

I

*Progress
in
Science.*

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II

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Progress in Science.

As students of truth, we are not content with fact, but look through the telescope of reason to see what is before. And more commonly do we take a retrospective view that we may better know the present and contemplate the future.

In childhood we are delighted with Grandpa's stories, since he relates life so different from what we know it today. This makes it very pleasant to listen to him. The Scientist is even interested in these stories, and in the changes that have been brought about, so that he sets to work to reveal some of the causes that make it possible for us to enjoy such different and varied opportunities that our fathers knew nothing about.

But man himself has not changed. He is the same today as he was two thousand years a-

-go. Then was he possessed with the same quality of enjoying pleasures and pains - as is the man of the nineteenth century, if any different - he could endure more hardships. Thus in the physical body there no difference, but in the intellectual body we find the great chasm that separates the primitive man from his representative of today. How nature reveals to him what never before was seen. Then as well as now could he see the phenomena of nature, and he was just as familiar with the changes that were going on about him, but these were a dead letter to him in so far as he could not interpret the laws by which things moved, and then feared them and was very superstitious.

It is very natural to think when we see how science is taking the place of superstition and bringing order out of chaos,

that primitive man was naturally born a superstitious being, but this is not necessarily true. In the very lowest tribes of savages, where food is abundantly supplied by nature, their only wants are satisfied. They never look beyond the immediate present and so have nothing to fear.

It is not until man feels himself a dependant being that he is curious to know the cause of things. In here lie the first steps of obtaining real knowledge, and it is the nucleus of science. Things that we see and observe through our senses are material and their existence depends on some power or laws or principles which can not be seen but are evident in all phenomena of nature. To man is given power to see through or beyond these material things and then to interpret the laws by which they exist.

According to Rev. Pastor Hood, all men would be scientists, were it not for their intellects being stunted in childhood. He says that as children grow older their questions get fewer; for, as a rule the little inquirers are either repressed by parents, who do not want to show their own ignorance, or else chilled and baffled by their manifest inadequacy. This doubtless is true; The great majority of people are not as zealous in discovering new facts as is the child. This is not because they have learned all that is necessary for them to know, for the true scientist is ever seeking for new explanations about our universe. Facts that will uplift humanity, and we are ever willing to grasp these truths, although we may not seek for them.

Science rose with the first concept of man, but was not de-

veloped largely until the present day, yet Grecian philosophers made rapid progress and discovered many truths, but their sciences were illfounded and subsequently overthrown.

A glimpse at history shows that wherever a nation made any rapid progress, science was one of its important factors; and the reverse is true wherever investigations of facts have been made, progress was certain.

In fact the rational mind is so constructed, and is governed by the same nature's laws that govern the universe, that in order to be active it must be an interpreter of these laws. This is self evident. Think for a moment of a rational man that knows no natural law. So we feel safe in saying that scientific investigation is synonymous with human progress. This may seem illfounded when we re-

member that sculpturing, painting, building, and art in general had reached a high degree of proficiency long before our modern sciences arose. Steam and electricity were in use long before man had any knowledge of thermodynamics. But often discovery is an accident, and because one is so fortunate as to amass great riches, or ingenious enough to become father of a great invention, does not overthrow the above statement.

Man in his crude state is a doer rather than a thinker, and naturally art, which is doing, rose long before science which may be called thinking or knowing.

Art has been the forerunner, and by some is called the father of science. And like when father and son are working together more is accomplished, so too must art and science go hand in hand in order to make any

great achievements.

Art is applied science, and wherever it moves it carries with it this implied knowledge. Thus the painter who knows nothing about the laws of color, as such, yet relies on his knowledge of previous experience, that in mixing certain colors a desired shade will be obtained. The Artisan works an apprenticeship but does not recognize in it the study of scientific facts. The first steam engine was built without the knowledge of the force of steam, as a result it was a large massive structure and wasted about four-fifth of its power. Art by itself is extravagant; it, as such, knows no economy, ignorant of strength and durability, it duplicates material, and like the man that rides in his car-wheeled carriage, seeks utility but often sacrifices economy.

Nature on the other hand is the great economist; and not until governed by the reign of her laws will man fully realize the benefits of her Tutorship, and reach that plane of civilization toward which he is aiming. We owe to her the credit of supplying us with the comforts and luxuries enjoyed in the modern home. The evolution, from their imperfect states, of Astronomy, Geometry, Arithmetic, and Music, the only sciences of the middle ages is due to men who followed the precepts of her teachings, and by so doing are illuminating the world.

In the early part of Seventeenth century we find a wonderful impulse given to sciences. The Astronomical discoveries and physical investigations of Galileo; Mechanics of Stevinus; Anatomy and Physiology of the French and Latin schools; the opening of com-

merce, and colonisation of the of the new, mark a great change in the industrial development of the world. But these are but the foundation upon which the sciences of the nineteenth century, which are far more prolific in important achievements, are built.

In the present century the United States extending her boundary from the Mississippi to the Pacific, more than doubled her territory; thus almost insuring an inexhaustible supply of natural resources. And increasing her population from four million to over sixty-five million for the manipulation of these resources, beside the civil and political rights guaranteed to every citizen, there is no reason why this century should not excel all others in the emancipation of humanity. And truly it does. Almost within our own day have the shackles of three million human slaves

been torn off. The harnessing of steam and electricity; the manufacturing and improvement of machinery is liberating millions more. The application of truths taught by our sciences is another factor that tends toward the freedom of man. The telescope that surveys the starry heavens, by diminishing space, brings us in more direct relations with the whole universe. Astronomical discoveries thus made are utilized by our governmental bureaus, where forecasting weather is made more servicable, and navigation more secure. The cable and telegraph, by obliterating time and space are bringing nations into more closer union. The studies of Geology, Chemistry, Botany, and Entomology, are becoming of direct benefit to the Agriculturist as well as to the Scientist. Geology as a record of history is revolutionizing thought. Chemistry for the composition of soils and plants, is the criter-

ian of what soils are best suited to certain plants. Botany gives the history and uses of plants. And Entomology is applied for guarding against, and the destruction of depredating insects. Also Chemistry, Botany, and other kindred sciences are great factors in the medical and other departments of social wellbeing.

Now while these sciences have been making rapid progress in their varied branches, all tending toward the uplifting of man and placing him on a higher plane of enlightenment, their application is not so manifest as it might be.

The studies of Ethics, Economics, and Sociology, have not been pursued as closely as some others of less importance. Unquestionably as time progresses, human society becomes more complex. Differentiation and specialization are some of its attributes. When man is liberated there is a tenden-

-cy toward dependance, since he no longer is a free producer, but produces what society demands. This is a fact often overlooked in our rapid march toward supremacy, and a fact of not small importance. If society through labor manufactures machinery that subdues labor, it becomes indebted to labor to that extent. How is it to pay this debt? Only by opening new avenues of industry, and recognizing man's duty to man. Its treatment is homeopathic. This is the study of the sciences that pertain to human nature. In here lie the fields of Ethics and Sociology. They play an important part. With them in connection with the other sciences, man is doomed to rise, but will not be free until he is placed in harmony with all of nature's laws.