

when a large series of allied forms, showing the variations of life, habit and characters, are accessible for comparative study. Here the investigation often learns that forms which were supposed, from their lack of resemblance, to represent different species, are connected by a regular gradation of similar forms and are really the same. A large series is often necessary to enable the investigator, who is studying new or rare forms of which perfect specimens are seldom seen, to determine the species, relation of parts, size, shape, etc., of the complete animal. One fragment will supplement another, throwing new light in various ways, and thus furnish material for the restoration of the complete animal.

Questions of practical importance are continually arising in regard to one or another of nature's products which for lack of sufficient data at home, have to be sent at considerable expense of time and money, to distant museums for investigation. Because of this necessity many facts of vast financial importance are never gained. Men will not take the trouble to send to a distance for knowledge whose value is not adequately comprehended on account of its very distance. Dr. Dana, of St. Paul, says: "It is utterly chimerical to think that Western men can look to Eastern institutions for higher education. The latter is the vital function of every commonwealth, and can no more be transferred than its political responsibilities. For the West to rely upon the East for liberal education, would put her, according to Dr. Post, 'in the attitude of France in relation to Paris; of vast and inert provinces feebly feeling the pulse of the distant and intellectual capital.'" So far as possible, each State should have so complete a museum that no student of nature would be compelled, for anything but the most exhaustive study of unique specimens, to seek facilities for study in a distant college or museum, but could find at home collections which would attract students of science, practical scientists, and unscientific men needing scientific information, from every quarter. A collection of specimens from Kansas was recently taken to Agassiz's museum, in Cambridge, Mass., to be identified and classified, for want of facilities at home. To the same place also were shipped, for a similar purpose, materials by the ton from the Kentucky Geological survey. Material of like character and amount is stored within the limits of Missouri, with little knowledge of its value, from lack of facilities for determining it here. Other material from this State is now in the Archaeological Department of the Smithsonian Institution, by request of authorities there, because of the peculiar richness and value of the objects which this State affords. And this is by no means the first time that scientific material from Missouri has been solicited for study in Washington, Boston and other favored cities of the East. Not, unfortunately, vast supplies of all such material throughout the State are allowed to "lie here ungathered and waste upon the plains." Much of this material is new to science, and is rich in suggestive questions that have never been answered, but which might and should be solved by her own citizens and upon her own soil.

Again, museums are of vast importance in giving us increased knowledge of God and his works, as does the Bible. Nature, not less than scripture, is a revelation from God. Each was designed to supplement and complement the other. Neither can be understood in all its fullness without illumination from the other. Mr. Agassiz has said: "Collections of natural history present the plan and mind of God in creation." "If I mistake not, the great object of our museums should be to exhibit the whole animal kingdom as a manifestation of the Supreme Intellect. The time is passed when men expressed their deepest convictions by wonderful and beautiful religious edifices; but it is

my hope to see, with the progress of intellectual culture, a structure arise among us which may be a temple of the revelations written in the material universe. If this be so, our buildings for such an object can never be too comprehensive, for they are to embrace the infinite work of Infinite Wisdom. They can never be too costly, so far as cost secures permanence and solidity, for they are to contain the most instructive documents of Omnipotence." The late Prof. Orton says: "A cabinet unfolds the great idea of God as it marched on to realization. To the theologian, philosopher and student, it is a vast repository of thoughts and suggestions to which the Astor Library is no thing." In a notice of the Ward Cabinets, we read: "No one can enter this truly cosmological museum without believing that he has before him, in one volume, God's narrative of creation. For he who classifies the results of those six days of labor by the erection of a complete repository of natural objects in natural order, is a translator of the Creator's thoughts." A well selected and arranged museum presents to the eye, in physical form and in minutest detail, the panoramic view of creation which Moses expressed in words. In one of his talks to his students, at Penikese, Mr. Agassiz said: "The study of nature is direct intercourse with the Highest Mind. It is unworthy an intellect being to trifle with the works of the Creator. A laboratory of natural history is a sanctuary, in which nothing improper should be exhibited. I would tolerate improprieties in a church sooner than in a scientific laboratory."

Since nature is another revelation from God, why should not facilities for studying her in good museums be as worthy an object of Christian liberality and the use of consecrated funds as the erection of churches and the distribution of Bibles? Christ commonly impressed his truths by illustrations from some phenomena of nature. And religious teachers would do well to pattern after their exalted Model and know better for increased power in their work. The time is doubtless not far distant when theological seminaries, as well as colleges and universities, will be required, by the demands of the times, to have collections specially adapted to teach the order of creation and to illustrate the vast number of scientific allusions in the Bible, and also to have competent professors who are especially qualified to bring out in full relief the scientific phases of Bible truths and the Scripture phases of scientific truths.

In a Missouri publication, it is not inappropriate that this article should have somewhat of local application. The State of Missouri, the geographical centre of the Union, than which no State has been endowed by nature with vaster and more varied stores of animal, vegetable and mineral wealth; with fertile fields of science ripe for the harvest in all the adjoining States, with ready access to the Rocky Mountain regions containing the richest stores of scientific material in the world, to the Mexican Gulf rich in recent animal life, and to Texas equally rich in remains of ancient life; and midway between the two great oceans that wash our shores, is peculiarly favorable for the seat of a large museum. There is no apparent good reason why in Missouri may not be accumulated collections, in all lines of popular, practical, and scientific interest, which shall afford every desirable facility for improvement, instruction and original research, be a credit to friends and a source of profit to our citizens, an honor to the State, and a valuable contribution to the advancement of science everywhere.

That the formation of such collections, both living, in zoological and botanical gardens, and dry, in cabinets and cases, is practicable is capable of easy demonstration. As has already been intimated, this State abounds in specimens which are prized and solicited by cura-

tors of museums, collectors, and students in all parts of the United States. Many private collections of great value have been accumulated here, almost entirely by the efforts of the individual owners, with but little expense and less outside assistance. The richest of these have been in the line of Indian relics, in which this state is remarkably rich, yet its wealth has been but very imperfectly explored; also of fossils, minerals and plants. Unfortunately for the credit and welfare of our state, some of the most valuable collections found here have gone to enrich eastern museums on both sides of the Atlantic. They should have been kept here and could have been, had they been properly appreciated. With a full supply of home material, and sufficient assistance in preparing it for scientific use, duplicates can easily be exchanged for valuable material in abundance from other collections from distant localities representing forms which are not to be found here. Untilled applications for specimens from this locality, with tempting offers in exchange, are constantly in possession of both professional and amateur collectors here. Systematic collections and cabinets, labeled and arranged with care, are always to be purchased for a reasonable sum. These range in price from that of Ward's magnificent collection of casts, representing most of the extinct animals and plants that have inhabited the earth, costing thousands of dollars, to choice cabinets of birds at a cost of fifty to three hundred dollars, even to fine suites of shells, minerals, plants, etc., for a dollar or more. Expeditions can also be fitted out at a moderate expense which will rapidly increase the material needed.

Friends of such a museum and of science can readily be induced to present collections of large or small amount, obtained by purchase or otherwise. This will vastly augment the pleasure and profit they derive from the museum, and their pride and interest in it, as facilities for contributing to the pleasure and profit of the community at large. It is interesting to see how contagious is the spirit and practice of contributing to a good cause. One can easily provoke others to good works. And the possession of a considerable nucleus is almost sure to attract donations in greater number, illustrating the doctrine of Scripture—and of human nature as well—that "to him that hath shall be given," and demonstrating the trite maxim that "nothing succeeds like success."—*Kansas Review*.

#### LONDON TIMES ON WEATHER FORECASTS.

The weather is by no means a subject which should be regarded merely as a matter of conversation for the multitudes of people who find it difficult to talk about anything else. The subject, in reality, one of great national importance, of far more importance than many others which occupy the time and the thoughts of the public: and it is only neglected on account of the obscurity behind which the causes of weather changes have been hitherto concealed, and of the consequent apparent futility of discussing them. If any scientific investigation could bring the subject of weather changes within the region of actual knowledge, so that reasonable forecast might be made concerning them, it would at once become manifest that scarcely any other subject could vie with them in universality of interest. The power of foreseeing the weather of the next few days would do much, the power of foreseeing the weather of the next season would do almost everything, to take away from agriculture the uncertainty which is now its greatest hindrance, and a bad harvest season would then no longer, as at present, entail upon the nation a loss which must be estimated by millions.