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The Social Influence of Science.

SOME controversy has taken place lately as to the part played by science in promoting social progress, and an American book appeared in the autumn specially contesting any such claim. The argument is difficult to follow. To those who take a broad view of history it seems obvious that the growing stability of societies, the wider organisation of all kinds of human activities, the quicker transport and closer communication between nations, are all due mainly to the spread of science. To those who look critically at details it seems doubtful whether our societies are really stable, whether life is now happier or nobler than it was in less scientific days, whether the evils and destruction wrought by modern instruments do not outweigh the undoubted advantages that science has brought.

Our judgment in this great debate will be dictated largely by our temperament. The critical, the melancholy, the disappointed will be inclined to think that the rush, the complexity, the vastness of the modern world have brought more evils than they have removed. The young and vigorous, those who enjoy life and hope for its continuance, will take another view, and these, with the improvement in health which still goes on and the increase in prosperity which was continuous until the war, form a large normal majority. The current depression of spirits, which is not perhaps so widespread as is commonly supposed, is due partly to a reaction against the exaggerated optimism of the Victorian age, partly to the troubles due to the war. It ought to be possible to put aside these disturbing influences and take a broad calm view of social progress. In any such survey the influence of science in recent centuries is necessarily a leading feature.

Now the first condition of such a review is to make it wide enough. The processes of life develop by minute changes, and when a violent change does occur, it has to be readjusted and equilibrium set up again by counterbalancing changes. Hence it would be a gross distortion of the truth to judge—and condemn—the industrial revolution by comparing peaceful rural England with the horrors of the early years of the factory system. The latter were new and unforeseen facts which called for special remedial measures. It is equally absurd at the present day to declare modern civilisation bankrupt because the German financial system has broken down and no one has yet seen how to re-establish international trade and credit. These things are momentary, unexpected shocks: the world has passed through far worse storms in its time and we shall weather the less as we have the greater. A sound judgment can be based only on a wide view, and in a matter so vast as social progress affected by science,

the view should be as extensive as the subject itself.

People have lately been using the term "science" in a looser and more comprehensive sense than heretofore. Its roots might be found in the practical skill, the mother-wit and sharp senses of the primitive savage. In any case the beginnings may be seen in the settled communities of the great river-valleys, in Egypt, Babylonia, the Yangtze, as well as in Mexico and Crete. Can one doubt that the science involved in the drawing up of the first calendars by the priests of Egypt and in the marvellous structure of the pyramids was a factor of the first importance in preserving the social order and cohesion of those early theocracies, the first great permanent aggregations of mankind upon the planet? The power of prediction involved in science, and first exemplified in the making of the calendar, was intimately bound up with the power of securing obedience, and the acceptance of their lot by the millions who worshipped the Pharaoh.

The Greeks were, of course, the founders of science in the stricter sense, which seeks the law of change, the principle of unity in the manifold; and it might be thought that the constant disunion of ancient Greece disproved the social or unifying effect of science. But this would be to take a narrow and short-sighted view. Greek science had from the first a strong social value. It formed a link between the early philosophers in the Ionian cities of its birth, and in the case of the Pythagoreans it was the basis of a brotherhood which aimed as much, or more, at social reformation than it did at increasing the scope of abstract thought. In fact all the early Greek philosophers were also interested in social and political problems. They saw that true wisdom was a practical thing, fit to inspire, as Anaxagoras said, "a calm religion free from fear."

But the chief moral and social effect of Greek science came later, first, when Hellenism was spread over the Middle East by the arms of Alexander, secondly, when, in the Greco-Roman world, Greek science and Roman law combined to lay the foundation for the medieval and modern world. The younger Pliny, when pro-consul in Asia Minor under Trajan, gives an interesting illustration. He points to the effect of astronomy in allaying the fears and composing the minds of the mass of the people.

In estimating the social influence of science, however, the mind turns naturally to its greatest expansion in the last few centuries. When in the sixteenth century the mind of Ancient Greece awoke again and men began to seek in Nature herself for the answer to the problems of life, there were two new factors in the world which affected the results of their inquiries. One was the discovery of new lands, the expansion of the West.

The other was the decay of slavery, the recognition of manual and mechanical work as a worthy occupation of good brains. This the Greeks had never recognised, and their failure limited the application of science to industry in ancient times. But with the advent of a New World and a new spirit in industry, from the sixteenth century onwards, the transformation of society by science went on apace. From the middle of the eighteenth century it has become apparent as the dominating force in the world.

Hence the question of the intrinsic value and the social influence of science is primarily a discussion of the effects of the Industrial Revolution in which we still live. The fact that we are living in it now and making it more complete every moment, adds enormously to the difficulty of valuation. It is a part of ourselves and influences almost every act and thought, and therefore to deplore and condemn the tendency, or to wish it away as Ruskin did, is futile in practice and pessimistic in philosophy.

Two or three main points stand out clear in the contemporary picture. They are, in the first place, facts with which the student of social life has to concern himself to understand the movement; and, in the second place, guides to action, indicating the line which those must take who are pressing for the stability and betterment of society.

The world is one in a new—if you will, an artificial—sense, due to the application of science to transport and communications of all kinds. This process is being accelerated by every possible means and is pre-eminently a social one. It must find its issue in complete international trade and a really comprehensive League of Nations, acting as the organ of common interests and opinion. It is most important to remember that the League of Nations, which we already possess, is the fruit of the historical evolution due to science and was only precipitated and not caused by the war. The unification of the whole world is only the result on a large scale of a process which has knit up every particular society in a closer organisation than before. Science, being itself a social product, due to the intercourse of active minds, finds its expression in a social organisation impossible without the application of science. This is seen not only in the organisation of industry but also in every activity of the community from the government downwards. All are closer and more complicated, just in proportion to the extent that the given society has created, imbibed, and applied the results of scientific thinking. Expressed briefly and broadly, but with perfect truth, humanity is the counterpart of science, the practical obverse of the abstract reverse of thought.

To make this process more effective by conscious

effort is therefore the supreme task of those concerned in social progress at the present time. The growth has hitherto been mainly automatic. We have to understand it, grasp it, and turn it to the still greater good of mankind. Science having made the modern world, with all its strength and its weaknesses, let men of science inspire a social will into the whole community, to use this master-instrument for its highest end, the salvation and elevation of the humanity to which it belongs.

F. S. MARVIN.

Phantasms of the Living.

Proceedings of the Society for Psychological Research.
Vol. 33, Part 86, October. (London: F. Edwards; Glasgow: MacLehose, Jackson and Co., 1922.)
16s. 6d. net.

A BOOK entitled "Phantasms of the Living," by Edmund Gurney, F. W. H. Myers, and Frank Podmore, was published in 1886. Under this title were included all experiences where there was reason to suppose that the mind of one living person had affected the mind of another otherwise than through the recognised channels of sense. The chief aim of this book was to produce a cumulative quasi-statistical proof of telepathy.

In the thirty-six years which have elapsed since the publication of this book the Society for Psychological Research has received and published in its *Journal* many accounts of happenings similar to those recorded by Gurney, and in its *Proceedings* of October last Mrs. Henry Sidgwick has submitted the best of these cases to a careful examination and analysis.

While Gurney and his collaborators were chiefly concerned to prove telepathy to be a fact of Nature, Mrs. Sidgwick thinks we have arrived at a stage when, if our knowledge of telepathy is to grow, we must seek light on its process and the conditions under which evidence of it can be obtained. She says: "We may now, for the sake of argument at least, assume that Gurney's book has accomplished its object, and that telepathy is proved, and starting from that point may devote ourselves primarily to seeking for light on the occasions and mode of its operation." Mrs. Sidgwick does not mean to imply that telepathy is yet accepted by the scientific world; but she thinks something more than the mere piling up of facts is required, and that "our facts will be the more readily accepted, the more we can compare them, and, provisionally assuming telepathy, show when and how it occurs."

Many of the best cases received by the Society during the past thirty-six years have already been published in various works on psychical research, and fifty-four have appeared in the *Proceedings* of the

Society for Psychological Research. All these, being therefore already before the public, are excluded from this collection. The cases included have appeared only in the *Journal* of the Society, which is printed for private circulation among members. The value of the present collection is considerably diminished by the exclusion of so many cases which were of course selected for earlier publication, because they were regarded as being specially important or interesting. Even without these, however, we have here some two hundred cases, many of which are important as affording evidence that telepathy does occur, and all of which help to throw some light on the occasions and mode of its operations.

The broad lines of classification adopted in the description of telepathic phenomena may be gathered from the headings of the four chapters into which Mrs. Sidgwick's volume is divided: (1) Experimental and semi-experimental cases; (2) Spontaneous cases in which the percipient's impression is not externalised; (3) Spontaneous cases in which the percipient's impression is externalised as a waking hallucination; also dreams of the same character; (4) Collective and reciprocal cases without evidence of any agency external to the percipient.

In all modern records of telepathic experiences the person whose mind receives the impression is called the percipient, and the person from whose mind the impression comes is called the agent; but it would appear from the evidence that the percipient is very often the "active" party, and that the so-called agent plays a purely passive part. This is seen in the semi-experimental cases in which a percipient is trying to get an impression from another person who is quite unaware that any such attempt is being made. In experimental cases, properly so-called, the agent is deliberately trying to impress telepathically a particular percipient, and that percipient is deliberately trying to receive an impression. It is doubtful, however, what part, if any, the concentrated effort of the agent plays in the success of such experiments.

The experimental and semi-experimental cases recorded in this collection can scarcely be regarded as representative of the group because of the number excluded, owing to their having been already published; but even had these been included there would still have been occasion for Mrs. Sidgwick's comment that "more experiments carefully conducted and well recorded are greatly needed."

Of spontaneous cases in which the percipient's impression is not externalised as a hallucination, Mrs. Sidgwick says: "As a whole the class is not a strong one as evidence of telepathy," because the triviality or vagueness of the impression in many cases makes