

THE AMERICAN MUSEUM OF NATURAL HISTORY—ITS COLLECTIONS AND WORK—THE MOUNTING OF THE ELEPHANT "TIP."

The assertion that those who live in a city often know least about its institutions has become a truism. It is safe to say that comparatively few New Yorkers have an adequate idea of the American Museum of Natural History, which is one of New York's most notable institutions. It was founded over 20 years ago, the original law under which its charter was acquired being passed in 1871. To the original building addition after addition has been added, a new lecture hall has been built, and to-day the richness and extent of the collection is such that in the nearly 150,000 square feet of floor space, the majority of which is now at the command of the institution, barely adequate room is found for the display of the riches of the collections. Mineralogy, geology, paleontology, botany, natural history, in all its divisions, and anthropology, are the heads under which the many collections may be grouped.

In addition to what may be termed the natural increase of the specimens, many celebrated collections have been bought or presented from time to time. Thus, under vertebrate paleontology, the famous Cope collection of fossil mammals of North America has recently been purchased, representing an expenditure of nearly \$16,000. This is but an indication of the work. From many exploring and collecting expeditions, all or part of the finds are contributed to the museum. From expeditions to Peru, Honduras, Sumatra and Mexico, many unique samples have been received. The Peary Relief Expedition of 1894 greatly enriched the department of mammals and birds.

The department of anthropology, covering in its cases the cliff houses and caves of Utah, the South American Indians, mound specimens from Ohio and Kentucky and objects from British Columbia, is of special interest and richness. Another very interesting feature of the work is the department of public instruction under the curatorship of Prof. Ticknor. Here numerous lectures on travel and exploration and on subjects connected with the exhibition are given to the school teachers and the public in general.

The library now numbers upward of 30,000 volumes and many maps. Books treating of forestry and botany are in special request. Among the mineralogical specimens some samples of minerals are quite unique, from size and perfection. The Jesup collection of North American woods has at last received a permanent lodgment. It is proposed now over each of the beautifully mounted specimens of

wood to place a water color drawing illustrating the leaf, flower and fruit, together with a map showing its distribution, with printed technical data.

We illustrate the outside of the building. Since this view was taken the west wing has been nearly completed, which alone represents an expenditure of nearly \$350,000. An idea of the system of arranging the collections can be obtained from the view showing the hall of paleontology. Natural history is particularly well illustrated in taxidermic specimens in the world of mammals, birds and reptiles. One of the trophies of this department is the mounted skin of the elephant Tip, which impressive example of the taxidermist's

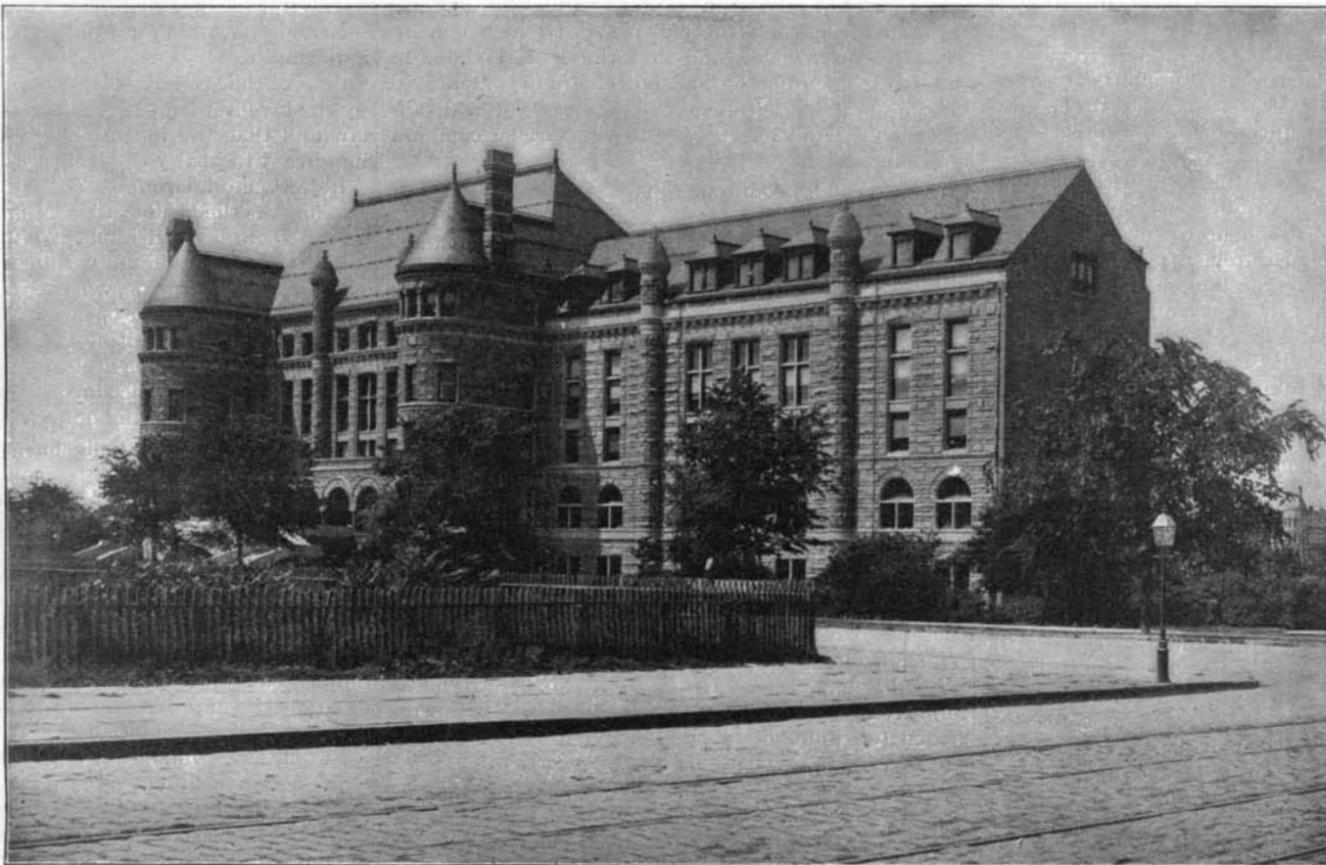
Frank M. Chapman, assistant curator; John Rowley, Jr., taxidermist.

Department of Vertebrate Paleontology.—Prof. Henry Fairfield Osborn, curator; Dr. J. L. Wortman, assistant curator; Dr. W. D. Matthew, assistant.

Department of Anthropology.—Prof. Frederic W. Putnam, curator; Marshall H. Saville, assistant curator of the archaeological division; Dr. Franz Boas, assistant curator of the ethnological division.

Department of Entomology.—W. Beutenmuller, curator.

Librarian.—A. Woodward, Ph.D.
Superintendent of Building.—William Wallace.



THE AMERICAN MUSEUM OF NATURAL HISTORY—THE MAIN BUILDING.



THE AMERICAN MUSEUM OF NATURAL HISTORY—HALL OF PALEONTOLOGY.

art confronts the visitor as he enters the building, and of whose preparation a description is given below.

The president of the museum is Mr. Morris K. Jesup. The working staff of the institution includes the following names:

Department of Public Instruction.—Prof. Albert S. Bickmore, curator.

Departments of Geology, Mineralogy, Conchology and Marine Invertebrate Zoology.—Prof. R. P. Whitfield, curator; L. P. Gratacap and Edmund O. Hovey, assistant curators.

Departments of Mammalogy, Ornithology, Herpetology and Ichthyology.—Prof. J. A. Allen, curator;

The ever attractive and popular art of taxidermy has received great development within the last few years. The taxidermist now recognizes very thoroughly in the preparation of his objects the necessity of reproducing all the natural peculiarities of the animal's form, and by the liberal use of photographs and measurements does his best to show in his finished work the most minute featured animal, developing a real facsimile of the living creature. The old system of simply stuffing the skin until it could hold no more has been abandoned, and now the taxidermist devotes his energies to perpetuating every fold and wrinkle of the skin that existed in the original animal.

Our illustrations show different stages in the mounting of the skin of the famous elephant "Tip." This somewhat famous elephant came here in 1881, embarking from Toulon under the ownership of Carl Haagenbach. By him he was sold to Adam Forepaugh, but as the animal proved too vicious for circus use, some eight or nine years after his purchase he was presented to the Central Park Museum.

Tip had always been vicious and had the death of several keepers to answer for. While in the Central Park Museum he attacked his attendant, Snyder, nearly killing him, and the death of Tip himself was determined on. After considerable trouble a large dose of potassium cyanide was administered to him, on May 11, 1893, which killed him, at the age of twenty-three years. He was of good dimensions, 9 feet 6 inches in height and 11 feet long.

It is quite usual to use some of the bones of the original skeleton in mounting animals. In Tip's case, however, the skeleton was preserved for separate mounting. Immediately after his death the skin was removed and all the flesh was dissected from the bones, and the skin after paring down was put in tan liquor. The bones were carefully prepared for mounting en squelette. For the taxidermic figure a wooden skull

and wooden leg bones were made in general facsimile of corresponding members of his frame. A profile board of heavy plank was cut out, representing the longitudinal section of the great body. It was sustained by four iron bars fastened by iron straps to its sides. Close to the bars were mounted the representative of the leg bones. This stage of operation is shown in Fig. 1. The wooden skull was attached to the profile board, and a pair of tusks from another elephant were attached to the wooden skull. This gave the extemporized skeleton in part. To the profile board curved ribs were now attached, and over these laths were nailed closely together so as to give the general contour of the body. A similar process was applied to the legs, they being brought to a cylindrical shape by laths running up and down, nailed to a framework surrounding the iron supporting bars and wooden leg bones. From the skull depended a profile board representing the longitudinal section of the trunk. This marked the second stage in the operation, and is shown in Fig. 2.

The next step was to cover the laths with excelsior, tied, tacked or glued on, according to the circumstances. Now constant reference was made to the photographs of the living Tip and to measurements. The skin meanwhile had been lying in the tan liquor for a year. It was scraped and pared down to a manageable thickness and was now tried on the excelsior covered elephant. This resulted in indicating the necessity for adding excelsior in some places and in taking it away in others. The skin was repeatedly tried on and the excelsior added or removed until the manikin was made to exactly fit the skin, which for ease of manipulation had been cut into three pieces. The excelsior covered core is shown in Fig. 3.

When this fitting of the manikin was complete a thick coating of modeling clay was applied all over the surface until the clay manikin, shown in Fig. 4, resulted.

The skin was now slung up and placed over the model, and was sewn in place with wire. Fig. 5 shows the work in progress. The trunk board had been padded out to give the approximately cylindrical section. Glass eyes were put in position, the eyes being constructed with great care to reproduce the colors of the true elephant's eye. After the tanning the skin was no longer the natural color. By the use of paint, varnish and some finishing touches, the proper color was restored to it and the true appearance of an elephant given to the whole, as shown in the final cut, Fig. 6. It now forms one of the most attractive objects in the museum, and represents a very complete embodiment of the art of taxidermy.

The use of clay and of the elastic excelsior gives the taxidermist great facilities in reproducing all the natural features of an animal. The modern school of taxidermy is specially well illustrated in the American Museum of Natural History. Thus, taking as example the walrus or the rhinoceros, it will be found that in both of these animals the large wrinkles or folds of the skin are very characteristic features. The modern school of taxidermy takes full cognizance of them, and often many hours and days of work are devoted to the final life-giving touches and reproduction of minute features. The stuffed animal is no longer a mounted skin; it is the reproduction of the animal itself, upon which every resource at the taxidermist's command is lavished.

Recent Patent and Trade Mark Decisions.

Osgood Dredge Company v. Met. Dredging Company (U. S. C. C. A., 1st Cir.), 75 Fed., 670.

Combinations and Aggregations.—The general rule of law is that the conception of a combination which merely brings together two or more functions to be availed of independent of each other is an aggregation and not a combination, and there is no invention in it.

Dredging Machines.—The Osgood patent, No. 257,888, for a dredging machine having a boom attached to operate either a scoop for hard soils, or a "clam shell" bucket for soft soils, has been held void as to claims 1 and 3 because it is a mere aggregation and not a combination.

Validity of a Patent as Affected by Prior Declarations of Defendant.—The fact that the defendant by advertisements and other publications has maintained the patentability of machines of the same general character as that for which he is charged with infringing is entitled to little weight in determining the validity of the patent, because whether the patent is valid or void is a matter of public concern and neither the inventor nor the infringer can be permitted to substitute his own opinions for the judgment of the court which represents the public.

Expert Testimony.—An expert witness in a patent case has no right to answer any mixed question of law and fact, and it was improper for the expert to state as his opinion that a certain alleged invention belonged to that class of inventions described by the term "new article of manufacture."

A Court Declaring a Patent Void on its Own Motion.—Because the court represents the public, and the validity of the patents is a matter of some public concern, a court has a right on its own motion to adjudge

a patent invalid even if the question is not raised by the parties to the case.

Blount Manufacturing Company v. Bardsley (U. S. C. C. A., 2d Cir.), 75 Fed., 674.

Interpretation of Claims.—Where certain claims of a patent described a shaft as connected with a piston "to operate the same," and "to operate the same and be operated thereby," but failed to show how the connection was made, it was held that the connection was not necessarily an attachment incapable of separation, but such a relation of parts as would produce simultaneousness of motion between the shaft and piston, and, therefore, such claims cover a cam connection.

Door Checks.—The Blount patent, No. 289,380, for door checks, having a liquid regulating cylinder separated from the actuating spring and having a bypass, has been held valid and the second claim restricted to the combination shown, and his patent, No. 485,357, for a door check and closer, has been held valid and claims 2 and 3 restricted to the specific combinations described.

American Soda Fountain Company v. Green (U. S. C. C., Pa.), 75 Fed., 680.

What Constitutes a Combination.—A patent cannot be declared void because it is not a combination when the object to be attained by the apparatus would not be accomplished except by the mutual relation and the co-operation of the various parts.

Soda Water Fountains.—The Whitting patent, No. 414,279, has been held valid.

Long v. Polk Manufacturing Company (U. S. C. C. A., 1st Cir.), 75 Fed., 835.

Effect on Patent of New Functions.—The discovery of new uses or functions of a patented device has no effect upon the patent regardless of what the patentee may have claimed in the patent to be the functions and advantages of his invention, for the patent is on the mechanism. The discovery of a new function, therefore, cannot be used to give the patent a breadth not shown on its face.

Road Vehicles.—The Long patent, No. 281,091, for an improved steering head for road vehicles has been construed and limited.

Beach v. Inman (U. S. C. C., N. Y.), 75 Fed., 940.

Effect of Prior Decisions.—When a patentee has obtained a final decree after years of arduous litigation, sustaining the broad claims of his patent, such decree should protect him against all intruders who seek to use the actual invention by making changes in form to avoid the claims and specification; the specification and claims are not to be scanned with a hostile eye after such decision.

Paper Bag Machine.—The Buck reissue, No. 11,167, for a machine to attach stays to the corners of paper boxes as to its first two claims is again sustained and is infringed by a machine having only differences of form and in substance.

Ex parte Ernest (Commissioner's Decision), 76 O. G., 1417.

Amendment to Drawing.—If the examiner thinks the proposed amendment to a drawing involves new matter, the change in the drawings should not be allowed to be made until not only the question of new matter has been finally determined but whether the claims based thereon will be allowable, so that all questions may be settled at once on appeal.

Rewriting the Specification.—Although an application may be confused and informal, yet if the claims can be understood from the description and drawings, action should be taken on the merits.

Ex parte Stern (Commissioner's Decision), 76 O. G., 1417.

Entering Amendment to Application.—Where an amendment to an application for a patent cancels some claims and amends others, the examiner cannot admit the amendment so far as it relates to the cancellation of claims and refuse to admit it so far as it relates to the amendment of claims, but must either enter or reject the amendment as a whole, so as to enable all questions to be settled by appeal.

Ex parte McFarlane (Commissioner's Decision), 76 O. G., 1418.

Dispute as to Ownership of Patent.—The Patent Office is not the proper place to dispute the ownership of a patent, for it has no judicial functions for the determination of private rights, and where the title is disputed the patent should be granted to the inventor, leaving the question to be determined by the courts.

Pell v. Pierpoint (Commissioner's Decision), 76 O. G., 1573.

The Question of Novelty in an Interference Case.—Where the question of priority has been decided without the suspension of an interference proceeding, the question of patentability of a claim involved in the interference will be considered *ex parte* and not *inter partes* by the primary examiner.

Ex parte Grosselin (Commissioner's Decision), 76 O. G., 1573.

Affidavit Against Foreign Patent.—Where a foreign patent is cited against an application, an affidavit to overcome such patent must state facts showing that

the invention was completed in this country before the date of the foreign patent.

Drawbaugh v. Seymour (U. S. C. C. A., D. C.), 77 O. G., 313.

Telephone.—The applications of Daniel Drawbaugh, No. 111,554, filed 1883, and No. 536,530, filed 1884, have been rejected on the ground that Drawbaugh was not the inventor.

Affidavit Against Foreign Patent.—An affidavit to overcome a foreign patent cited against an application must not fail to state facts as to the time and circumstances of the conception of the invention and its development to completion prior to the filing date of the records.

The Burden of Proof in an Application for a Patent.—In an application for a patent the burden is on the applicant to show that all the conditions and provisions of the law have been fully complied with whereby the inventor is justly entitled to a patent under the law and that the invention is sufficiently useful and important to justify the issue of the patent.

Rejection on Grounds not Specified.—The Commissioner is the head of the Patent Office, and has the power to grant or withhold a patent, and if there be any reasonable ground within his knowledge why a patent should not issue, whether a specific objection be raised by the examiner or not, it is his duty to refuse the patent, and it is not necessary that a duly certified transcript record of the decision of a federal court be filed in the Patent Office in order to render it competent for the office to take notice thereof.

Cushman v. Lines (Commissioner's Decision), 77 O. G., 153.

Design for Oil Cans.—A slight and apparently immaterial difference in the appearance and design of oil cans is patentable.

Experiments on Animals and on Man.

Thiersch's experiments on cholera, which caused the death of fourteen mice and proved that cholera is communicated by swallowing particles of cholera discharge, have been an important factor in the sanitary legislation of every civilized country.

Two of the London water companies experimented with cholera polluted water upon 500,000 people, causing the death of 3,476 human beings in 1853-54. This is the popular accidental experiment which antivivisection writers tell us to wait for, and which they say is sent by Providence to teach men physiology. Thiersch made the same experiment upon fifty-six mice, the conditions being accurately determined and scientifically controlled, and with the death of fourteen mice gave the world more exact information about the contagion of cholera than all the cholera epidemics recorded in history. This is the scientific experiment which we are told should not be made.

The antiseptic method, which we owe in so great a measure to the vivisectional experiments of Joseph Lister, is past all reasonable controversy and we may refer to it here. It has come to be used in hospitals generally, and has reduced mortality from surgical operations to one-tenth of what it was before. Any one who has seen even a few cases of antiseptic surgery will readily agree with Dr. Keen when he says: "Sir Joseph Lister has done more to save human life and diminish human suffering than any other man of the last fifty years." Still, Lister was obliged to leave England to continue experiment in his merciful work after the passage of the restrictive law in 1876.

In the Tübingen Hospital died from amputation before introduction of Lister's method and after:

	Per cent.	Per cent.
Of lower limb.....	48.5	8.2
Of upper limb.....	80.6	2.9

—Appletons' Popular Science Monthly.

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