

electrical potential. Those systems which have been somewhat studied have all been solid-liquid systems in which the particles were allowed to fall through the liquid under the force of gravity. This is true of Dorn's original observations, as well as the later work of Stock,<sup>8</sup> who obtained "sedimentation potentials" of the order of 80 volts, when quartz powder was allowed to fall through a 2-meter column of toluol. No formula has as yet been devised whereby the  $\zeta$ -potential can be calculated from the observed and measured "sedimentation potential" difference which exists across the electrodes. A study designed to develop a correct formula is already in progress in our laboratories.

From the foregoing there can be but little doubt but that the "atmospheric electricity" effects observed by Canfield during the sand storms are analogous to the sedimentation potential observed in liquid-solid systems. In the sand storms the force moving the particle is the wind instead of gravity, the viscosity of the air is much lower than that of a liquid system ( $\eta = \text{ca. } 1900 \times 10^{-7}$  at  $20^\circ$ ), the specific conductivity of dry air is extremely low, the dielectric constant of air is low (ca. 1.0), so that if a formula similar to (4) should hold, the system is such as to favor the production of high potentials, the magnitude of the potential which is developed being influenced by the force of the wind (P) and the magnitude of the electrokinetic potential ( $\zeta$ ) on the surface of the sand particles. Of course, relative humidity will be a factor, since this would affect the dielectric constant, the viscosity and the conductivity of the air.

It is surprising that this source of "atmospheric electricity" has not been earlier recognized. Falling rain drops or the rapid motion of any charged particles through any medium which is a poor conductor of electricity should produce this effect. Probably the "static electricity" which occasionally causes explosions in sugar refineries, flour mills, starch factories, etc., may result from similar causes, for a relatively high electrical potential should be generated whenever dry powders are allowed to flow at high velocity through dry air.

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#### WRECK OF THE ARCHEOLOGICAL DEPARTMENT OF THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA

THE sale of the Clarence B. Moore collection by the trustees of the Academy of Natural Sciences of Philadelphia and the concomitant destruction of the

academy's archeological department call for explanation. The Clarence B. Moore collection is the finest, most comprehensive and best documented assemblage of Indian antiquities from the mounds and cemeteries of the southern states. It is now in the possession of the Museum of the American Indian, Heye Foundation, of New York City.

The facts, as far as known, are these.

On December 1, 1928, it was announced that Mr. Charles M. B. Cadwalader, a trustee of the academy, had been made managing director of the academy—an office not created until new by-laws were passed on January 15, 1929. The managing director was without museum experience, and his first official inspection of the archeological department revealed him as ignorant of the value and importance of its collections. He summoned Mr. Moore to a conference, ostensibly to discuss the cleaning of his cases, which, according to his contract with the academy, were not to be opened in his absence. Owing to his departure for Florida, Mr. Moore was unable to meet Mr. Cadwalader.

Some weeks later, the managing director began inquiries as to the donors of the academy's archeological and ethnological collections—their residence, if living, their heirs, if dead.

On February 28, notice was served to the scientific staff that the academy's stock of publications was being moved to the top of the book-stack—one hundred copies of each part of the "Proceedings" and seventy-five of each part of the *Journal*—and the remaining "surplus stock," amounting to several tons, would be destroyed.

The editor, Mr. W. J. Fox, called Mr. Cadwalader's attention to the fact that Mr. Moore's "Reports," making twenty issues of the *Journal*, had been paid for entirely by Mr. Moore. To this, Mr. Cadwalader replied: "Mr. Moore is in Florida and we can not reach him. We will say nothing about it." At Mr. Fox's suggestion, the present writer sent Mr. Moore an offer of as many sets of his "Reports" as he should wish to request. To this, Mr. Cadwalader later agreed.

The "surplus stock" of the academy's publications was saved from burning or defacement only by the protest of the united scientific staff, and they are being sent out to scientific institutions.

In March, the entire east end of the archeological hall was ordered cleared. Archeological and ethnographic material from thirty cases was sent to storage in the rather leaky old museum. This was to make space for proposed groups of sheep and goats. At this time, the managing director stated that the entire archeological hall would be used for mammal groups and that no other exhibition space would be provided

<sup>8</sup> M. J. Stock, *Bull. intern. acad. sci. Cracovie*, 1913, p. 131; *Anzeiger Akad. Wiss. Krakau (A)*, 1914, p. 95-106.

for the archeological department, unless money were procured for it. The assistant curator called his attention to the half million dollar bequest that had come with the R. H. Lamborn Mexican archeological collection.

Early in April, the managing director came to the assistant curator in charge of the department, questioning as to the catalogs, the labels, the relative size of collections, the existence of other archeological collections anywhere on the premises, and ended by ordering the catalogs brought to his office that he might "familiarize himself with them." There they remained for about a week.

On April 17, Mr. Moore returned from Florida, and, at Mr. Cadwalader's urgent request, came on the following day to a consultation at the academy. Before going to the director's office, he asked the assistant curator to show him what had been done with the Vaux archeological collection and the other material—chiefly Haldeman and Gottschall—which had been sent to storage. His comments were brief and bitter.

On Monday, April 29, the assistant curator was summoned to the museum to "tell Mr. Heye what is under Mr. Moore's cases." He was found, notebook in hand, among the cases of ethnographic material, and his questions related as much to these as to Mr. Moore's. His mover was with him.

A flying line of inquiry to Mr. Moore brought the following reply:

Yes, Mr. Heye has the Moore collection.

Of course, I regret the transfer of my collection to New York, the fruit of thirty years' hard work of Dr. Miller and myself and very heavy expense.

The academy is now wholly devoted to the lower animals and the floor on which the archeological specimens were is needed for natural history groups. The Vaux archeological collection, after the death of Mr. Vaux, the trustee, was moved out and I felt confident that, at once, after my death my collection would go to undesirable quarters, perhaps even into storage.

As it is, my collection goes to a museum wholly devoted to archeology and ethnology of the American Indian, where it will be properly displayed and cared for. I regret to see it leave the city, but it is Hobson's choice.

Meanwhile, the assistant curator went on Tuesday to Mr. Cadwalader with the query: "Are the cases included in the sale of the Moore collection?" Beneath them was stored the famous Morton collection of crania, and provision would have to be made for its care.

He demanded: "Who told you the Moore collection was sold?"

"I had it from Mr. Heye."

"You were not supposed to talk to Mr. Heye.—Mr. Heye was not supposed to say anything about it.—Yes, the Moore collection has been sold, and with it goes all the American Indian stuff, North American, South American and Central American: that means all the Haldeman collection, all the Gottschall collection, all the Peary collection—everything that is not bound by the terms of gift. I do not know what we shall do with the Morton collection—Mr. Heye does not want it.—The catalogs are to be sent along, that Mr. Heye may get what information there is in them. Mr. Heye's trucks will be here next Monday morning. They will drive into the interior court and load there, directly from the museum.—Furthermore, there is to be no publicity—no talk either inside or outside the academy."

To the assistant curator's reply asserting freedom outside the academy to do what was deemed right, the alternative was given: silence or immediate dismissal.

The week was spent by the assistant curator in saving the collection of the American Philosophical Society, deposited in 1879, and intercalated with the academy's series.

On Friday, one of the trustees returned to Philadelphia, and was astonished to learn, from one of the attachés, of the sale, of which he knew nothing. A second trustee was found to be also unaware of the transaction.

The managing director, although visitors commented to him on the Moore collection, kept silence as to the sale, yet, by some channel unknown to the present writer, it was already rumored in Washington.

No other institution in Philadelphia with kindred interests had been informed of the proposed sale or given an opportunity to bid upon the material. The management of one such made efforts to save the collection for Philadelphia, after learning unofficially of the impending removal, but without success.

On Monday morning, May 6, Mr. Heye's representative took possession. The stripping of the hall proceeded rapidly and efficiently, with so large a corps of packers that it was impossible to oversee them and make sure that nothing went that should not. The Lamborn collection of Mexican antiquities was carried off to New York, although it had been expressly designated by the managing director as withheld from the transfer, so acknowledged by Mr. Heye's representative, and marked to remain by the assistant curator.

At noon on Tuesday, as a last resort, the assistant curator went to the president, Mr. Effingham B. Morris, and implored him for the honor of the academy and the honor of the city, to save these collections. Mr. Morris believed that Mr. Moore

wished his collection sold to the Museum of the American Indian, Heye Foundation. He had no idea of the number and importance of specimens in the other collections involved, referring the matter back to the managing director. One statement came out clearly, for the first time: "Only the Moore collection had been sold." The Gottschall collection of nearly five thousand pieces, valued by its donor at about \$50,000, the Haldeman, older and larger, and all the smaller series, containing objects of the rarest sort—perhaps twenty thousand specimens in all—were said to be sent along as of no importance.

The warning that, if this were not stopped, it would be "the greatest scandal there has ever been in the history of American archeology and ethnology" had no effect, and no alternative was left the assistant curator but to hand Mr. Morris her resignation.

May 6, 1929

Board of Trustees,

The Academy of Natural Sciences of Philadelphia.

Gentlemen:

I hereby tender my resignation as Assistant Curator in Charge of the Department of Archeology. It is with deep regret that I sever a connection extending into the thirtieth year, but the sale of all the American Indian archeological and ethnological collections of the Academy to the Museum of the American Indian, Heye Foundation of New York City, without the knowledge of all your Board, and certainly without full understanding of what the loss of these priceless collections will mean to the prestige of the Academy and the honor of our city, constitutes, in my opinion, a breach of faith with the past and a menace to the future of the great collections of all the departments of the Academy.

I hereby register my protest against this blanket-sale, secretly negotiated, and the proposed clandestine removal, without adequate time given for the security of deposited collections not the property of the Academy.

Respectfully,  
(Signed) H. NEWELL WARDLE

Presumably, urged by public and private protest which followed this disclosure of the sale of the Indian collections, the managing director and the academy's solicitor went to New York, on May 9, and the press was requested to await an announcement. That announcement, published on the eleventh, was to the effect that the collections, other than Mr. Moore's, had "been merely loaned on the usual terms for study." This was the first intimation of a loan, which, whatever its terms, did not conform to custom.

It is said, on good authority, that, when the Heye Foundation thus lost permanent title to these unconsidered trifles, the academy's officials had to surrender a part of the ten thousand dollars received for the Moore collection.

Two truck-loads of specimens were returned to the academy, May 17 to 21, and were piled, loose, unpacked, indiscriminately, on the floor of the old museum.

A letter by the present writer addressed to the trustees and protesting against such treatment of valuable material, had for result its deportation to the cellar, where it lies in a similar heap. Most of it is perishable, and will ere long become as valueless as the trustees were led to believe.

It is obvious from this sequence of events that Mr. Moore's consent to the sale of his collection, behind which the managing director has taken shelter, was not a free choice. It was the only way he saw to save his collection from such destruction as has fallen upon this returned material. He was left in ignorance even of the price the academy took for it—a price far below its marketable value, had the wish to sell been known.

The end is not yet. The affair is not only a shame to an ancient and honorable institution which in the hundred and seventeen years of its life accepted the trust of archeological and ethnological collections. If misguided trustees, chosen for their business ability to manage the financial affairs of an institution, have the power, without asking expert advice, so to wreck a scientific department, it shakes the foundations of confidence in every institution in America.

H. NEWELL WARDLE

SHARON HILL, PA.

### THE DICTIONARY OF AMERICAN BIOGRAPHY

THE following notes on the second volume of the "Dictionary of American Biography" are written, not with any desire to find fault, but rather, where a work is so good, to ask why it might not be a little better.

Human touches introduced into some of the sketches are commendable. However, the work will serve primarily a public chiefly interested in fact or judicial appraisal.

To satisfy such readers, some degree of uniformity in treatment is desirable, if for no other reason than this, that the time of the investigator is saved. The "Who's Who" method of presenting essential facts might well be considered by the editors.

It is not suggested that all such facts are of equal relevance, but surely the interest in genetics justifies the inclusion of all significant facts of inheritance. To illustrate, the reader of the sketch of Charles E. Bessey might very properly have been informed that his son, E. A. Bessey, is also a distinguished botanist.

My attention was particularly caught, in reading the sketch of B. S. Barton, by the failure to note the