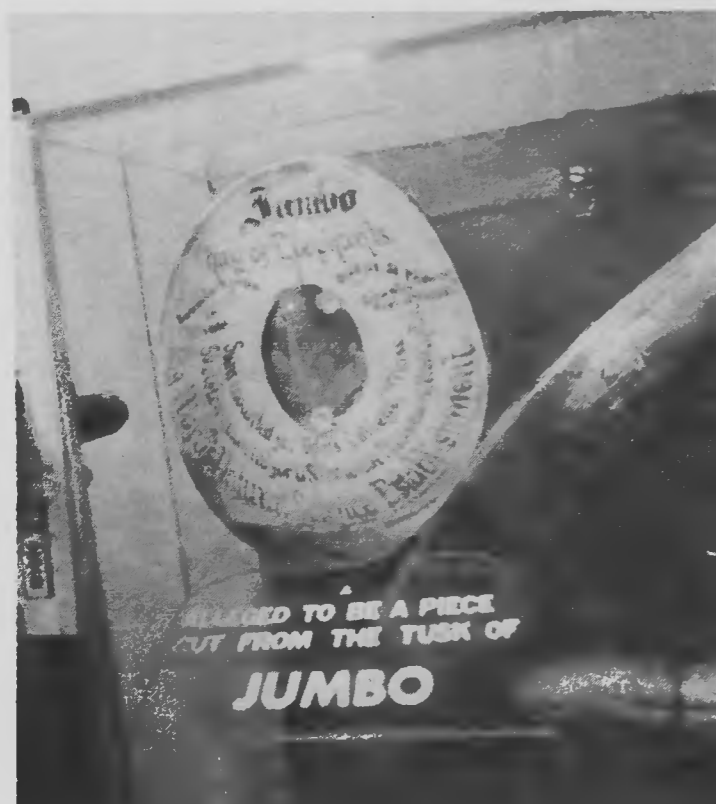


Figure 3. Top left: a cross section of tusk "alleged to be..." of Jumbo, exhibited at the Elephant Barn, Circus World Museum, Baraboo, Wisconsin (photograph by J. Shoshani). Right: a photocopy of Jumbo's hair mounted on a card, located in Jumbo's file at Circus World Museum Library and Research Center, Baraboo, Wisconsin USA (CWMLRC, BWU). Bottom left: "This little elephant (about one inch long) was carved from a piece of the tusk of 'Jumbo'" [photograph by "Sabu" at St. Thomas Historical Museum, St. Thomas, Ontario, Canada (STHM, STOC)].

### Brief Life History of Jumbo the Elephant

Although Jumbo's early history is uncertain, his life from 1865 to 1885 has been well-documented and highly publicized. Some of the accounts and statements tend toward exaggeration. Time and space do not allow a detailed retelling here. [Excellent sources of information are W.P. Jolly's book "Jumbo" (see also review of Jolly's book by Wheeler, 1976), the articles by Carpenter (1941) and Goodwin (1952), and the book by Matthew Scott (1885).] Briefly, however, here is a summary of Jumbo's history.

As a male African elephant calf (Loxodonta africana africana) Jumbo was collected in 1861 probably in the French Sudan and was transferred to the Jardin des Plantes, Paris, France. Four years later, he was obtained by the Superintendant of the London Zoological Gardens (A.D. Bartlett, 1899) in exchange for an Indian rhinoceros (Rhinoceros unicornis). Jumbo arrived in London, England, on June 26, 1865; "...he was just over five feet high and was judged to be about four years old," (Jolly, 1976:16). For many years children rode on his back and he was loved by young and old (see Fig. 4) who often presented him with buns or drinks (sometimes alcoholic), or just wished to be in his vicinity. At the age of 21 Jumbo began to show signs of an unreliable temper (Carrington, 1958), and during 1880 and 1881 his attacks on the walls and doors of the Elephant House were so violent that he made holes in the iron reinforcing plates and broke off both his tusks close to the bone (Jolly, 1976). An elephant gun was purchased in December 1881 to be used in the event that Jumbo's keeper Matthew Scott was absent at the time of one of Jumbo's numerous outbursts and Jumbo could not be contained (Jolly, 1976). During these outbursts Jumbo broke off his tusks which later grew through the skin and necessitated lancing his face (see Fig. 5 and more details below).

At the time when Jumbo's behavior was described as unmanageable, Phineas Taylor Barnum, the American showman, made an attractive cash offer for Jumbo (UK £2,000 or US \$10,000, excluding transportation) which the Council of the London Zoological Society accepted early in 1882 (James, 1982, 1983). The news caused a reaction of horror and dismay; Jumbo was regarded as a national treasure and his imminent departure to the United States was considered as a slur upon the honor and patriotism of all true Englishmen (Anonymous, 1979). Letters, telegrams, songs, poems and telephone calls were some of the means used in unsuccessful attempts to dissuade Barnum (Carrington, 1958; see also Shoshani, 1978).

After much delay in transporting Jumbo (see Fig. 6) to the ship Assyrian Monarch, he and his keeper Matthew Scott left the Zoo at 2:00 a.m. on March 25, 1882 (Jolly, 1976). Upon arriving in New York City on April 9, they joined the twenty-two elephants of the Barnum herd in Madison Square Garden and commenced on a new career with the Barnum and London Circus (Bolger, 1940). Jumbo travelled in a railway car specially made for him, with a companion elephant, "Queen" (Dahlinger, 1984a-b), and Scott slept in the same van (Jolly, 1976). Jumbo was billed as "the towering monarch of his race", "the only mastodon on Earth", and "King of elephants" (see Fig. 7) but Barnum and London did not allow any direct measurements to be made of the animal's true size (Jolly, 1976). Moreover, not many photographs of Jumbo in the United States were published. Fig. 8, therefore, is a rare one.

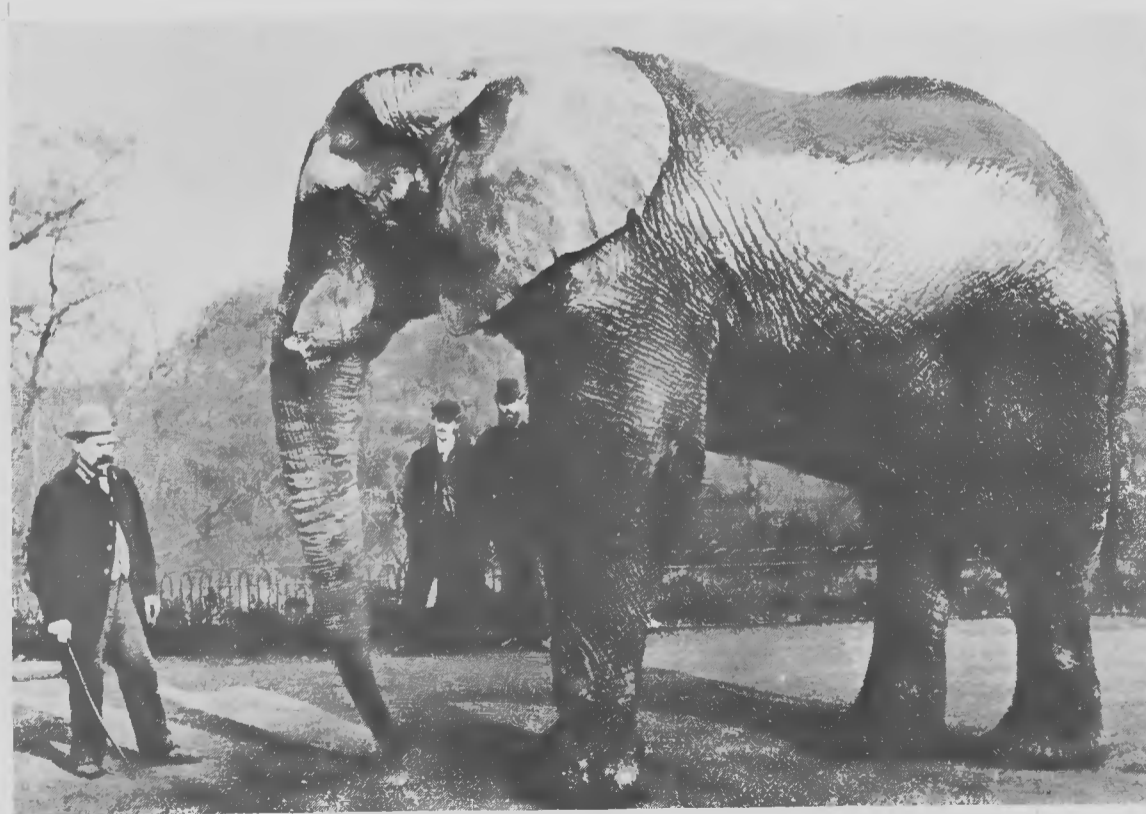
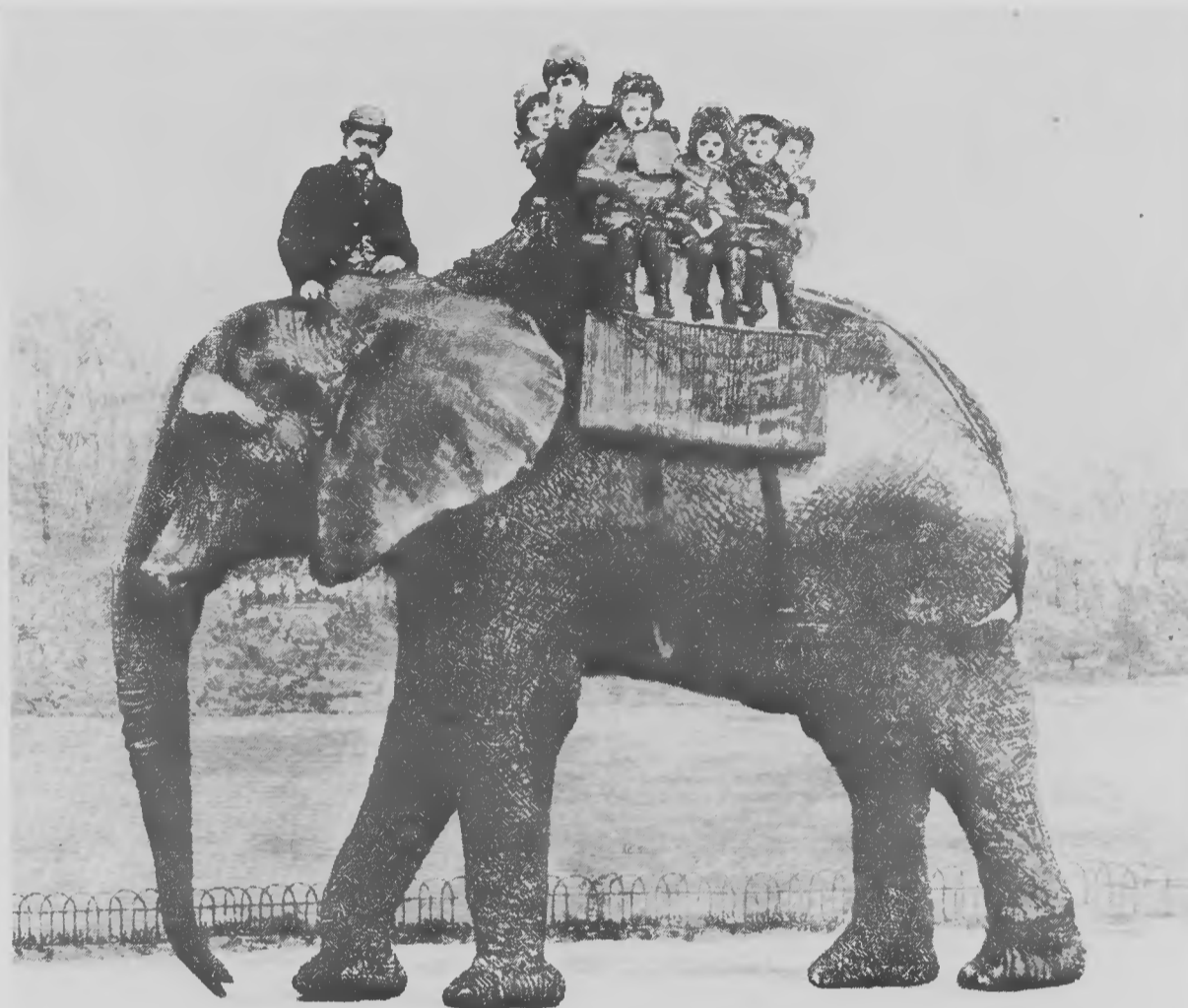


Figure 4. Top: Jumbo giving a ride at the Zoological Gardens in Regent's Park, London. Bottom: Jumbo and his keeper, Matthew Scott, in Regent's Park, London (photographs courtesy of the CWMLRC, BWU).

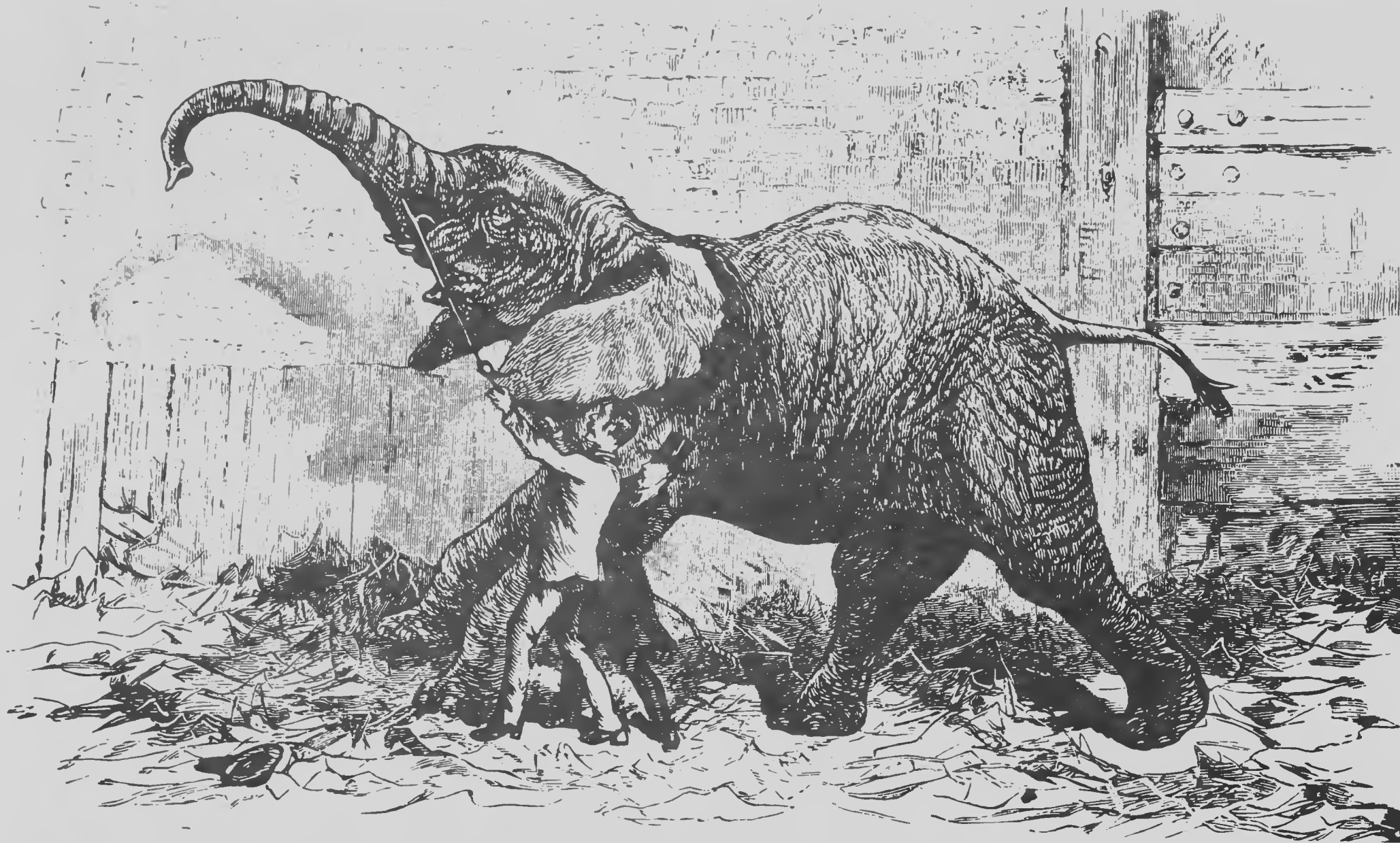


Figure 5. Bartlett (left) and Scott (right) lancing Jumbo's face (after Bartlett, 1899:46).

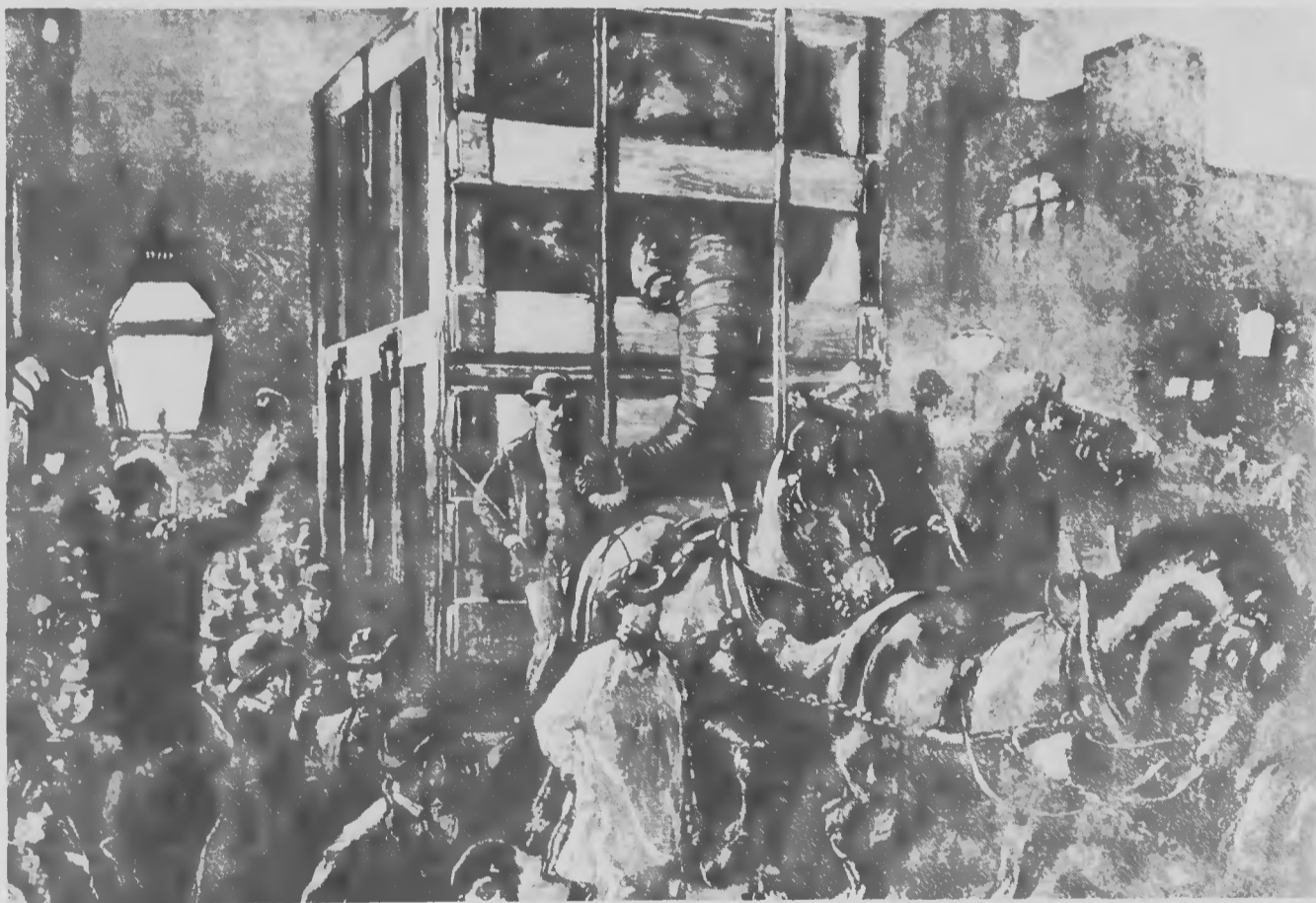
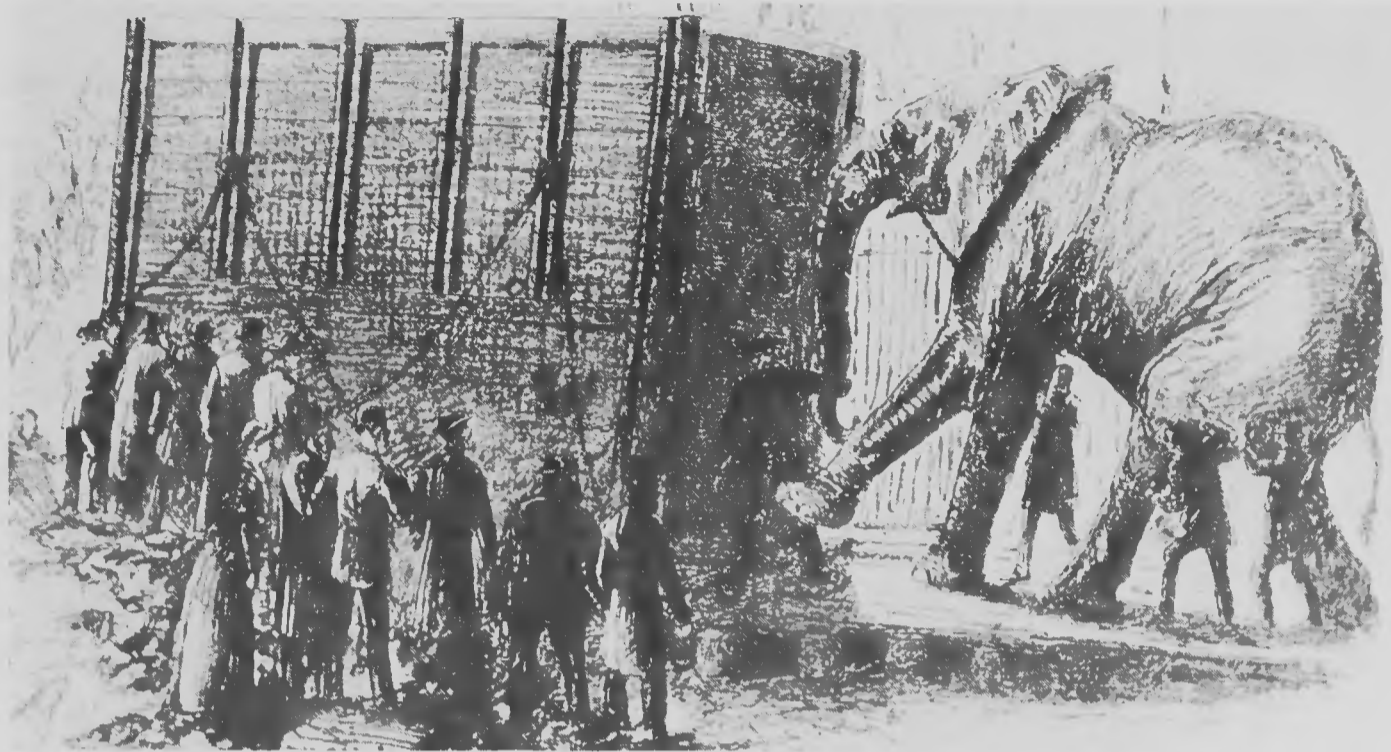
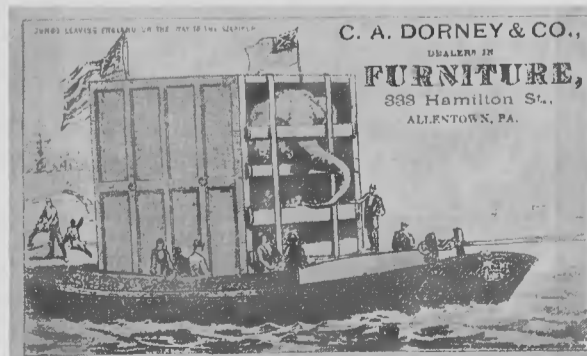


Figure 6. Drawings from the Illustrated London (England) News, February 25, (top) and April 1, (middle) 1882, depicting an 'uncooperative' Jumbo being guided into a wooden crate (top), and on the way to the docks (middle), 2:00 a.m. London time. Bottom: A commercial card (courtesy of "Sabu") showing "Jumbo leaving England on the way to the steamer."



JUMBO GOES BACK TO EUROPE. 11

# JUMBO

The ONLY MASTODON ON EARTH  
Whose Like the World will never See Again.

## LEADS far the LARGEST HERD of ELEPHANTS

**THE GENTLE and HISTORIC LORD of BEASTS**

The Prodigious Pet of both England and America

A Colossus of International Character.



**\*A FEATURE CRUSHING ALL ATTEMPTS AT FRAUD\***

There is but one JUMBO-The Admired of Millions

**The Towering Monarch of his Mighty Race.**

**JUMBO,** THE UNIVERSAL SYNONYM FOR ALL  
STUPENDOUS THINGS.

Steadily GROWING IN TREMENDOUS HEIGHT and WEIGHT

→ GIVE THE LITTLE ONES A LAST RIDE ON THEIR GIANT, DOCILE FRIEND. ←

"THE TOWERING MONARCH OF HIS MIGHTY RACE," IN NEW YORK

*From a circus pamphlet*

Figure 7. A page from Werner, 1923.

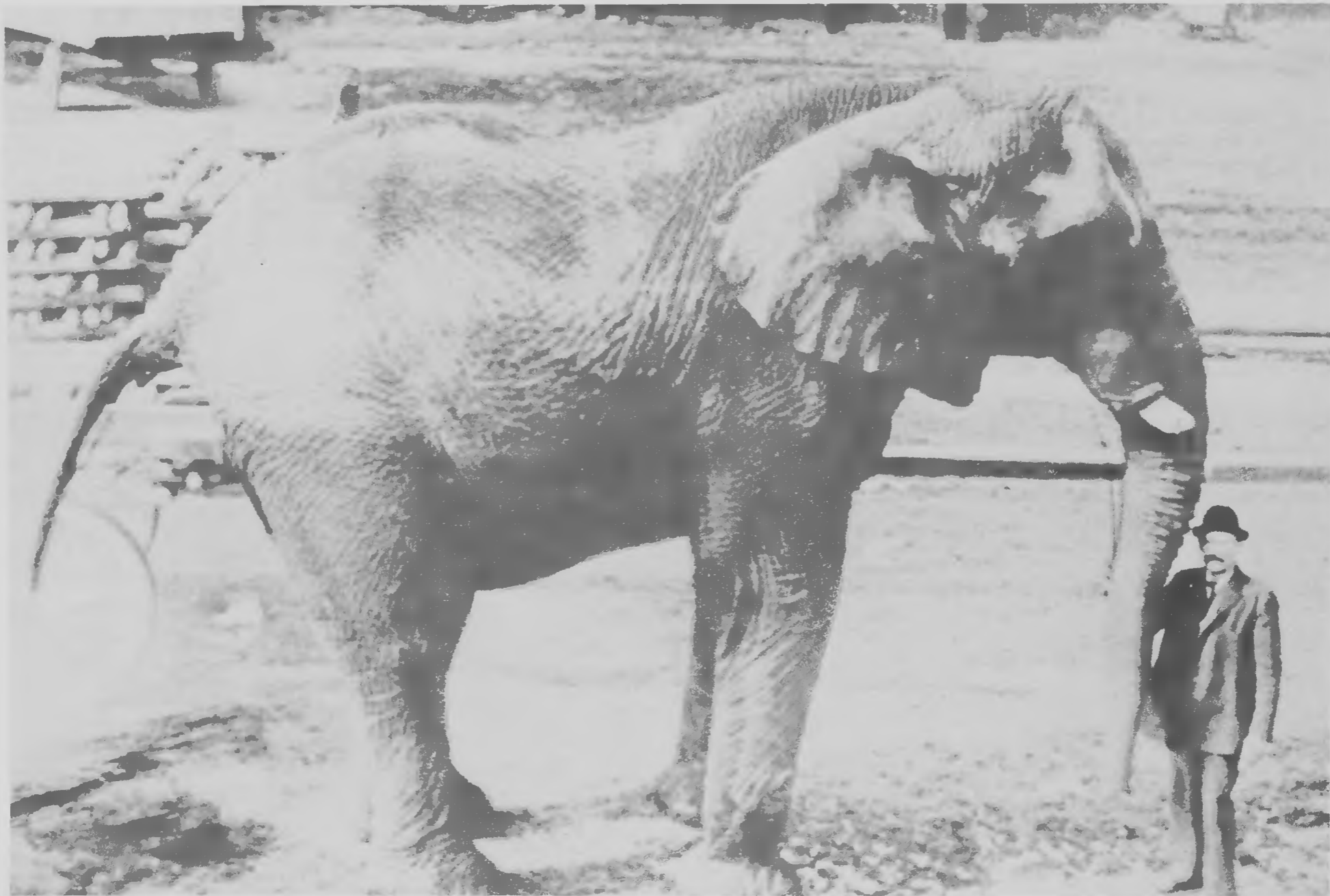


Figure 8. A rare photograph: Jumbo and his keeper, Matthew Scott, in Bridgeport, Connecticut, USA, in 1882 (photograph courtesy of the CWMLRC, BWU).

Jumbo's glorious career came to a tragic and sudden end on September 15, 1885, when he was struck by a freight locomotive after an evening performance at St. Thomas, Ontario, Canada (Fig. 9). Upon his death Jumbo's skin and bones were prepared for mounting by Ward's Natural Science Establishment, according to plans made by the farsighted Barnum (Dahlinger, 1983). The mounted skeleton and skin (taxidermy by Carl E. Akeley and William J. Crutchley; Anonymous and Ward, 1886; Goodwin, 1952; and de Camp, 1964) were displayed on tour through 1890 (see Fig. 10) and then the skeleton was presented to the American Museum of Natural History (AMNH) in New York, where it was on display for the general public until 1977 (Anonymous, 1977). The skin went into the Barnum collection of memorabilia at Tufts College (later University), Medford, Massachusetts (see Fig. 11). The skin was destroyed there by a fire in 1975. The skeleton has been transferred to three different locations (Anonymous, 1977) since 1900 and is presently remounted at the AMNH, New York, and stands in a hallway (Mammalogy, Section 17) on the third floor of the museum next to the interdepartmental freezer (Fig. 12). On the last transfer the skull of Jumbo fell and broke into many pieces and was later reconstructed by Martin Cassidy of the Reproductions Department, AMNH (see Fig. 12 and additional details on Jumbo's skeleton below).

Obviously Jumbo, in life and after death, went through many tribulations. His life history has been documented in the literature mentioned above as well as in the following references (included below in full under Literature Cited): Anonymous (1935), Anonymous (June 29, 1935), Anonymous (April 1956), Anonymous (November-December 1962), Ardman (1973), Ayre (1933), Bannerman (1955), Benton (1891), Berkey (1959), Bernard (1931, 1937), Blakeslee (1950), Brightwell (date unknown), Carpenter and Sameth (1945), Denzel (1973), Edwards (1935), Foreman (1982), Haley (1973, 1974), Harris (1973), Hildreth (1932), Holloway (1976), Hornaday (1911), Knecht (1931), Knox (1957), Levine and Scuro (1979), Lindop (1960), Martin (1978), May (1963), Moore (1974), Russell (1947), Saxon (1985a-b), Sharp (1925), Sillar and Meyler (1968), Spiro (1962), Wallace (1959) and Werner (1923).

#### **Additional details on Jumbo's skeleton**

On the 24th of February, 1983, and the 12th of November 1986, J. Shoshani recorded the following data and notes on Jumbo's skeleton:

A. General. The skeleton is mounted on a wooden base and is supported by heavy pipes, iron bands and struts, bolts and screws. A red tag (with basic information) attached to the sternum identifies this skeleton as belonging to a TYPE SPECIMEN. The skull is original [i.e., consists of real bones, not cast, as was suggested by some people assuming that the skull was "badly smashed" when he was killed; (see also Anonymous 1885)]. In the cranium, the alveoli (sockets) for the tusks are filled with hard substance and there is a round opening in each, measuring about 6.0 cm. The shape of the original tusk alveoli are elliptical, measuring about 13 x 15 cm each. In the mandible there are two major mental foramina on each side. The vertebral formula is 7-20-3-4-12 [i.e., 7 cervical, 20 thoracic, 3 lumbar, 4 sacral, and 12 caudal (incomplete) vertebrae]. Of the 20 ribs, the 3rd right is



Figure 9. A snapshot at the railroad track (photograph courtesy of the CWMLRC, BWU).

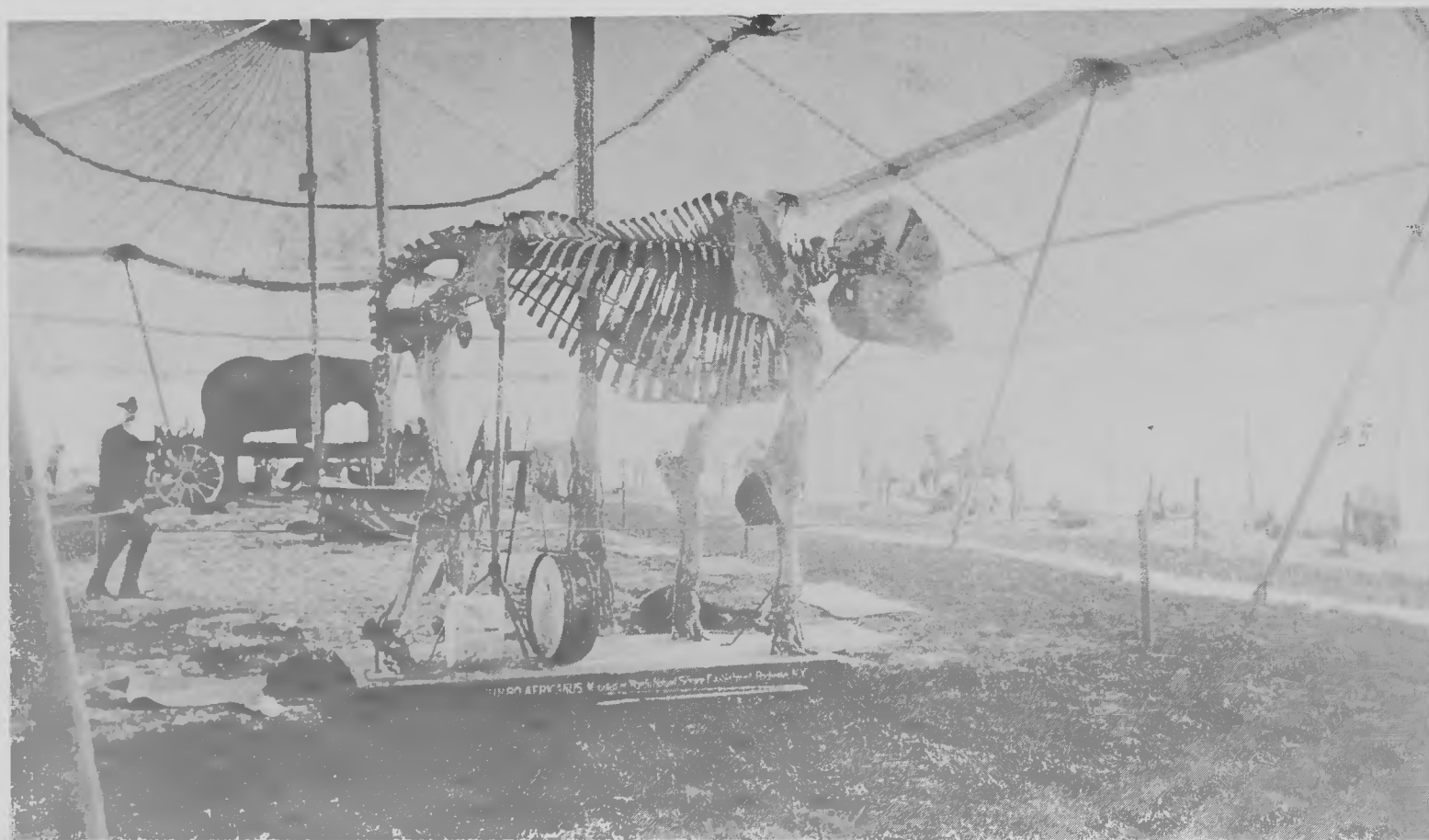
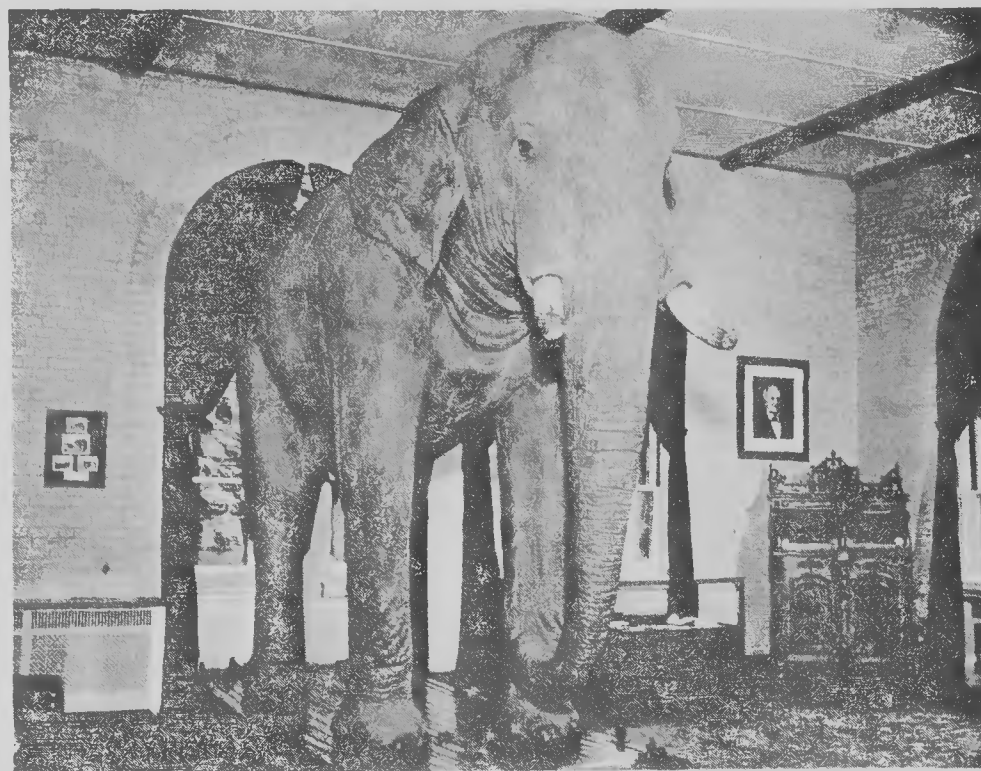


Figure 10. Rare photographs. Top: The skeleton and skin of Jumbo on exhibit with the Barnum and London Circus, in 1888, "somewhere in the vicinity of Chicago" (after Dahlinger, 1983). Bottom, left: "Jumbo being carried... from north Somerville station to Tufts in March, 1889"; Bottom, right: Jumbo ready to enter Tufts. Barnum Museum in 1889." (bottom after Carpenter, 1941).



JUMBO, P. T. BARNUM'S FAMOUS ELEPHANT AT TUFTS UNIVERSITY, MEDFORD, MASS.

7364

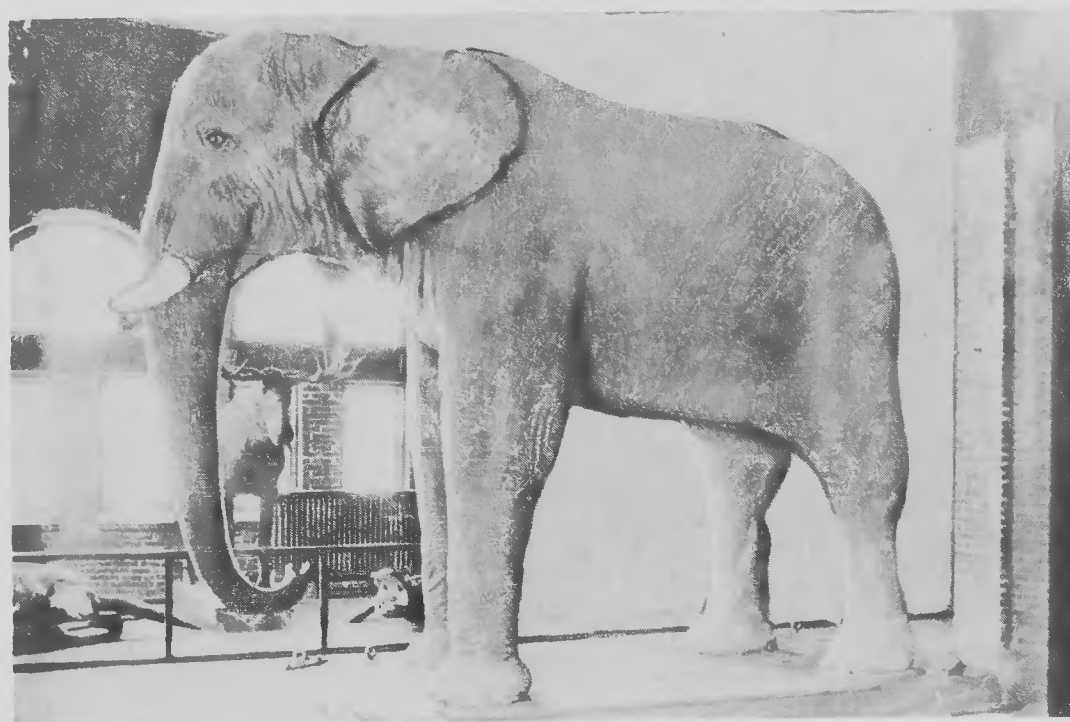


Figure 11. Front (top) and side (bottom) views of Jumbo's mounted skin at Tufts College prior to the fire which destroyed it in 1975 (Top is a postcard, photograph by Duette, courtesy of Tufts University Archives, Wessell Library. Bottom courtesy of the CWMLRC, BWU).

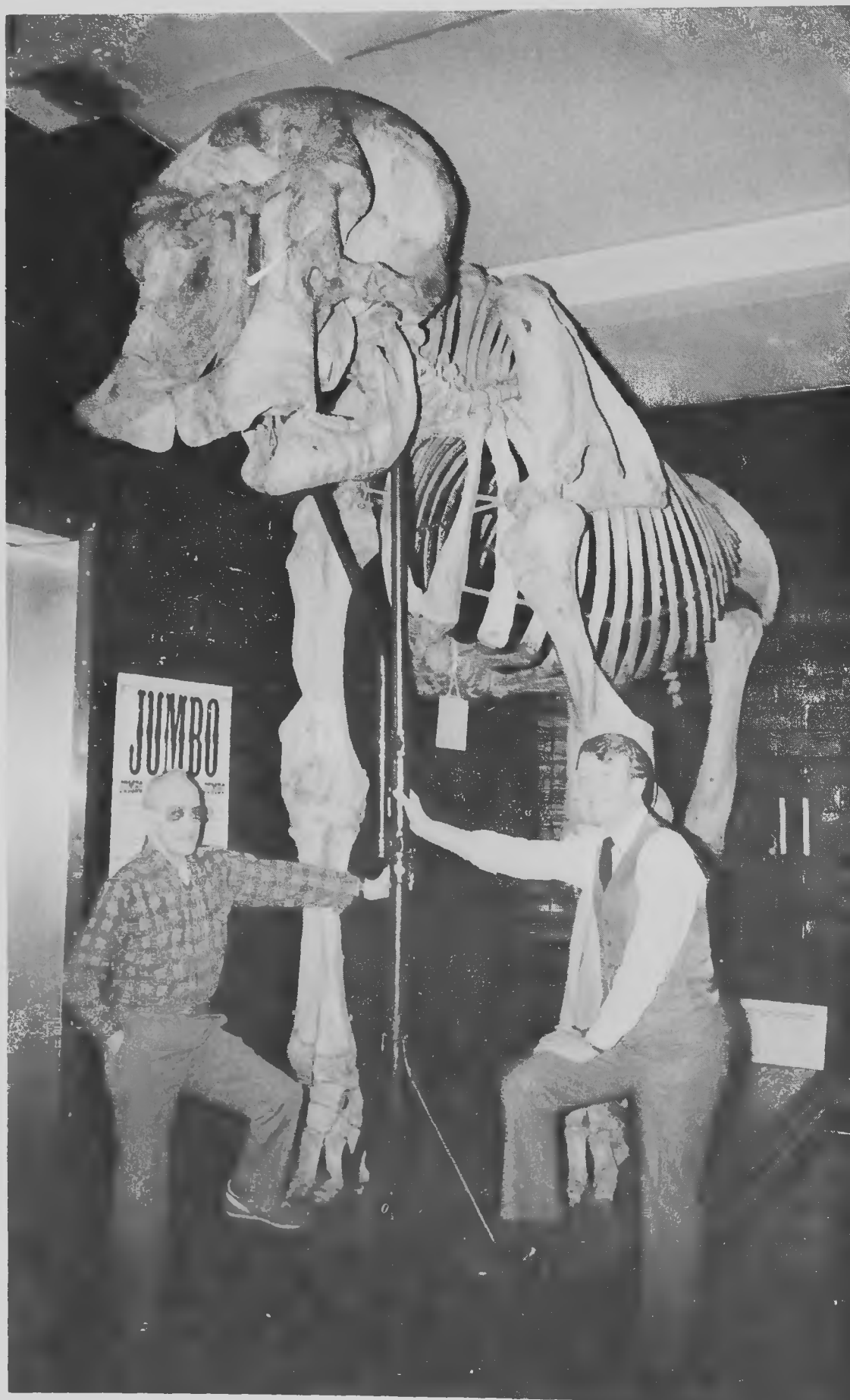


Figure 12. The skeleton of Jumbo (a type specimen, AMNH 3283 see text) as it stands today on the third floor (not on exhibit) at the American Museum of Natural History, New York. Standing on left: William T. Coull and on right: Helmut G. Sommer, two of the Department of Mammalogy staff who completed relocating Jumbo's skeleton (photograph by J. Shoshani).

abnormal; about 22 cm from the top, on the anterior side, there is a long (about 10 cm) and narrow (about 1.5 cm) projection which is separated from the body of the rib by about 4.0 cm and is directed vertically downward. There are three major sternum parts and cartilages that attach to the ribs in front (see Fig. 12).

B. Bones missing on the mounted skeleton. In the writings below Roman numbers I-V refer to digit numbers on the manus ("hand") and pes ("foot"), where I is the first digit starting in the medial side when the manus or pes are in pronation position (in humans, for example, digit I in the hand is the thumb when the palm of the hand is facing down).

Left manus: I - metacarpal and phalanges No. 1 and No. 2.  
 V - phalanges No. 1 and No. 2  
 Right manus: I - phalanx No. 2  
 V - phalanx No. 2  
 Left pes: I - metatarsal and phalanges No. 1 and No. 2  
 Right pes: I - metatarsal and phalanges No. 1 and No. 2  
 V - phalanges No. 1 and No. 2  
 All four feet: I-V - phalanx No. 3  
 Sesamoid bones (40) on all four feet  
 Hyoid apparatus  
 Some tail vertebrae

Note: In the Elephant Room (West Tower of Attic in Section 2) at the AMNH in a metal cabinet, there is a cardboard box with 33 small sesamoid bones in it and a note (by T. A. Lucar) that these bones belonged to Jumbo.

C. Epiphyses fusion formulae. The numbers in the middle and right columns in the following table represent relative degree of fusion of the epiphyses (the ends of long bones) to the diaphyses (the shafts or centers of long bones). Number 1 implies no fusion, whereas Number 4 implies well fused epiphyses to diaphyses (see additional detail on this system in Roth, 1984). In general, the younger the mammal, the less fusion present between the epiphyses and diaphyses and vice versa; when full maturity is attained, in theory, all the numbers for the epiphyseal formulae should be numbered 4.

| BONE                            | PROXIMAL END | DISTAL END |
|---------------------------------|--------------|------------|
| Ulna                            | 4            | 2          |
| Radius                          | 4            | 2          |
| Humerus                         | 2            | 4          |
| Scapula                         | 2            | 4          |
| Thoracic and<br>other Vertebrae | 1-4          | 1-4        |
| Pelvis                          | 2            | 2          |
| Femur                           | 2            | 3          |
| Tibia                           | 4            | 4          |
| Fibula                          | 2-3          | 3-4        |
| Calcaneum                       | 4            | 4          |

### Possible reasons for Jumbo's unmanageable behavior

Why did Jumbo's temper change from a docile and gentle animal to an unmanageable beast that necessitated the purchase of a gun to dispose of him "when and if" ...? There are three thoughts which may explain this behavior pattern: (1) musth, (2) frustration from loneliness and/or inactivity, and (3) eruption of teeth. The first hypothesis (musth) was proposed by A.D. Bartlett, then Superintendent at London Zoo. Musth is known to occur in both Asian (McGaughey, 1963; see also Shoshani and Eisenberg, 1982) and African elephants (Poole and Moss, 1981). The second thought arose because, reportedly, all of Jumbo's tantrums took place when alone, and "...subsided when he was taken out of his house to walk in the Gardens." (Jolly, 1976:43). Activity, especially long walks between engagements, seems to have dulled the rebellious behavior of male elephants in American circuses in the years prior to train travel. Perhaps Jumbo's daily walks of several miles from the railroad stops to showgrounds while on tour (Jolly, 1976:133) were enough to have a similar calming effect. Jolly (1976:136) reports only one incident in which Jumbo knocked a hole in the reinforced wooden wall of his compartment in the Bridgeport stable around 1883, a type of behavior which was common during his last years in London Zoo. "Apart from this he showed no sign under American management of the outbursts which had so alarmed the authorities in England", according to Jolly (1976:136). The thought that Jumbo's behavior changes were due to the eruption of his teeth was suggested by Sikes (1971:294) who wrote "...the period in which he proved so difficult to handle at the London Zoo must have been just about the time his fifth molars were erupting in each half-jaw." Comparing the lower teeth of Jumbo at time of death (Fig. 13) to normal teeth e.g., in Laws (1966) and Sikes (1971), those of Jumbo can be identified as molars V and VI. The teeth in the upper jaw are severely mal-occluded and abnormally developed (Fig. 14). The violent hitting of his head against hard objects like iron bars and walls may have disoriented the direction in which the teeth would normally have developed in the upper jaw. Alternatively, the distortion in the upper molars could have been caused by a differential rate of abrasion of the enamel on the teeth (due to little abrasive material in the diet). The possibility exists that the malformation of Jumbo's molars resulted in discomfort and subsequent change in his behavior. In our opinion, the "violent hypothesis" (hitting the head against hard objects) is more plausible as an explanation than the "differential rate of abrasion hypothesis" since the lower molars were perfectly normal.

It is of interest that problems with Jumbo's teeth were not limited to his molars but also involved his tusks. During attacks on the walls of his home he broke off both tusks inside the mouth and close to the bones (premaxillae). Subsequently the tusks grew towards the skin of the upper lips and caused abscesses on both sides. According to Bartlett (1899:47) Jumbo suffered pain. "I therefore determined to cut through the thick skin in order to discharge the accumulated pus and enable the tusks to grow out of this opening. In order to accomplish this I had a steel rod made about 18 inches in length, formed with a sharp hook at the end, the hook being flattened on the inner edge as sharp as a razor." A.D. Bartlett and M. Scott (the keeper) entered Jumbo's cage and, as Bartlett wrote, "Standing under his lower jaw and passing the instrument above the swollen part, I, with a sharp

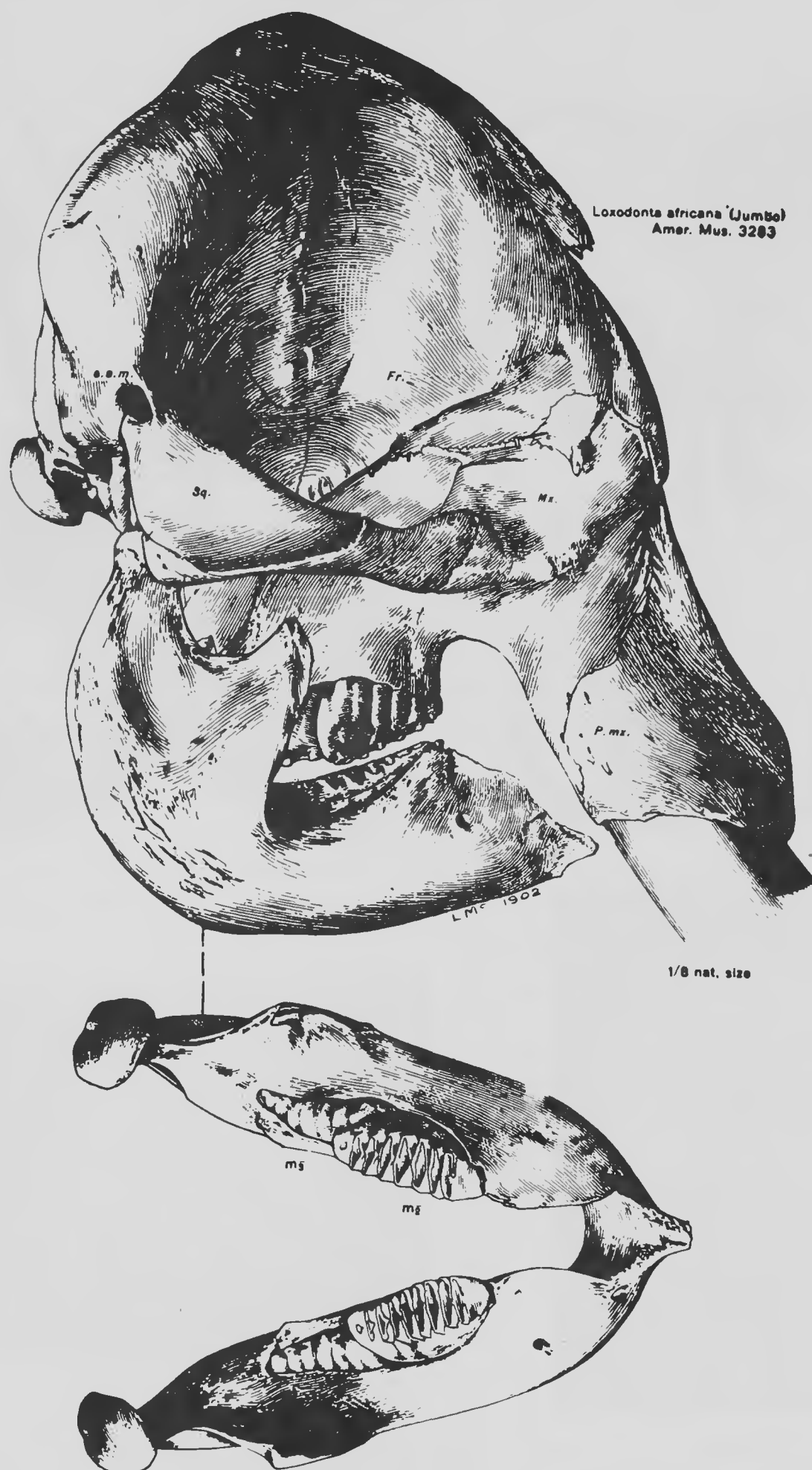
AFRICAN ELEPHANT CRANIUM AT THE AGE OF TWENTY-FOUR,  $M^2$ ,  $M_2$  IN USE

Figure 13. Skull of Jumbo. Top: in side view, Bottom: mandible in occlusal (dorsal) view showing perfectly normal grinding teeth (after Osborn, 1942:1199; see there for key of names of bones).

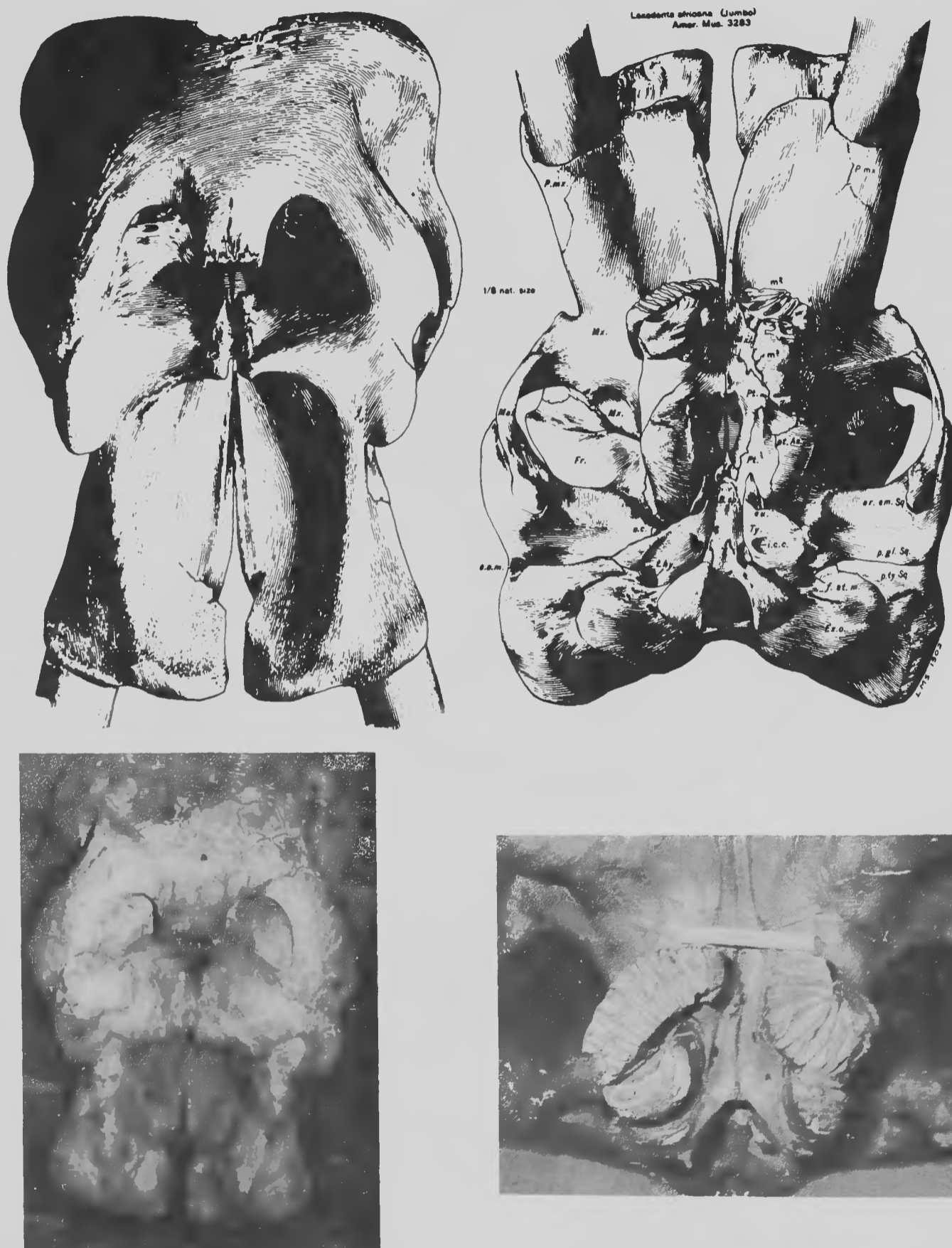


Figure 14. Cranium of Jumbo. Top and bottom left depict dorsal views before and after the cranium broke, respectively. Top and bottom right depict ventral view of cranium and close up of grinding teeth, respectively. The grinding teeth (molars V and VI on each side) had developed extremely abnormally (see text for possible explanations). Top: after Osborn, 1942:1200, see there for names of bones; Bottom: photographs by J. Shoshani.

pull, hooking fast into the skin, cut it through, causing a most frightful discharge of very offensive matter; the beast uttered a loud shriek and rushed from us, bleeding, shaking and trembling, but without exhibiting any anger." (Bartlett, 1899:48, see Fig. 5). Both sides were lanced. Abnormal developments of molars and tusks (including those of Jumbo) were reported by Colyer (1936). Also, "Putzi" an African elephant at Safari Park in Ramat-Gan (Israel) has a tusk growing through the lip (R. Geron, pers. comm.).

In summarizing the thoughts on Jumbo's change in temperament, we offer the explanation that the unmanageable behaviors could be due to a combination of all the above factors operating over a period of several years.

#### Notes on Jumbo's age

Most of the available literature (e.g., Goodwin 1952; Jolly, 1976) give the approximate year of birth of Jumbo to be 1861, which made him 24 years old when he died. If we use the foramen mentale formula of Sikes (1971:174-177) to estimate his age, we get  $FM:V_2$ , which corresponds to about 24-25 years. According to Laws (1966:8-9) scale, however, Jumbo fits between Groups XVII and XVIII and his estimated age is between 28-30 years. Also, if we use the hind foot length (48.51 cm, based on 5 foot circumference, see below), we note that Jumbo's age falls outside the curve (over 20 years) in Fig. 2 of Western et al. (1983:1194).

#### Notes on Jumbo's size

At the time Jumbo left London Zoo for North America, he was estimated to be nearly eleven feet tall at the shoulder and weighed six tons (age: about 22 years) (Jolly, 1976). In March 1882, Matthew Scott sent a set of measurements to "Miss Stevens" in answer to an inquiry. He said: "The size round Jumbo's hind feet measures 5 feet and the forefeet 5 feet 6", (Jolly, 1976:44). Using the general principle that two times the circumference of an elephant's fore foot is equal to its height (Boyle, 1929; see also Western et al. 1983 for an alternative technique), an estimate of 10 feet is valid for Jumbo's height at that time.

In the United States a number of enquirers attempted to gain permission to measure Jumbo, including an American zoologist William C. Hornaday. Barnum and Bailey refused to allow either outsiders or members of the circus to know Jumbo's true height. Barnum claimed that the young bull grew five inches in the first eighteen months in North America and gained one ton in weight. A pair of performers in the circus devised a scheme in 1883 to obtain the measurement under the guise of practicing their act. The information was passed to Hornaday twenty-eight years later; they concluded that Jumbo was ten feet, nine inches at the shoulder (Hornaday, 1911). Nonetheless, Jolly suggests that an estimate of height taking parallax into account would yield "a shade over eleven feet tall" (Jolly, 1976:136-138).

Following Jumbo's death, a number of calculations have been made from the skeleton. Barnum used measurements made by Henry A. Ward upon Jumbo's death (Ferris, 1932:363). Height to shoulder...12 feet; weight...7 tons. Henry Fairfield Osborn (1942) gives Jumbo's height as 11 feet 2 inches and

L.S. de Camp ascribes a weight of "about 8 tons" (de Camp, 1964:25). Osborn (1942:1022) estimated the height of Jumbo in the flesh by adding 6.33% to the measured skeletal height at the shoulder (3,194 mm to the top of the scapula). Calculation shows that Jumbo's estimated height by this method is 3,396 mm (11 feet 1.75 inches). Based on a formula for quadrupedal mammals which used measurement of the circumferences of the femur and humerus, Dale Russell (pers. comm., 1980; see also Anderson et al., 1985 where they give the weight of Jumbo as 5,896,700 grams) predicted a weight of 5.6 - 7.09 English tons (with a mean of 6.5) for Jumbo. These values are high when Jumbo's weight is calculated from his heart weight. Barnum (1892:397) noted that Jumbo's heart weighed 46 lbs. According to Benedict (1936:135) the heart of an elephant weighs about 0.05% of the total body weight. Therefore, based on this information, Jumbo would have weighed about 9,200 lbs. or 4.6 tons. Yet, there are two more ways to calculate Jumbo's weight - based on the weight of his skin and skeleton. According to Goodwin (1952:20) "Jumbo's hide weighed 1538 pounds and his bones 2400 pounds.", (see also Anonymous, 1885:541). Therefore, if we take the value of Shoshani et al. (1982:35) that the skeleton of an elephant weighs approximately 16.5% of the total body weight, then Jumbo's weight is calculated to be 14,545 lbs. or 7.3 tons. Similar calculations for the skin (which is 9.8% of the total body weight; after Shoshani et al., 1982:35) gives a value of 15,662 lbs. or 7.8 tons.

At approximately 11 feet tall and about 6.5 tons (13,000 pounds) Jumbo would have been a LARGE African elephant at the age twenty-four years (see also Elephant, 1(3):46-47, and the response to Jason Dufour in Recent Correspondence of this issue). When compared to Asian elephants which were commonly displayed in Europe and North America, he would have seemed even larger.

### **"Jumbo Centennial" 1982-1985**

A number of enterprising individuals instigated their own forms of celebration during the centennial of Jumbo's death. Robert F. Houston of Philadelphia, Pennsylvania, initiated two commemorative projects for the Centennial. From his Philadelphia Mini-Circus & Museum, he assembled an historic multimedia display, "The Jumbo Centennial Exhibition", which was presented by the Free Library of Philadelphia, Logan Square (Houston, 1985). As a tangible reminder of this celebration, Houston had Jumbo Centennial patches made and sold them through publications such as The Circus Report.

In St. Thomas, Ontario, Canada, a group of local patrons formed the St. Thomas Jumbo Foundation and Centennial Committee to plan a five-day festival for the centennial of Jumbo's death in St. Thomas. Bob Stollery was the Jumbo Monument chairman. The Kiwanis Club and the St. Thomas Jumbo Foundation undertook a project to build a memorial to Jumbo for the Centennial. A life-size statue made of steel and cement was constructed by animal sculptor Winston Bronnum. The statue was placed at the western entrance to the city overlooking Highway 4 (Fig. 15). "Jumbo Days" were held June 27 - July 1, 1985. Jumbo Centennial coins were sold as part of the fund-raising for this event, as were safari-style hats, matchbooks and other Jumbo memorabilia (Brennan, 1983; Pollack, 1985; and Ross, 1985).

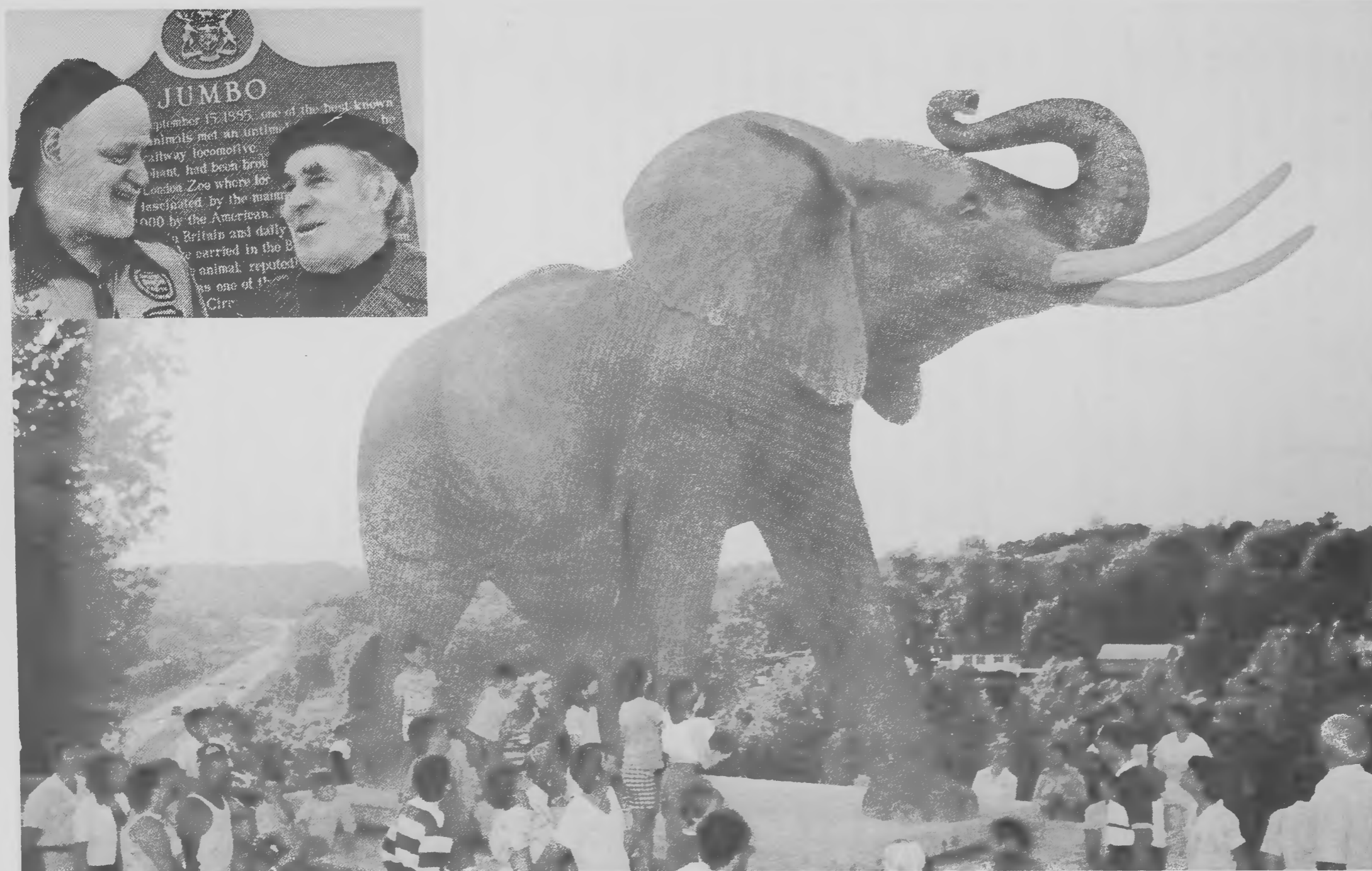


Figure 15. The life-size statue (by sculptor Winston Bronnum) of Jumbo as it stands today at the western entrance to St. Thomas, Ontario, Canada. This is a postcard photograph by Brian Wilsdon which was sold during "Jumbo Days" June 27-July 1, 1985 at STOC. Inset: A photograph by the "London Free Press" depicting Elephant Historian "Sabu" (Raymond Moreau, left) with St. Thomas Historian George Thorman by the plaque erected at the railroad track near the site where Jumbo was killed in STOC (both photographs were sent to us by "Sabu").

### Jumbo Trivia

In researching the origins and history for this article we learned that in 1887 Jumbo's skin, while on tour with the Barnum and London Show, almost caught on fire. And that in 1889 it was planned to fire-proof the skin of Jumbo but that "Mr. Bailey has lost the directions" for the ingredients. As it is now well-known, Jumbo's mounted skin was unfortunately burned in 1975 while at Tufts University (see Appendix I for details).

Appendix II (correspondence to and from George G. Goodwin, Department of Mammalogy, AMNH) and Appendix III by Raymond (Sabu) Moreau are included here, for they include interesting information about Jumbo.

We also encountered a myriad of names and ideas which might be classified as "trivia" related to Jumbo. We thought we should share some of these with our readers who may find them interesting. For example, the University of Montana claims a mountain overlooking the Missoula campus which they call "Mt. Jumbo" since it looks like an elephant with a trunk, floppy ears and tail (Anonymous, 1985). At Tufts University, home of the Barnum Collection including Jumbo's skin until 1975, the sports teams are called "The Jumbos" (Patricia Wozniak pers. comm.), all college songs and cheers include references to Jumbo, and Jumbo once appeared as a college emblem at all athletic functions (Edwards, 1935:32). According to Goodwin (1952:21) when Jumbo's skin was at Tufts College, he was regarded as the school's official mascot, and "College tradition has it that coins dropped into Jumbo's trunk before an examination will bring an A mark more easily than an all night's session of cramming."

On the 29th of November, 1984, during an interview on the "Larry King Show" (a Mutual Network Talk Show), Michael Burke mentioned that a circus man by the name of Dexter Fellows had a figure of Jumbo engraved on his front tooth. Burke was not able to provide additional information on the whereabouts of Fellows; we ask readers who have information on Dexter Fellows to please contact us.

On the 13th of January 1983 the Public Broadcasting System (PBS Channel 56 in Detroit, Michigan) aired a program entitled "The last trumpet" (produced by Granada U.K. Color Production), incorporating the story about Jumbo within a mystery series. It was a dramatization of Jumbo's last days in London, the British uproar about purchase and transfer to America and the actual transport here. A similar program was aired during the summer of 1985. Also, on the 30th of November 1986, the Columbia Broadcasting System (CBS, Channel 2 in Detroit, Michigan) aired a program entitled "Barnum", recalling major happenings in P. T. Barnum's life, including a brief section on Jumbo showing "Tommy" the Asian elephant (with huge tusks) as the star "Jumbo"; see an update on "Tommy" under Elephant Notes and News in this issue).

A considerable amount of material on Jumbo, ranging from photographs to articles and a song sheet, is part of the Jumbo file at Circus World Museum Library and Research Center, Baraboo, Wisconsin. The collection also

contains books, handbills, posters and couriers, with some pertinent references to Jumbo. Additional places that hold literature, correspondence, photographs, and other materials pertinent to Jumbo, include: the American Museum of Natural History Department of Mammalogy (New York New York) the P. T. Barnum Collection at Tufts University Archives (Medford, Massachusetts), the Elephant Interest Group, Wayne State University (Detroit, Michigan), the National Museum of Natural History, Department of Mammalogy, Smithsonian Institution (Washington, D.C.), the "Sabu" collection (Raymond Moreau, Niagara Falls, New York), and the St. Thomas Historical Museum (St. Thomas, Ontario, Canada). Among the material held at St. Thomas Historical Museum are some of the items removed from Jumbo's stomach ("Sabu", pers. comm.). According to Anonymous (1885:541) and Jolly (1976:150-151), items removed from the stomach of Jumbo include: "... many English coins--gold as well as silver and bronze.", "...about a peck of stones..." a bunch of keys, a police whistle, lead seals from railway trucks, many little trinkets of metal and glass, a few screws and rivets, and pieces of wire from hay bales." (see Fig. 16 at bottom of Appendix I).

#### CONCLUSION

In the words of W.P. Jolly (1976:163): "It needed more than a single circumstance to bring about Jumbo's fame: he was the right animal, with the right name, and his adventure took place at the right time in the hands of the right publicist." Jumbo the elephant became a significant figure in modern lore and his name survives in our language one hundred years later. There are few animals, either in literature or in real life, who have achieved such renown in the Western World. As a subject of stories, movies and historical study, Jumbo deserves his due. It is hoped that his spirit will live on for another hundred years.

#### ACKNOWLEDGMENTS

The authors thank Richard J. Reynolds, III, who brought us together and encouraged the writing of this article. Jules L. Pierce lent his assistance in researching origins of the word and in reviewing the article, and "Sabu" (Raymond Moreau) and Joseph G. Engelhard made useful comments. We thank the staffs (especially Bill McCarthy) at the Circus World Museum Library and Research Center at Baraboo, Wisconsin (CWMLRC, BW), USA for their help and access to Jumbo's material, the National Museum of Natural History, Smithsonian Institution, Washington, D.C., USA (especially to John M. Miles, Jr.) for obtaining materials, the American Museum of Natural History, New York, USA (especially Bill Coull and Helmut Sommer), Robert Johnson-Lally, the Assistant Archivist at the P. T. Barnum Collection, Tufts University, Medford, Massachusetts, USA for valuable information, and Kim Bryan at the British Museum (Natural History), London, England, for her help with obtaining a photograph of the statuette of Jumbo and for measuring this model. We also thank the Jumbo Centennial Committee at St. Thomas, Ontario, Canada (especially Bob Stollery) for information on the Centennial, and to "Sabu" for providing us with valuable photographs. Last but not least, thanks to Jumbo and the man who brought him to fame, Phineas Taylor Barnum.

Appendix I. Top: excerpts from Dahlinger (1983:3) on how Jumbo's skin almost caught on fire. Below excerpts from Carpenter (1941:fifth page) regarding the intent to fire-proof the skin of Jumbo.

To augment the hide and skeleton, Barnum purchased the African elephant Alice from the London Zoological Gardens. During the controversy surrounding Jumbo's 1882 departure from England, the popular press, perhaps at the show's urging, depicted Alice as his deserted "wife." When she and Jumbo were re-united in the spring of 1886, she became the grieving "widow."

To complete the tableau, Matthew Scott, Jumbo's longtime keeper both in London and on the Barnum show, and Tom Thumb, the small elephant for whom Jumbo purportedly gave his life, were exhibited alongside the hide and skin adjacent to Alice in the museum tent. The group also appeared in the big show performance as a walkaround early in the show.

Jumbo was de-emphasized for the 1887 season. While still featured in the museum, he and his entourage were dropped from the performance, and Matthew Scott was dropped from the show.

That fall the skeleton was leased to Brandenburg's Museum in Philadelphia, a private institution similar to Barnum's earlier efforts. The hide was stored in a barn at the show quarters during the winter. Its respite was interrupted the night of November 20 when a fire necessitated it being taken outdoors. It survived, but Alice was one of three elephants consumed.

On September 16, 1889, exactly four years and a day after Jumbo's death, Professor Marshall received the following telegram: Jamestown, N. Y.  
September 16, 1889

"Western Union"  
John P. Marshall,  
Tufts College

Our man will arrive three next Friday. If delayed will notify you. To take Jumbo to Bridgeport. Please have affairs arranged to facilitate and expediate matters all possible. Wish you would apply to the fire proof process thoroughly.

Barnum and Bailey

Marina  
Bridgeport, Conn.  
September 23, 1889

Dear Professor Marshall:

Jumbo has arrived and Mr. Bailey has lost the directions you gave about the ingredients and the applications of them to Jumbo's skin so as to be fire proof and the proper color. Will you please mail me *at once* all that is necessary on this subject and oblige.

Truly Yours,  
In haste,  
P. T. Barnum

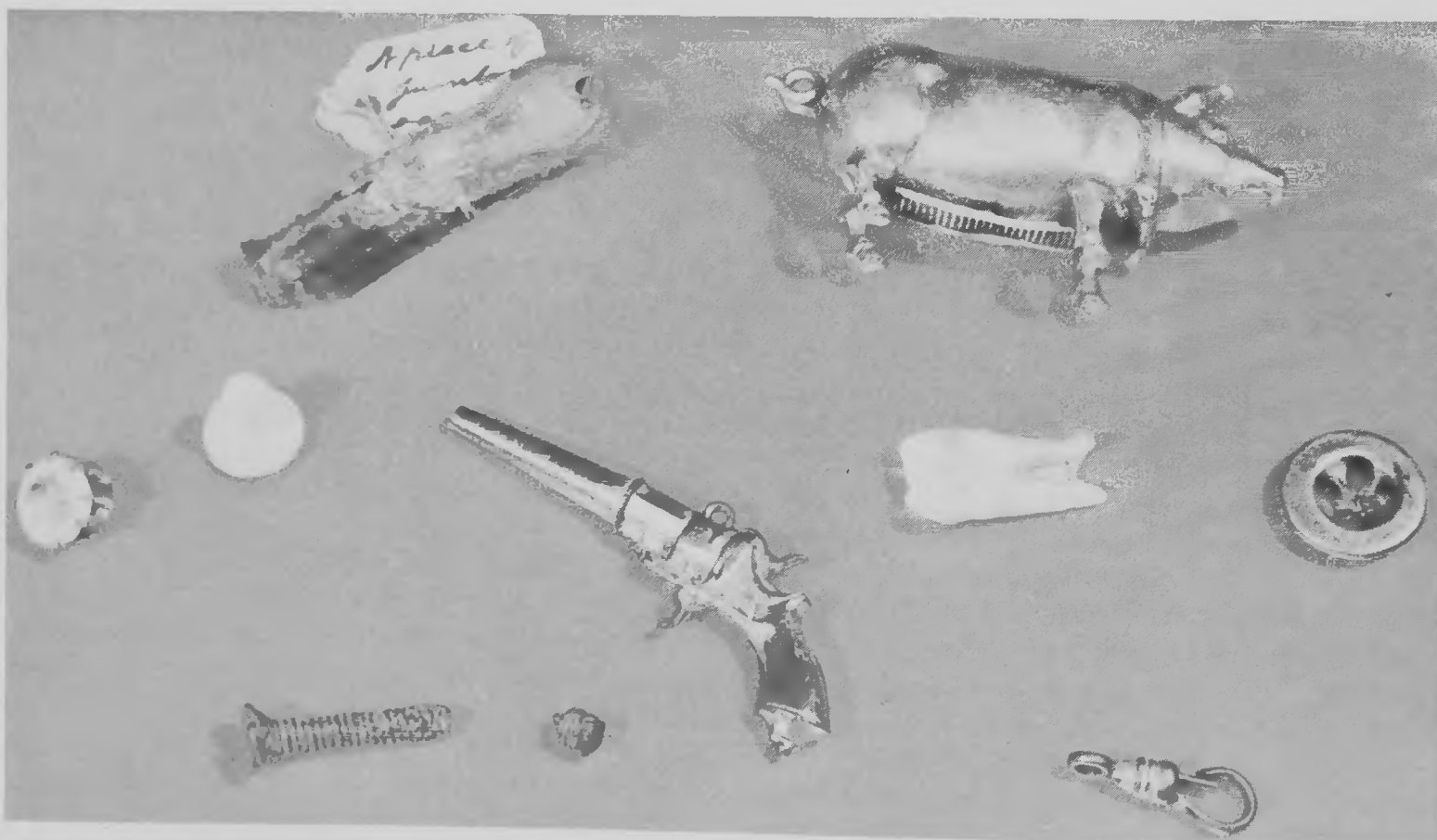


Figure 16. Items removed from Jumbo's stomach. Photographed by "Sabu" at St. Thomas Historical Museum, St. Thomas, Ontario, Canada.

Appendix II. Correspondence to and from George G. Goodwin, Department of Mammalogy American Museum of Natural History (AMNH), New York, pertaining to Jumbo (letters are at the AMNH).

The American Museum of Natural History  
New York, N. Y.

175 Summer Street  
Somerville, 43, Mass.  
November 9, 1955

Gentlemen:

As a former Mayor of Somerville, Massachusetts, in which Tufts University is partly located, I have often been asked questions about the famous Jumbo who is the Mascot of the University.

Therefore in order to be able to answer questions with authenticity both orally and in the booklet which I intend to publish, I would deeply appreciate any assistance you may give me regarding Jumbo.

Some of the things I would like to know are as follows:

- 1 When, where, why, and how did your highly regarded Museum come into possession of Jumbo's skeleton?
- 2 Was Jumbo, as far as you know, the largest elephant ever known in captivity?
- 3 What was Jumbo's actual weight? Was it made on a scale and when? The writer has come across various estimates ranging from seven tons posted in the Barnum Museum to ten and one half tons in the British press and on posters of The Greatest Show on Earth. This is quite a divergence.
- 4 Do you have any information on Jumbo's tusks? The first set that was broken off and the stubs now at Tufts?
- 5 Do you have any pictures or other data of an interesting nature?

Thanking you for any information you may be able to give me, I remain,

Gratefully yours,

*John J. Murphy*  
John J. Murphy

Mr. John J. Murphy  
175 Summer Street  
Somerville 43, Massachusetts

November 14, 1955

Dear Mr. Murphy:

Your letter of November 9 has been received and referred to me for consideration.

1. P. T. Barnum presented the skeleton of Jumbo to this museum in 1889.
2. I see no reason to assume that Jumbo was the largest elephant ever known in captivity, though it may have been the largest at the time.
3. As a matter of fact, the weight and height of Jumbo were never officially recorded. Jumbo stood about 11 feet at the shoulder and weighed between six and six and one-half tons.
4. Jumbo came to this country with the tusks cut off close to the head. At the unveiling of Jumbo's mounted skin and skeleton, held at the Power's Hotel in 1886, about a pound of Jumbo's tusks were ground into powder and used in the composition of a jelly served at the banquet. Thin slices of Jumbo's tusks were inscribed as souvenirs for favored guests. What were supposedly Jumbo's tusks were sold along with the effects of John Ringling in 1940. These, of course, could not have been Jumbo's own tusks.
5. I regret to say that we do not have any pictures of Jumbo available, but I would suggest that you read the article, "What ever became of Jumbo," Natural History Magazine, vol. 61, no. 1, p. 17, January, 1952. You can probably find a copy in your library.

Sincerely yours,

George G. Goodwin

## Appendix II continued.

Stanley Shapiro

2535 Linden Blvd.

Brooklyn, 8, N.Y.

August 14th, 1956

Dear Sir,

I know that the famous Jumbo of circus fame was killed by a railroad train and that his stuffed body is on view in the Museum to which this letter is directed, I would like to know exactly what injuries that ponderous creature suffered to have brought on his death, if he died instantly, and if one can see visible mutilations on his stuffed body.

Thank You,

Respectfully,

Stanley Shapiro

Mr. Stanley Shapiro  
2535 Linden Boulevard  
Brooklyn 8, N.Y.

August 16, 1956

Dear Mr. Shapiro:

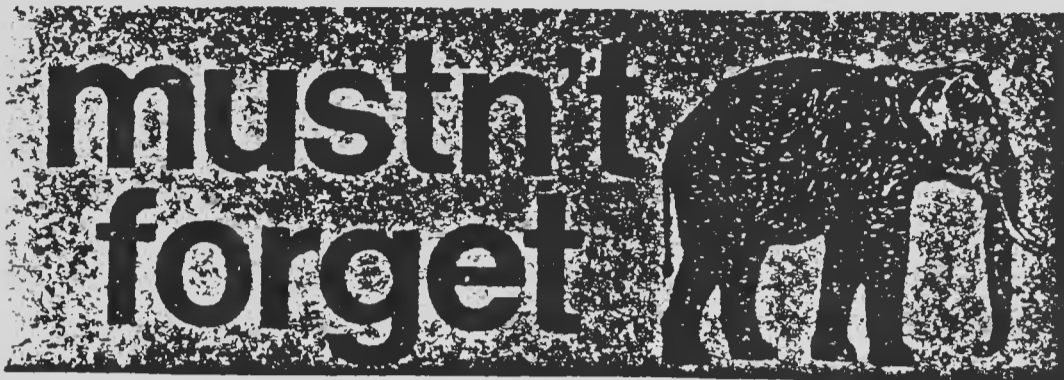
The mounted skin of Jumbo is at Tufts College, Medford, Mass. The mounted skeleton is here but there are no broken bones and no indication of a crushed skull as claimed by P. T. Barnum.

As far as I know there was no damage to the skin. Jumbo apparently had a severe blow on the head that killed him almost instantaneously. There was not any published report on the extent of internal injuries.

Sincerely yours,

George G. Goodwin

Appendix III. "An introduction to ..." by Raymond ("Sabu") Moreau [see also Scott, 1885].



SABU  
Elephant Historian  
1807 18th Street  
Niagara Falls  
New York 14305

1-716-284-0284

Introduction To AUTOBIOGRAPHY of JUMBO(S KTEPER and JUMBO'S BIOGRAPHY

Matthew Scott's one great love in his life was JUMBO. His devotion to this great beast has become legend. It is stated in certain chronicles that even after JUMBO was killed and his stuffed hide was placed on public display at Tufts College near Boston that "Scotty" would stand in front of it by the hour, patting the trunk and talking to it as if JUMBO was still alive. Although JUMBO died seventy-four years ago, his memory still lives on. I was handling elephants on the Big One the last year that they toured the country under canvas. A little girl came over to me, where I was standing in front of the line of bulls in the menagerie tent and with a cute little smile asked - "which one is JUMBO?" Here was a child who couldn't have been much older than six years of age and even she had heard of JUMBO. His life span was a short twenty-four years but in that time he became the idol of two continents. He was viewed with "awe" by thousands of humans at his great size. In no time anything that pertained to something large became synonymous with JUMBO. This autobiography by Matthew Scott coupled with JUMBO's biography by the same author is one of the most interesting documents that I have ever read and should be of great interest, not only to the men who handle elephants but also to every child and adult who has ever seen a elephant. When JUMBO died thousands cried because they thought he was gone forever but his memory has survived the passage of time. To me he was the marvel of an era that is gone but not forgotten.

SABU - September 15th/1959

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## NOTES ADDED IN PROOF

Following our attempts to trace Jumbo's heart (see page 89), we learned through a telephone conversation (December 7, 1986) with Howard Evans of the Department of Veterinary College at Cornell University (Ithaca, New York) that the heart of Jumbo could not be located but that the jar in which Jumbo's heart was kept was identified as per associated label. The jar was empty. H. Evans, however, told J. Shoshani that he saw the heart of Jumbo "...40 years ago in Stimson Hall, in a large glass jar having an opening of about 12-14 inches across." We take this opportunity to ask anyone who knows the whereabouts of Jumbo's heart, or any other parts not mentioned in this paper, to please notify us. Thank you.