

For Feb 10 1963, St Lawrence Parish: Holy Name Soc.

### SCIENCE AND THE HUMANITIES

Three year ago, Sir Charles Percy Snow, of Cambridge University, gave an address on what he called "The Two Cultures". His thesis was that scientists and libérateurs were like two races of men. They spoke different languages. He saw the gap between them getting wider. He feared for the good of the human race. He feared that the scientists were taking over.

My own opinion is that Sir Charles either did not really know scientists or did not know the right scientists.

The word science is very wide. As a consequence we have many scientists, and scientists in many different fields.

To air my views, I shall speak, specifically, of those engaged in the Explora ion of Space.

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The Exploration of Space has many facets. Those who plan it are known as ~~scientists~~ scientists. Those who carry it out are technologists.

The scientists who have planned the exploration of space are creative scientists. They have the souls of poets.

To dream up possibilities, such as Telstar, requires imagination.. So does the planning of voyages of discovery in space, - voyages which, some day, ~~may discover~~ <sup>may</sup> carry us to distant stars, ~~and the discovery of planets with planets,~~ <sup>which, like the sun, may have their own planets,</sup> too far away to be seen by our most powerful telescopes.

Among the creative scientist, there are many who, ~~turn in the eve~~ after a day of struggling with facts and figures, turn, in the evening, to reading poetry or listening to music or looking at pictures from the world's great great galleries.

The mathematically-minded most often turn to music. Sir James Jeans, <sup>the</sup> ~~the~~ <sup>(1877-1946)</sup> ~~world's outstanding astronomer 720 years ago~~ the great astronomer who died 17 years ago, wrote a book on "Science and Music".

Einstein was never far from his violin. Eighteen months ago, I was at an International Meeting of Astronomers at Berkeley (California). For our benefit, ~~entertainment~~ one evening, a special concert was put on. ~~realization they had one evening, a concert~~ The string ensemble treated us to two concertos composed by the 18th century astronomer, Sir William Herschel.

Not only in the past, but also to-day, scientists ~~seek~~ turn, for relaxation, to the beauties of nature and the fine arts.

A little over two years ago, I was at a science convention in Madrid. I omitted <sup>to attend</sup> going <sup>to one session,</sup> ~~to the session~~ in order to go to the Prado Picture Gallery, to see the paintings. There, to my surprise, I ran into about a dozen of my fellow scientists. Some of these, when they saw me, looked sheepish, like schoolboys who had been caught playing hookey. Others, came up to me and congratulated me on my good sense.

*to deal with the history of astronomy, biology, physics, chemistry, etc.*

*history*



About two years before that again, I was at an Astronomical Congress in Dublin. One morning, the discussion became long, repetitious and confused. That afternoon, I met a Fellow of Balliol College, Oxford. He said to me: "Did you sit through the morning session?" "Well, no", I said, after two hours I got up and went out for a breath of fresh air". "Good", he said, "I stuck it out for an hour and a half, and then went to the Zoo to see the newly born baby giraffe."

If I have learned the difference between science and fine art, I believe that I have learned it more by experience than by precept. A few years ago, standing by the remains of the home of Leonardo da Vinci, I saw an American taking photographs of the <sup>scene</sup> ~~scene~~. I thought of the inadequacy of the camera to ~~pr~~ <sup>o</sup>tray the Tuscan Hills. It needs an artist to put on canvas all that those hills say to us. And <sup>then</sup> ~~the~~, in Switzerland, I thought how even the brush of the painter fails to distinguish the lakes of different hue, the silver, <sup>the blue and the silvery-blue.</sup> ~~and the blue.~~ In England, the thought came to me:- it is the poet alone who does justice to the folds and downs with grazing sheep. In Ireland, I wondered if on any painter's palate, one could find as many shades ~~of~~ soft green as seen, all together, at Killarney.

Before i had ever trevelled through the Canadian Rockies, I had often seen travelogues of them. After I had seen them, I realized that not even coloured movies could capture their beauty. They need to be perceived by not only the eye but by all the senses. One has to stand by the Rapids of the ~~Fraser~~ flowibf Fraser River to conscious of how cool and fesh its waters are.

And as our own Peggy's Cove has its different moods,- with fog, and storm, and sun, and snow,- so also have the derts of the South Wets United States. I have seen the Nevada Desert when it fesebled, somewhat, the picures of it with which we are familiar,- those which show it as an arid region beneath the baking sun,

and I have seen it in downpours of rain, in thunder and lightning, when it resembled the ~~scener~~ of desolation on the Day of Judgment, as depicted by the engravings by Doré, in the old bible.

Such experiences as these made me to think that the painter cannot ~~can~~ express all that we perceive as fully as does the poet. A painting is, at best, silent poetry. A good poem is a painting in motion,- a movie with sound effects.

The Sicilian poet Quasimodo, in his paysages, makes one to see, hear, taste, smell and feel all that he describes: crows and cranes in flight; gulls and laughing magpies; eucalyptus trees and poplars; spruce and wind-swept pines. As we read him, we can hear the shrill of the shepherd's horn, the <sup>gun</sup> ~~rifle~~ shot in the woods. We can smell the acrid odour of the lindens, and feel the hot summer breeze, scented with orange blossom. One can almost taste his waters, whether in whirling pools, or in fresh springs, or drying into salt

The fact that ~~science~~ neither science nor photography can give what the poet can is evidence that man is more than physical. Besides his outward senses, he has a soul. He can perceive values which neither the chemist nor the physicist can weigh or measure.

The English Chemist, Joseph Priestly writing twenty years before the French Revolution, predicted a glorious future for science, which would make men's situation in the world more easy and comfortable, and consequently, he said, more happy. He was correct in his forecast that the advance of science would bring us material comfort, but wrong in his conclusion that we would be, in consequence, more happy. We now live in a material age, made more comfortable by science, but we are not happier than our ancestors. If poetry were to die, we would be less happy.



Remembered poetry helps us to face trial, tribulation or tragedy with equanimity. Homer, Dante and Shakespeare have made millions of men more steadfast, more generous, more <sup>com</sup>passionate, more loyal. Their poetry breeds peace of soul.

Poetry and science, considered as human activities, are poles apart. But each is necessary; each is necessary to make life full. Each has its role to play. As Matthew Arnold says: "It is the task of science to ascertain the facts of life, and the task of poetry to relate these facts to human experience". But how? Shelley's answer would seem to be that the poet perceives an effect, and in his poetry lays bare the cause. By creative imagination, the poet brings into relief, for the ordinary mortal to perceive, the beauty in all that is seen.

Creative imagination is the link between poetry and science. One cannot begin to become a scientist without some imagination. I have witnessed students setting out to be scientists and falling at the first hurdle, which is mathematics. One cannot understand <sup>(perhaps at an advanced stage of</sup> or operate the tool called higher mathematics <sup>(or use mathematics of 4, or more dimensions</sup> without imagination.

To be a successful scientist, it is not sufficient to have any sort of an imagination, one must have a creative imagination, - especially in these times when nearly every day brings new problems to be faced, and new problems to be solved, problems which were not, and could not have been, thought of when we were students.

A scientist who lacks a creative imagination evolves, in time, into being a mere technologist.

If some people think that scientists are not humanistic, it is because they confuse and confound technologists with scientists. And this, in turn, is due to the fact that they mistake the uses of science, or its applications, for science itself.

This confusion is pardonable, inasmuch as the public, generally, knows science chiefly through its material achievements. Those who are not scientists know little of the internal beauty of science, or of the beauty which it extracts from the study of nature, or from the depths of the universe.

Modern science is the result of the exploration, by the mind of men, of the living cell, the atom, the stars, and outer space. The knowledge derived from the excursions of scientists has brought new beauty to light. This beauty is not ignored by its discoverers.

The ardent scientist is possessed by a sense of wonder equalled only by the wonder of the medieval mystic. His mind is not dried up by his pursuits. Indeed, it is developed. A scientist has to be curious and enquiring. He has to ask questions of nature, and seek her secrets. His searching is good for his mind,- as good for the mind as love is for the soul.

And love, also, comes to the scientist.

In his quest for knowledge, the scientist discovers love,- the love of God for us.

The astronomer discovers:

The Love that makes the planets shine ,

The Love that makes the sun to burn,

The Love that makes the ions in our space,

The Love that makes the protons in our stars,

The Love that makes us love the things of God.



St Lawrence Parish Holy Name Feb 10, 1963:

Questions asked:

Conditions on moon ?

Possibility of landing; when ?

Why Venus probe rather than Mars ?

Are there other planets in our galaxy ? Life on them ?

Communication satellites: will we receive Eurovision ?

Will there be different frequencies than those used on Telstar ?