

## THE PHILOSOPHY OF SCIENCE

EX-GOVERNOR W. A. NORTHCTT

Springfield, Ill.

Things must be thought out before they are wrought out. Science is the thought of things and art is the doing of things. The architect first thinks out the great building that the artisan afterwards creates. The sculptor first sees in the rough marble the beautiful creation he afterwards gives to the world. The battle is first thought out by the general before it is fought out by the soldiers. The long-headed man, before the beginning of a great undertaking, in his mind cancels all difficulties and in the performance there is no wasted effort. Science is the triumph of mind over matter.

Science has made more rapid strides in the last one hundred years than in all the world's preceding history. "Close behind the worshippers of knowledge have followed the ma-

gicians of today; chemists, engineers and electricians. At their command the spirits of air, water, earth and fire have been made to do man's every bidding. They propel his steamships, railway cars, and mighty engines; they make his garments; they build his houses; they illuminate his cities; they harvest his crops. For him they make ice in the tropics or grow oranges amid snow. For him they fan a heated atmosphere into cooling breezes or banish icy winds. They flash his news around the globe; they carry the sound of his voice for thousands of miles, or preserve it after he is dead. Verily the fairies and genii of old did not so much for Solomon in all his glory."

Science has followed closely on the dreams of the poet and made them realities. Many years ago Tennyson said:

"Here about the beach I wander'd, nourishing a youth sublime  
With the fairy tales of science, and the long result of Time;  
When the centuries behind me like a fruitful land reposed;  
When I clung to all the present for the promise that it closed.

When I dipt into the future far as human eye could see;  
Saw the Vision of the world, and all the wonder that would be.—"

"Saw the heavens fill with commerce, argosies of magic sails,  
Pilots of the purple twilight, dropping down with costly bales;  
Heard the heavens fill with shouting, and there rain'd a ghostly dew,  
From the nations' airy navies grappling in the central blue;

Far along the world-wide whisper of the southwind rushing warm,  
With the standards of the peoples plunging thro' the thunder-storm;

Till the war-drum throbb'd no longer, and the battle-flags were furl'd  
In the Parliament of man, the Federation of the world.

There the common sense of most shall hold a fretful realm in awe,  
And the kindly earth shall slumber, lapt in universal law."

The dream of Tennyson is a reality of today and many European cities now with dread see "the nation's airy navies grappling in the central blue."

The submarine that can go a thousand miles under the water and with deadly blow destroy the strongest warships; the armored automobile; the cannon that will carry twenty-five miles, are all creatures of the giant—science that has come to rule the material world.

Said one Irishman to another: "Mike, I see they are sending telegrams now without any poles or any wires." "Yes," replied Pat, "and pretty soon we will be able to travel without leaving home." This is about true today. Seated in the halls of our home town, the moving pictures take us to the most extended corner of the globe and we become conversant with the

lives among the antipodes. The phonograph preserves the voice, and the picture galleries of ancestors in the future will not only give the face but the movements and the voice, and man will become practically immortal.

There is an account of a man employed in the Patent Office who wrote to a friend he was going to resign because it was only a temporary job. That the patents would all soon be exhausted and there would be no more business for the department. This letter was written in 1837, and since that time millions of inventions have been patented and there are millions more to come. This man made a bad guess.

It is impossible here to review all of the great strides made by science in the last hundred years and we pause to ask with John Ruskin, "Does the making of costly fabrics and the traveling of many miles an hour make us any wiser or happier?" Do these great scientific inventions make us get anything out of nature's establishment any cheaper? If we want to be strong we have to work. If we want to be wise we have to read and think. If you want to be happy you have to love your fellow man. Nature has no bargain counter and there is no loyal road to any place worth going to. The scientific inventions improve the material conditions of mankind but they are not going to cheat nature out of anything. Huxley once said:

"If I understand the matter at all, Science and Art are the obverse and reverse of Nature's medal, the one expressing the eternal order of things in terms of feeling, the other in terms of thought. When men no longer love or hate; when suffering ceases to cause pity and the tale of great deeds causes no thrill, when the lily of the field shall seem no longer more beautifully arrayed than Solomon in all his glory, and the awe has vanished from the snow-capped peak and deep ravine, then and not until then will Science supplant Nature."

We are not going to get any happiness out of this world in any way different from the way in which our fathers did. The science of the mind does not take the place of the heart. An eminent writer states the case very strongly:

"There is the poetry of life itself, more potent than anything in books can be. Nor need one search for it. The sunlight of a dawn slanting through your window; the twittering of birds in the tree-top; the dandelions in the grass; children romping in the park; the wistfulness in the eyes of your own little boy and girl; the sight of two lovers at a trysting place; the quiet happiness and understanding of the old couple at their golden wedding; the friend whom you salute at the street corner; fel-

low-workers content in their daily routine; the soaring lines of the skyscraper or the lonely sycamore; the ceaseless pulsing of the city street or the hush and winter calmness of a country hillside; the farmer among his stock or the sailor in the rigging; the cry of the wind and the swirl of snowflakes; the calm fire-side at home and the rustle and leap of its flames; night and the eternal stars—these make the poetry of life, given to all, and transcending all else."

Knowledge is power. It gave liberty to Greece and glory to Rome. Science is knowledge and adds to the power of man. Whether this knowledge is a blessing or a curse, depends upon how it is used. In the hands of a bad man, it makes him only the stronger for evil; in the hands of a good man it makes him stronger for good. In the last analysis it is a question of added power and not necessarily of added good. The steam adds power to the engine, but unless there is an intelligent hand at the throttle it becomes an engine of destruction instead of usefulness. It has been said that the ignorant expert is better than the learned fool, but is not a learned expert better than either? Science in the correct theory proves useless unless applied to correct practice. Good practice on bad theory is just as useless. The ideal condition is the combination of correct theory with correct art and character makes it serve good purposes. Some fear is expressed that science may conflict with the teachings of the Church. On this subject, thirty years ago, Mr. Rice said:

"The Church has learned wisdom. The persecution of Galileo is not likely to be repeated. And Science too has learned something. In all its wealth of discovery, it recognizes more clearly than ever before the fathomless abysses of the unknown and unknowable. It stands with unsandaled feet in the presence of mysteries that transcend human thought. Religion never so tolerant. Science never so reverent. Nearer than ever before seems the time when all souls that are loyal to truth and goodness shall find fellowship in freedom of faith and fellowship of love."