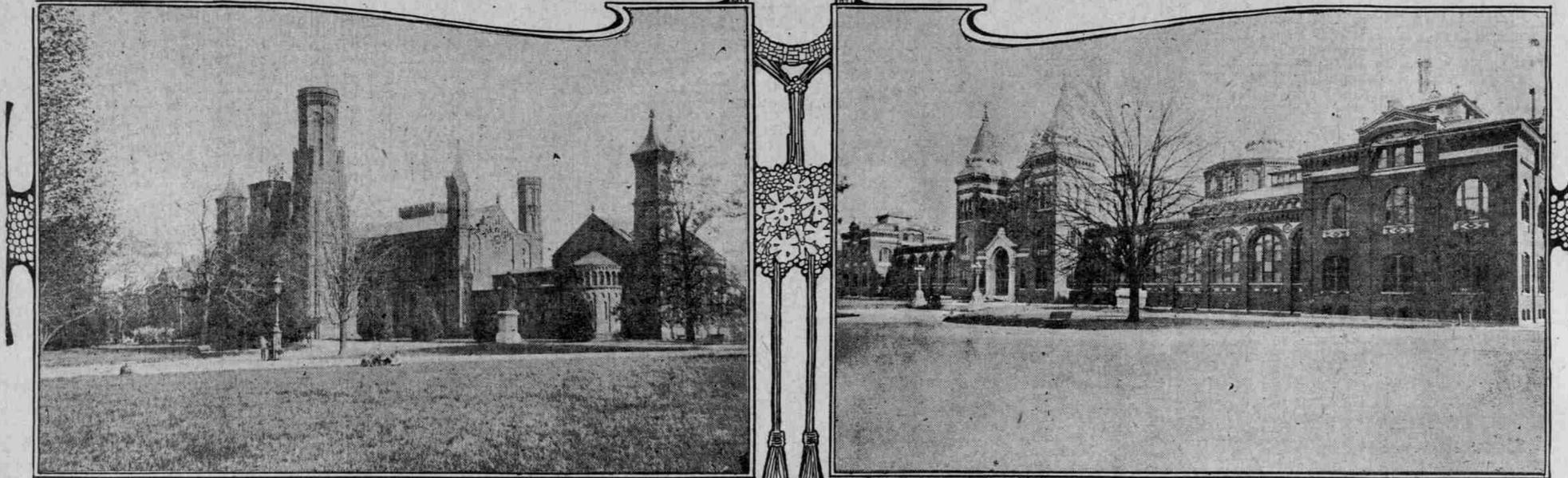


WHAT THE SMITHSONIAN INSTITUTE IS DOING



THE SMITHSONIAN INSTITUTE
WASHINGTON D.C.

U.S. NATIONAL MUSEUM

THE operation of the Smithsonian Institution is unique among the establishments of the United States Government in that, deriving its own proper support from the Smithsonian fund, a private foundation, it has from time to time had placed in its charge various branches of Government scientific work. These branches, to be sure, are all of them outgrowths of researches initiated through the institution and later adopted and fostered by Government aid. The practical importance of several former investigations of the institution has been realized to such an extent that, like the Bureau of Fisheries, the Weather Bureau and perhaps biological bureaus now included in the Department of Agriculture, they have been weaned entirely and conducted as separate branches of the Government service.

As the Smithsonian Institution now operates, there are included under its administration the National Museum (and in connection with it the National Gallery of Art), the Bureau of American Ethnology, the system of international exchanges, the International Catalogue of Scientific Literature, the Astrophysical Observatory and the National Zoological Park.

From the income of the Smithsonian fund and from contingent funds special researches are conducted in fields not covered by other Government scientific bureaus, whether the fields be the measuring of pressure and temperature at high altitudes, the studying of eel-pelae, the tracing of geologic strata, or determining the principles of flight. And for the "increase and diffusion of knowledge among men," the words of the Smithsonian bequest, many scientific and popular works are issued to libraries and institutions throughout the world.

Aided partly by Smithsonian funds and partly by special Government appropriations, several investigations are at present in the field. Mr. C. W. Gilmore, of the National Museum, is in Alaska undertaking paleontological explorations with a special view to securing specimens of fossil mammals. Mr. Gilmore's researches, which follow upon discoveries made several years ago by Dr. Madren, extend over two seasons and are confined to the Yukon Basin and Buckland River region.

Under a very recent Smithsonian grant Mr. Bailey Madsen, of the United States Geological Survey, is directed to proceed to Europe for a thorough study of the puzzling geologic structure of the Alps and the theories put forward by European geologists.

Will Observe Total Eclipse.

Plans have been made for a Smithsonian eclipse expedition to the 4th parallel in the Southern Pacific, the total eclipse of the sun to occur January 3, 1908. Mr. Abbott is to observe the heating effect of the sun's corona and to decide, if possible, more particularly the causes of coronal light. Mr. Abbott will work with Professor W. W. Campbell, of the Lick Observatory.

In connection with examinations of the boundary surveys in progress in the United States part of which has been placed in charge of Mr. Tittman, of the Coast and Geodetic Survey, and Secretary Walcott, of the Smithsonian Institution, will make a geological study of the Cambrian and pre-Cambrian sections of British Columbia, and endeavor to trace the continuance of the rocks comprising them southward into Montana and Idaho.

Investigations along technical lines are being conducted through the Hodgkins fund by a number of correspondents of the institution. A Hodgkins grant was recently approved in favor of Dr. R. von Lendenfeld, of the Zoological Institute at Prague, to enable the continuance of his studies of the organs of flight of birds and insects, which, in this period of experimenting in aerial navigation, are of vital present interest.

National Gallery of Art.

The most comprehensive Government branch of the Smithsonian Institution is the National Museum, which also includes the National Gallery of Art, under the immediate direction of Mr. Richard Rathbun. Interest in this direction is most lively upon the subject of the erection of the new museum building, which it is hoped will be under roof by the close of this calendar year. In the new building it is planned to house mainly the scientific collections, which include natural history, geology, ethnology, archaeology and allied subjects. The present museum building will then be turned over to the departments of the arts and industries, and the building of the institution itself will become a museum of fine arts and until the growth of collections demands larger quarters, will be the seat of the National Gallery of Art. Since the National Gallery during the past year has had a remarkable and surprising growth through the gifts of William T. Evans and others, there is increased hope of those directly in charge that not far in the future the United States Government may boast of a gallery of American art truly National in its character.

While the Museum is the custodian of all Government collections, and while to the public its main feature

is the exhibition of characteristic objects in its several divisions, yet the law demands that these materials shall be classified and properly arranged, a task which involves a large amount of research work. Consequently the museum scientific staff is made up, so far as means allow, of experts on the several subjects represented. The scientific work is carried on continuously, and results in many important contributions to knowledge. Little actual field work, however, is done, the museum relying for its material upon the regular Government expeditions and contributions from thousands of private sources—gifts and exchanges. Some of the assistants in the museum are expert field workers, and while the finances for this purpose are very limited, opportunity often arises, especially through explorations by the Geological Survey, the Bureau of Fisheries, the Bureau of American Ethnology and the Department of Agriculture, to engage in work of this sort.

Curious Research.

Research is continuous under Professor Otis T. Mason, of the department of anthropology. Dr. Frederick W. Brown, of the department of biology, and Professor George P. Merrill, of the department of geology.

Professor Mason's researches are in the fields of physical and cultural anthropology. In the former, study of the crania, skeleton and brain, but especially and comparatively, the latter, study of everything resulting from the development of the culture of mankind. In this connection, much time this year will be employed in examining material forwarded to the museum by W. L. Abbott, who has made extensive collections in the rich anthropological fields of Malaya, Borneo and the Philippines by the field workers of the bureau of ethnology, and by various other correspondents and associates of the museum.

Puzzling Investigations.

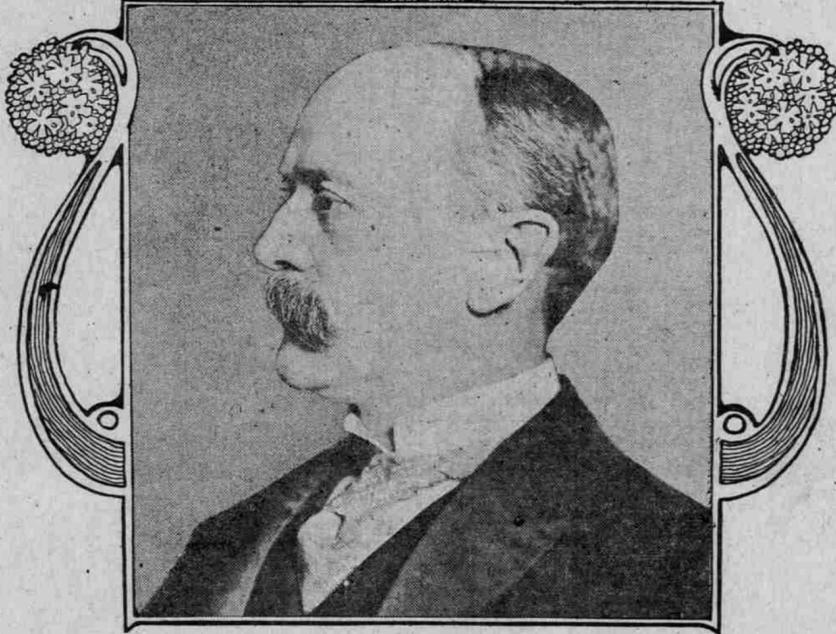
In the department of geology technical studies of the properties of various minerals forwarded from many Government explorations and surveys are being carried on by Mr. Wirt Tassin. Geological problems must be solved, and it often falls to the lot of a geologist in this department to examine close range earth structures which have puzzled other scientific explorers. Professor Merrill has just returned from Canyon Diablo, Arizona, with mineralogical and geological data to determine the origin of a peculiar crater-like formation in the earth's crust. In this department the American Pompeii about the historic Casa Grande ruins in Arizona has recently attracted much attention. Mr. James Mooney among the Cheyenne, Kiowa and Kiowa-Apache tribes of Oklahoma and Indian Territory; Dr. John A. Swanton in the South; Mrs. M. C. Stevenson in Zuni; Mrs. E. N. B. Hewitt among the Iroquois; and Dr. Cyrus Thomas in Mexico and Central America, will continue to study the life and character of these first Americans.

Studying Indians.

The Bureau of American Ethnology, under the charge of Mr. H. H. Holmes, is engaged entirely in systematic researches among the tribes of American Indians. These include the scientific classification, distribution and history of the tribes and the study of their physical and mental characters, languages, social institutions, religions, arts and industries, economic resources and welfare, in short everything pertaining to the American Indians. The scope of the bureau has lately been extended to include Hawaii, a bibliography of that island being now in progress. For the last few years the energies of the staff have been largely devoted to the completion of the Handbook of American Indians, an encyclopedia of all that ethnologists know of the subject. It is probably the most ambitious work ever published by a government bureau.

Besides working on the handbook, the scientific staff has been constantly in the field gathering material of a scientific character. The explorations of Dr. J. Walter Fewkes in the unearthing of the prehistoric ruins of the Hohokam and Grandditch mounds in Arizona has recently attracted much attention. Mr. James Mooney among the Cheyenne, Kiowa and Kiowa-Apache tribes of Oklahoma and Indian Territory; Dr. John A. Swanton in the South; Mrs. M. C. Stevenson in Zuni; Mrs. E. N. B. Hewitt among the Iroquois; and Dr. Cyrus Thomas in Mexico and Central America, will continue to study the life and character of these first Americans.

In the international exchanges, popularly less known features of the institution's work, the Smithsonian Institution acts as an international clearing house for scientific and other literature. It is through these exchanges that men of science in this country are kept continually in touch with the work of investigators in other parts of the world and through which other investigators are informed of the work and discoveries of American researchers. The exchange system now includes correspondents in



SECRETARY CHARLES D. WALCOTT
OF THE SMITHSONIAN INSTITUTE

every civilized part of the world, numbering in all above 60,000, working in unison with other international exchange systems in other countries. The Smithsonian Institution is at present using its influence with a view to securing the establishment of like systems in England and Germany.

The International Catalogue of Scientific Literature is an interest which the institution has recently made an independent branch of its work in co-operation with other nations every scientific publication in the world is classified and placed on record according to an international code. The catalogue is invaluable to specialists engaged in scientific research, for by its help the work and results of every man at all connected with science in a civilized nation may be consulted with comparative ease.

In the Astrophysical Observatory, established in 1890, the institution has a department which for a long time was

unique in the United States. Treating the physics rather than the mathematics of astronomy—what was called the new astronomy—the whole energy and skill of its staff are given over to a study of solar radiation and similar problems. The practical value of this work is evident from the results obtained showing a tangible and determinable relationship between the amount of heat given off by the sun in a season and the temperature of the earth during the following season, the details of which are set forth in the annuals of the observatory, the second volume of which is about to be published.

Measurements in Washington and at Mount Wilson, California, of what is known as the "solar constant," the reflection of clouds, and the amount of sky radiation, are experiments which, worked out, may well be incorporated in the routine of the Weather Bureau. Mr. Abbott, who is in charge of the observatory besides studying the solar eclipse next January, intends beginning the investigation of the radiation of the earth to space, by measuring the transmission of our atmosphere for the rays of great wave length which are emitted by a body at the temperature of the earth. This is to be done by observing the solar spectrum and by observing the transmission of rays from bodies at high temperatures through layers of air of considerable length and of varying water vapor contents.

And finally there comes under the supervision of the Smithsonian Institution the National Zoological Park, which, while of great popular interest, is at the same time very valuable to students of biology in all its forms. Over a thousand animals, gifts and purchases from very many sources, are now housed in the park which comprises 157 acres of hilly wooded land two miles from the center of Washington, the beautiful driveway of the many who come to the capital to live.

are turned down quite low, to the third or fourth button on the waistcoat, where the coat is held in position by two onyx links mounted in metal. He still adheres to the style he inaugurated, of having his trousers creased at the sides, instead of at the front—a style which is slowly winning a hard, hard battle against the old custom.

New Wrinkles for the Sterner Sex.

A patent has been taken out for a new method of keeping the creases in trousers. It is claimed to be practical and is formed by silk threads sewn down in the legs of the trousers. Another device consists of either a whalebone or steel band, very light and unseen, that is fastened with projecting points inside the bottom of the trousers to prevent wear and keep shape. The Teddy bear idea, for the youngsters, has extended to bathrobes, crib covers and is getting extremely popular in children's hats.

The Early Use of Forks.

Chicago Journal. The earliest mention of forks was in "Crudities," a singular book of travels by Coryates, published in 1611. "The Italians, and most strangers that are cornorant in Italy, do always, at their meals, use a little fork when they eat their meat." Queen Elizabeth was the first English sovereign to use one, and her subjects condemned the fad as a silly affectation.

Nature Speaks.

I saw an acorn on the ground
And in my soul a thought awoke;
The way from root to leaf I found
And planted there a mighty oak.

The million other nuts that lay
Spread all about were naught to me;
I saw them withering in decay
While from the one I formed my tree.

I saw an infant in its play
Where all unnumbered children ran;
Once more my eager will held sway—
Of this one boy I made a man.

That death, disease and awful we
O'ertook his brothers on life's sea,
I did not even choose to know
This one was more than all to me.

So from remotest time have I
Selection from earth's offerings made:
To pick, to choose, or to pass by—
'Tis thus my acorn of life is played.

—L. S. Waterhouse.

Blue and Plum for Men's Fall Dress

Some of This Season's Fancies for the Fastidious.

Evening Dress This Winter for the Smart Young Element and Lively Elderly Men Will Border on the Extreme in Cut, Color and Decoration.

The new dress cloth colors are not quite pronounced enough to be distinct from black in the evening. The popularity of blue and plum in dress vicuna may become quite noticeable with the most fastidious of the fashionables who elect to parade every whimsicality of the mode. For conservative dressers partial to the elegance of simplicity lines and fabrics will be fashioned pretty much on familiar lines, says Chicago Apparel Gazette in the first October issue.

Dinner Jacket in Cambridge Gray.

Cambridge gray drapes, faced with black corded silk, pockets slightly vertical, cord welled, sleeves finished with turned-back welled, open vent closing with one-link button, the bottom of the front opening from the lower of the two buttons, slightly rounded points and silk-faced collar are some of the very newest wrinkles that will be seen at stage this Winter. With the more formal dress coat general construction is less changed even than the tuxedo, excepting in some details designed to add to its smartness, such as well tapered skirts, greater breadth and length of the lapel, which is decorated with serpentine braid. Of note is a narrow breadth of cloth between the silk cord edging, the Ottoman silk facing and the edge of the lapel, which is decorated with serpentine braid—a very contrasty effect. This narrow cloth showing on the facing is also affected in dinner coats.

Newly Shaped Waistcoats.

The opening on waistcoats this year is more of a V than a U shape and pointed at the bottom. They are of white amure silk, closing with small pearl buttons and have a collar. For dinner wear the waistcoat is of dove-colored silk with design, and follows the style of the more formal garment. Trousers remain nearly

Braided Morning Coats.

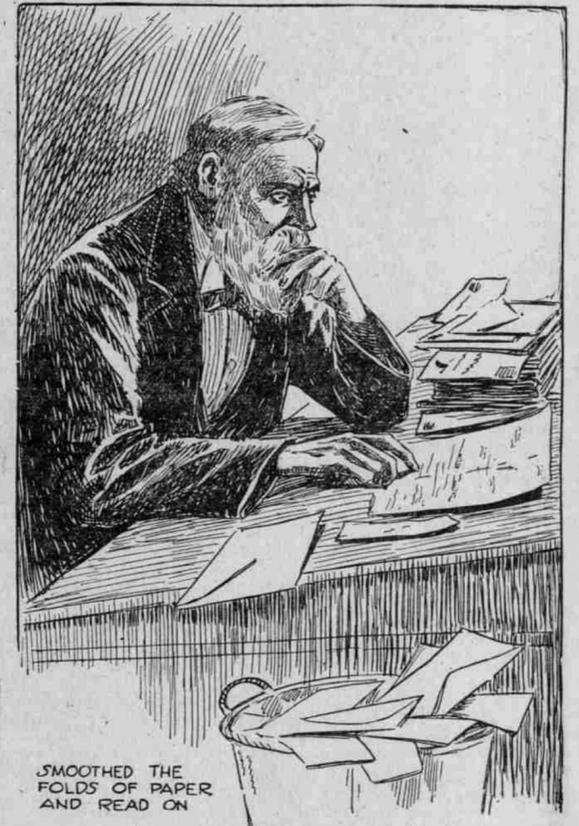
Braid binding and corded edges come into greater prominence and will be seen this season on morning coat, full frock and Chesterfield in black, Oxford and Cambridge gray, closely shorn, dull finished fabrics, the cord-bound morning coat is the latest. Mousses, Saxones and unfinished fabrics in black and gray are modish, a medium between tight waist fitting and loose garments, moderately defining in form. The cutaway follows its same general lines, closes with a low opening, two or three buttons, well-rounded skirts and cut away decidedly to the crease of the trouser.

Bright Hues Popular.

So great is the call for lively colored accessories, such as handkerchiefs, cravats, half-shoes and ahirts, that in some lines the retailers are having a scramble to keep their shelves filled with shades that happen to strike popular fancy. Browns, tans, greens and combinations of these colors, with red, heliotrope and purple are in all the stylish displays. In clothing and hats, particularly, the craze for brown and tan has gained strong headway. Hatters have been hard pressed for brown trimmings on account of the demand, while the clothing men have in many instances cleaned up their stocks in the more popular shades and have had difficulty in getting enough. All this is taken as reason to believe that these tones will get a big headway next Spring. Some very freakish effects are purchased and worn by a certain few, but the well-dressed man is preferring the new colors and cuts in moderation.

Some British Ideas on Dress.

King Edward continues to be the fashion arbiter for some of the best dressers in England, and on the continent and even in this country. At present his majesty wears a frock coat with very wide lapels of silk. The points of these



SMOOTHED THE
FOLDS OF PAPER
AND READ ON

In designing the park, the animals are retained in surroundings as nearly natural as has been found compatible with safety. It is the plan of Dr. Frank Baker, superintendent of the park, to construct within the year a much needed special laboratory building and to make a number of other improvements to the park both with a

Has Constructed Artificial Universe

Great Hollow Wheel Made of Plate Glass and Steel.

Professor Camillion Doddridge.

DR. CAMILLION DODDRIDGE, an astronomer, of Palestine, North Carolina, owns an artificial universe, which he constructed himself. Dr. Doddridge's planetary system is a wonderful thing and savants from all parts of the country have visited him and examined it.

In making it he constructed a strong box of plate glass and steel, like a great hollow wheel 20 feet in diameter and 6 feet across its axis, and standing upright. Through the center of the wheel he put a shaft attached to a series of engines and boilers and on the end of the shaft, in the center of the wheel, he placed a large number of strong magnets, forming a complete circle around the shaft, five feet in diameter and one foot thick and covered on the perimeter with all the soft steel filing that the magnets would hold in place.

Then he removed the air from the inside of the great circular box, leaving a perfect vacuum, the steel and plate glass walls easily sustaining the pressure of the outer air, although its force is something enormous over so large a surface, especially the sides, 20 feet across, and which are fortified by steel cables on each side, attached to solid posts.

Above the wheel immense magnets are placed in position, in a half circle around the circular box, being strongest at the top and declining in strength the farther they reach down the sides and being intended to counteract the force of the attraction of gravitation and to tend to almost rob objects inside the box of all weight.

When this preliminary work was completed, the shaft through the box was set in motion, and this motion very gradually increased. After a long time the first result was obtained in that a flake or layer of the steel filings was broken away from the outside of the inner wheel of magnets and the centrifugal force flung it into the open space, where it immediately drew itself together into a

ball which revolved around the central shaft in exactly the same manner as the planets revolve around the sun, being held in suspension by the counteracting effects of the large magnets above and the attraction of gravitation from below, and being continually forced out from the centrifugal force which, acting on it from the central wheel and the center of a cord, kept it out away from the center almost exactly six feet.

The speed of the shaft being still increased, another flake or layer of the filings was thrown off and immediately drew together into a ball, revolving about the shaft as before, and this was kept up till five had been thrown off, but by this time the speed of the shaft was such that the first ball was driven out against the outer side of the box and destroyed, thus leaving only four balls, or "planets," revolving about their artificial "sun," but these have now been revolving with absolute regularity for some time, the infirmities of one at a distance of one foot from the central wheel and the other one a little over five feet. They also revolve on their own axes as they fly about the center, and, with the exception that there is no planet with a belt, and that none of them have attendant moons, they reproduce all the conditions shown by the earth and the other planets of the solar system.

Town Without Taxes.

Harrieville, the county seat of Ritchie County, West Virginia, will be without any municipal taxation this year for the first time in the old town's history. This announcement has just been made by the Mayor, Romeo H. Proer, a former Attorney-General of the state. Harrieville owns its own electric lighting plant, and the profit from its operation, combined with the interest on the town's money in the banks, will afford ample revenue for all estimated municipal expenses, so that no corporate tax will be laid whatever. No other town in West Virginia ever enjoyed this distinction.