to say in a clear and interesting manner, and Clerk Maxwell, the mathematical physicist, could write paragraphs and verses racy enough for *Punch*. No better writers of instructive and agreeable English can be wished for than Darwin, Tyndall, Huxley and Spencer. SCIENCE hopes to be so fortunate as to discover and awaken the desired talent among the American students of nature. Its experience is worth something. Its managers know the rocks and shoals that must be avoided. They will welcome aid, suggestions, contributions, news, from every quarter. They ask cooperation. They believe that the art of writing can be acquired. One of the fundamental canons of success is to write so clearly that the rapid reader can perceive what is meant.

Such will be the aims of the new management of SCIENCE.

Finally,—

"If to do were as easy as to know what were good to do, chapels had been churches and poor men's cottages princes' palaces. It is a good divine that follows his own instructions: I can easier teach twenty what were good to be done, than to be one of the twenty to follow mine own teaching."

D. C. GILMAN.

JOHNS HOPKINS UNIVERSITY.

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*THE CHARACTER AND AIMS OF SCIENTIFIC INVESTIGATION.**

THE influence of this Association is in the highest and best sense of the word *educational*. Its discussions are aimed to present the correct methods of scientific investigation and to be guided by the true spirit of scientific inquiry. Permit me to explain this statement a little, for in it lies more than anywhere else the right to existence of our organization and the best effects it can exert upon its own members or upon a community where it convenes.

The goal which we endeavor to attain is *scientific truth*, the one test of which is that it will bear untrammelled and unlimited investigation. Such truth must be not only verified, but always verifiable. It must welcome every test; it must recoil from no criticism, higher or lower, from no analysis and no skepticism. It challenges them all. It asks for no aid from faith; it appeals to no authority; it relies on the dictum of no master.

The evidence, and the only evidence, to which it appeals or which it admits, is that which is in the power of every one to judge —that which is furnished directly by the senses. It deals with the actual world about us, its objective realities and present activities, and does not relegate the inquirer to dusty precedents or the mouldy maxims of commentators. The only conditions which it enjoins are that the imperfections of the senses shall be corrected as far as possible, and that their observations shall be interpreted by the laws of logical induction.

Its aims are distinctly beneficent. Its spirit is that of charity and human kindness. From its peaceful victories it returns laden with richer spoils than ever did warrior of old. Through its discoveries the hungry are fed and the naked are clothed by an improved agriculture and an increased food supply; the dark hours are deprived of their gloom through methods of ampler illumination; man is brought into friendly contact with man through means of rapid transportation; sickness is diminished and pain relieved by the conquests of chemistry and biology; the winter wind is shorn of its sharpness by the geologist's discovery of a mineral fuel; and so on, in a thousand ways, the comfort of our daily lives and the pleasurable employment of

*From the introductory address of Dr. Daniel G. Brinton, President of the American Association for the Advancement of Science, at the annual meeting in Brooklyn, August, 1894.

our faculties are increased by the administrations of science.

Scientific truth has likewise this trait of its own; it is absolutely open to the world; it is as free as air, as visible as light. There is no such thing about it as an inner secret, a mysterious gnosis, shared by the favored few, the select illuminati, concealed from the vulgar horde, or masked to them under ambiguous terms. Wherever you find mystery, concealment, occultism, you may be sure that the spirit of science does not dwell and, what is more, that it would be an unwelcome intruder. Such pretensions belong to pseudo-science, to science falsely so called, shutting itself out of the light because it is afraid of the light.

Again, that spirit of science which we cultivate and represent is at once modest in its own claims and liberal to the claims of others. The first lesson which every sound student learns is to follow his facts and not to lead them. New facts teach him new conclusions. His opinions of to-day must be modified by the learning of the morrow. He is at all times ready and willing to abandon a position when further investigation shows that it is probably incorrectly taken. He is in this the reverse of the opinionated man, the hobby rider and the dogmatist. The despair of a scientific assemblage is the member with a pet theory, with a fixed idea, which he is bound to obtrude and defend in the face of facts. Yet even toward him we are called upon to exercise our toleration and our charity; for the history of learning has repeatedly shown that from just such wayward enthusiasts solid knowledge has derived some of its richest contributions. So supreme, after all, is energy, that error itself, pursued with fervid devotion, yields a more bountiful harvest than truth languidly cultivated.

But, perhaps, the picture I have thus drawn of the spirit of scientific inquiry excites in the minds of some a certain antipathy, or, at least, a sense of dissatisfaction and incompleteness. To such this description may sound narrow and materialistic; the results of scientific study thus rehearsed may appear vague, indefinite, incompetent to satisfy the loftier yearnings of the soul of man for something utterly true, immutably real.

Vain, indeed, were the life work of our Association; bereft, indeed, were we of just claim on your consideration, did we appear before you with such a thankless and futile confession of the ultimate aim of our labor. But it is far, very far, otherwise.

All this prying into the objective, external aspect of things; this minute, painstaking study of phenomena; this reiterated revision and rejection of results, are with the single aim of discovering those absolute laws of motion and life and mind which are ubiquitous and eternal; which bear unimpeachable witness to the unity and the simplicity of the plan of the universe, and which reveal with sun-clear distinctness that unchangeable order which presides over all natural processes.

This is the mission of science—noble, inspiring, consolatory; lifting the mind above the gross contacts of life; presenting aims which are at once practical, humanitarian and spiritually elevating.

Daniel G. Brinton.
University of Pennsylvania.

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*AMERICA'S RELATION TO THE ADVANCE OF SCIENCE.**

"In art and science there is no such thing as nationalism: these, like all things great and good belong, to the entire world, and are promoted only by free interchange of ideas among contemporaries, with constant reference to the heritage of the past." So wrote

* From *What has been done in America for Science*—an Address delivered before the Philosophical Society of Washington, November 24, 1894, by G. Brown Goode, retiring President.