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# THE MUSEUM OF THINGS VERSUS THE MUSEUM OF IDEAS[1]

By Dr. WILLIAM K. GREGORY

AMERICAN MUSEUM OF NATURAL HISTORY

THERE was once a museum man named G. Browne Goode, who said in effect that a museum should be an exhibit of ideas, set forth by labels and illustrated by well-chosen specimens; but this prophet of a better day has been dead a long time and museums of natural history have been very slow to give his principle a fair trial.

History repeats itself. In the eighteenth century, when the young science of zoology was just beginning to get on its feet, there were two schools of zoologists: the first, reacting against the zoologic myths and fables of the Middle Ages, professed itself as the humble recorder of facts and is therefore referred to as the School of Facts (*L'Ecole des Faits*). A work entitled *"Memoires pour servir a l'Histoire Naturelle des Animaux,"* published at the Hague in 1731, was especially noteworthy because it illustrated the status and ideals of natural history in France during the reign of Louis XV. It records the results of a series of dissections performed upon animals from the Jardin du Roi, by a committee of the Royal Academy of Sciences. The work is animated by the spirit of the *"école des faits"* and illustrates both the search for absolute certainty and the reaction against all theory and generalization—tendencies which were characteristic of the science of the period. The authors remind us that natural history had long been burdened with error and overgrown with fanciful speculation. They had proposed to themselves the task of accumulating a body of anatomical facts, each of which was to be

[1] Address before the Academy of Natural Sciences of Philadelphia, May 25, 1936.

attested and authenticated by the whole committee. Each detail of their figures likewise was to be attested, after having been drawn by one of their own members, by a hand guided by science as well as by art. And they "will not," for example, "affirm aught of Bears in general" but will say only that "a Bear which we have dissected had this particular conformation." They profess to hope that upon such a foundation of concrete facts some Aristotle of the future may build a secure philosophy, a veracious natural history.

Adherents of the School of Facts are apt to be rather superior in their dealings with their opponents, the advocates of the School of Ideas. And it must be confessed that they frequently know a great deal more about their subject than their opponents do. The great Cuvier, for example, who was the leader of the School of Facts in the late eighteenth and early nineteenth centuries, had no difficulty in citing facts which easily refuted the ingenious idea of Geoffroy Saint Hilaire that a vertebrate animal was merely a highly disguised insect swimming on its back! And later on, the "Circularians" and the "Trinitarians" of the School of Ideas were only too ready to tell what the Creator had in his mind when, as they vainly imagined, he created series of forms in circles or triangles. It was on the whole a healthy reaction against moonshine in zoology which led to the almost complete triumph of the School of Facts.

This triumph, however, entailed its penalties. For example, the ideal of human anatomy became the compilation of many hundreds of pages of descriptive detail, at first without a single clue from either embryology or comparative anatomy. In anthropology the passion for facts led to the amassing of millions of measurements—most of which were eventually condemned as inexact by anthropological popes of later times. In paleontology the Particularists, or modern successors of the School of Facts, love caution almost as much as acquisition. Industrious as ants and productive as bees, they demand more and more carloads of facts before attempting the elaboration of any ideas. They are willing indeed to declare a long moratorium upon theories, which are often produced by stay-at-home drones.

In many branches of zoology Theodore Gill's dictum that "analysis must precede synthesis" has had curious results. Species were broken up into smaller units, the old species were promoted to be genera, the genera became subfamilies, the subfamilies attained the rank of families, families were stepped up into suborders, suborders into orders, and so on. And when the uncivilized tribes of the Myxomycetes or slime fungi were formally annexed to the kingdom of animals, only a taxonomic dictator was lacking to promote said kingdom into an empire.

Another curious result of the labors of the industrious School of Facts is that the supreme fact of evolution is constantly being overlooked just because the myopic workers can see only the smaller bits of it which they have hacked off from the vast tree of life.

Meanwhile, the doctrine of polyphyly, or the coexistence of numerous independent lines of descent from some very ancient common ancestor, has seemed to some investigators to have transformed the old-fashioned or branching family tree into an indefinite number of nearly parallel lines fading off into the bottomless abyss of geologic time. In short, analysis has so far outrun synthesis that in some cases we might almost as well adopt an alphabetical arrangement of animals as a substitute for a real classification based on natural relationships. Thus the Particularists are largely to blame for the existence of the odious but well-turned phrase that a natural scientist is a man who knows more and more about less and less. Of course he might retort that some folks know less and less about more and more.

Some of the greatest museums in the world include tens of thousands of square feet of exhibition space. Even if there is an average of only one named thing in each square foot, how soon will the visitor be lost in the wilderness of things with names! All those who know their Robert Louis Stevenson will recall his quaint verse:

> This world is so full of a number of Things,
> I'm sure we should all be as happy as Kings.

The visitor to many of the old-fashioned museums of natural history, after wandering through hall after hall full of stuffed animals, of dusty birds mounted on little wooden stands and thousands of insects stuck on pins, might well be tempted to paraphrase Stevenson and say wearily:

> This Museum is so full of so many Things,
> I feel as depressed as a bird with clipped Wings.

As long as an exhibition hall is conceived to be primarily a dictionary for reference, the curators will naturally try to make it as complete as possible and will not only exclude everything not directly pertaining to the dictionary function but will cram their shelves to the limit of capacity. Under such circumstances the poor wight, or average visitor, soon becomes "fed up," as he phrases it, and only pauses a few seconds here and there as one does when idly turning over the pages of Webster's Unabridged. The experimental psychologists, however, with stop-watches in hand, have proved that there is just one thing, in even the worst hall, which will almost invariably quicken the tired visitor's pace when first he catches a distant glimpse of it. That thing is the exit!

There are other aspects of exhibition in which the old-fashioned Museum of Things was palpably defi-

cient. Take, for example, the matter of human interest. In a certain museum there is a huge canoe hollowed out of a gigantic tree by the Haida Indians of the Northwest coast. The canoe contains a number of human figures, some of them wearing masks and evidently dressed in ceremonial costumes. The label with this exhibit notes that the people in the canoe are conducting a potlatch, or ceremonial visit, including the chief and his party, to the people of another village. But the human values, the motivation of the event, are not referred to. Why is the chief making this visit? Is it only a decent exchange of civilities? No; it is his supreme opportunity to vaunt himself, to cover his rival, the other chief, with shame and confusion. How will he do it? He will start with fair speech and compliments. Then, warming up to his work, he will begin making presents, one after another, until it hurts both the giver and the recipient.

"Here are a baker's dozen of these beautifully decorated boxes, piled higher, chief, than your house! Here are these superb woollen blankets, far better than any *you* have ever slept under. Here is this magnificent porcupine quill work! You know you can't equal it. Here's a perfectly sound slave.—Stand up, wretch, and show yourself! We'll use him as a target in this afternoon's sports! [Great applause.] But here's the supreme gift—my No. 1 wife! (Now top that, you miserable insect!)"

Meanwhile please try to imagine the secret feelings of the poor village taxpayers on both sides when they realize next day that they and they alone will have to pay for all this extravagance!

The old-fashioned museum was of course by no means the only educational institution in which human values and interest were studiously ignored. As a freshman student of zoology in a well-known college, I could not for a long time see much use in the endless array of anatomical terms which the student was expected to attach to the drawings of his dissections. "What," I asked my instructor at last, "is the use of all this?" But he, being one of the recent initiates, smiled in a superior way and replied: "Mr. Gregory, that is a question we never ask in zoology." I knew there must be something wrong with the answer, but it took me some years to find out what it was. One fault was that the element of human interest was at a minimum just so long as each unknown part of an earthworm's anatomy had an equally unknown name attached to it. What indeed *was* the use of learning to associate two sets of apparently useless things?

I might have been told that the study of the anatomy of the earthworm was useful because it would help me later to understand human anatomy; or I might have been shown the earthworm as a wonderful living mechanism which conducts its boring operations with an efficiency that might well shame a modern engineer; or why did not my instructor read to us Darwin's fascinating account of the work of the earthworm in preparing the soil for the farmer? But there was only the smelly earthworm, half ruined in my dissecting pan, with little blobs of messy parts and long names to be attached to them! Is it any wonder that the School of Things in zoology nearly drove me into the ministry?

So too in paleontology I was early told by a museum curator that the famous fossil skeleton of *Phenacodus primaevus* Cope was worth more than all the theories that would ever be based upon it. Again I knew that there was something wrong with the answer, but what was it? I should say now that the value of any museum specimen is only a potential or estimated value so long as no human being gets any scientific ideas from it. The specimen begins to function as an object of science only when and in so far as it serves as a basis of scientific knowledge.

But not even in museums of natural history have the Particularists succeeded in burying every idea under a thick deposit of minute details. The Generalizers have always insisted that the aim of science is not only to collect, catalogue, identify and exhibit things, but to find out and to expose, so far as humanly possible, why things are as they are and according to what rules events are shaped. The Generalizers have also clung to the opinion that even an imperfect and temporary explanation or hypothesis is much better than none at all, provided, however, that it be clearly recognized as a stage in the development of men's ideas as to the causes of things.

However, nothing is simple (at least in museums) and there are perhaps as many difficulties as there are things. For hundreds of millions of years nature has been turning out new things, new situations, merely by combining old elements in different proportions at different times. Also, since new events and things are seldom if ever the products of single causes, each simple thing to-day has lines of antecedent causes and conditions which spread out in a network of infinite extent and age. In other words, since there have been myriads of individual factors that have contributed to even the simplest events of to-day, the world itself would not be big enough to hold the books that might be written thereon, nor the earth wide enough for an adequate exhibit thereof.

But because explanations may not be final and complete, must the visitor be left to bump around aimlessly and without clue or guidance until, wearied by contact with unmeaning objects and long words, he quickens only at the sight of the exit?

Department stores, movie directors and the Sunday papers often show a great deal more about the art of exhibition than do many old-fashioned museums.

For one thing, the window-dressers in the better department stores long since discovered the fundamental importance of unity, emphasis and coherence, and they have also hit upon the high value of the rest, or interval of empty space, for the bewildered eye.

Ineffective public instruction is exemplified when great crowds of people merely drift by an exhibit and never think of it again. Effective public instruction is achieved when people stop, look, read, mark, learn and inwardly digest, the exhibit, so that it adds permanently to their stock of useful knowledge. But in order to maintain public instruction in a state of vitality there must be a constant stream of new discoveries, new scientific material, new exhibits, and there must be a perfect cooperation between the producers of scientific values and the teachers thereof.

Fortunately the trustees and staff of the Academy of Natural Sciences of Philadelphia some years ago discovered that something very radical must be done to an old-fashioned museum in order to preserve and harmonize its functions as a treasury of scientific material and as a center of research, with its function as an active teacher of scientific principles. Already great progress has been made, as any one can see by visiting the beautiful galleries of mammals, or the striking individual exhibits already installed in the hall of geology and minerals. Moreover, the academy has never failed to realize that its primary function is that of an active research and publication center, so that even in the worst days of the depression it continued to publish the results of investigations by the preeminent scientists who are the real fount of its power and prestige.

The plans set forth in the brochure entitled *"Frontiers"* would, if means could be found to carry them out, place the Academy of Natural Sciences of Philadelphia in the forefront of those institutions which are opening up and exploring the vast fields of science and education. The academy can be enabled to carry out this splendid program of public instruction in the principles of science only if the citizens of Philadelphia realize its great value to them and help to bear the cost of transforming a Museum of Things into a Museum of Ideas.

# THE PHYSICIAN AS ANTHROPOLOGIST

By Professor T. WINGATE TODD

WESTERN RESERVE UNIVERSITY AND BRUSH FOUNDATION

THE sudden and untimely death of my distinguished colleague, Dr. Roger Griswold Perkins, floods my mind with memories of significant accomplishments and fills my heart with gratefulness for creative insight and the enthusiastic promotion of an ideal which bids fair ultimately to rank among the most practical of dreams which ever took shape within the fertile brain of man.

To the American familiarized even to the point of commonplace with the rapid growth of cities those basically constructive measures which make congested areas fit for habitation are too often taken for granted. But to one like myself, born and bred in the Old World, the miracle of health in such a neighborhood must always stand as the most striking of the gifts to mankind by men whose ambition is fulfilled in service without the mead of praise. Here was the man who took the typhoid out of Cleveland water; built up the city's division of health; insisted on the proper inspection of food; the man behind the Cleveland Health Council. Yet on his retirement this metropolitan area of three million souls, each one of whom owes to Dr. Perkins security of health, could let him slip quietly away without a word of acknowledgment to his homestead in Rhode Island, so sated are our people with service and security.

This present testimony, however, draws attention to a still more fundamental contribution to human welfare than making life safe for a legion of fellowmen. It happened that, by the inscrutable working of destiny I, who had found my greatest thrill, under the guidance of Sir Grafton Elliot Smith, in delving into the mortality statistics of the ancient Egyptians, while this was still possible pending completion of the Assouan Dam, was thrown into professional association with Dr. Perkins, who, like myself, had been too busy with the daily round to formulate the principle which was the mainspring of endeavor. It was obvious, however, from these studies on the imperishable remains of an early people that no adequate time-table of the impact of life upon humanity could be constructed except in a center where official enlightenment makes possible the serial study of human beings in life and death. Cleveland was the one community where this was possible and Perkins the one man who could make that study effective. His accession, in 1911, to the chair of hygiene and preventive medicine the year before my arrival and his growing prestige in municipal and county management made possible the study which we both had planned. His guidance and diplomatic tact made possible the substitution of a Permanent Morgue for the Potter's Field, and that permanent morgue to-day comprises 3,000 of our fellow townsmen, most of whom, recruited from our local hospitals, brought with them the essential records for analysis