

## IS THERE ANYTHING NEW UNDER THE SUN?\*

BY THEODORE J. BRADLEY.

The thoughtful student of the history of medicine and related subjects is often struck by the close relationship between modern theory and practice and the theory and practice of workers in these fields in former times. These workers of old did not have the advantage of the immense mass of knowledge which has been accumulated during recent times, but their abilities were as great as the abilities of modern workers, and we are so often surprised by the similarity of old and modern ideas, that we wonder if there is anything new under the sun.

The question asked in our title is a paraphrase of a frequently quoted proverb, which traces back to the book Ecclesiastes, I-9, in the King James version of the Old Testament, which says: "The thing that has been, it is that which shall be; and that which is done is that which shall be done: and there is no new thing under the sun."

There are many variants of this thought, among which we find an old French proverb, which says: "There is nothing new except what is forgotten." Also, Daniel Webster said, in one of his masterly addresses: "What is valuable is not new, and what is new is not valuable."

A proverb or an epigram expresses a great deal in a few words, and it may be true in a general way, but proverbs are not always completely true in their application to a variety of cases to which they might be applied, and we find that the relationships of old and new practices in medical science may be grouped in the three following classes:

1. Ideas of which old practitioners had a more or less correct conception, with crude and imperfect means of accomplishment.
  2. Ideas of which old practitioners had some conception, but no means of accomplishment.
  3. Ideas of which old practitioners had neither conception nor means of accomplishment.
- These three classes of relationships overlap each other in various ways and there are different ideas of what is meant by old and new, so an exhaustive discussion of them would require much more time than is available here. For this reason we must limit our discussion to a general survey of the subject, which is not claimed to be at all complete.

In any discussion of the history of medicine and its branches, like pharmacy, it is necessary to know and remember that there are three stages in the progress of medicine; these may be called mysticism, empiricism, and rationalism. The advance of medicine through these three stages keeps pace with the advance in culture and civilization in a country, so all three stages are found in the world to-day.

Mysticism, the first stage, is exemplified by the practices of the medicine men of savage tribes, hiding their ignorance under a veil of magic, which works on the religious superstitious beliefs and fears of their patients, who frequently recover from their illnesses and injuries in spite of the treatment they receive.

Some very able men have practiced medicine through all the ages, and they gradually learned that some of their mystical work was really helpful, though did not know why this was so. Thus, empirical medicine gradually developed, and a great deal of what we may call practical knowledge of the healing art was acquired.

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Finally, the physician has been applying modern scientific methods to his work, and during the last few years, almost in our own generation, physicians in the more advanced countries have made advances in their understanding of their work. This has carried them far into the third and final stage of the development of medicine, which we call rationalism. In this stage, the physician is acquiring a more and more accurate knowledge and understanding of his work, so that he knows what treatment a patient needs, and why this treatment is helpful.

In Group I, we have classified theories and practices of which old practitioners had some conception, with crude and imperfect means of accomplishment. We shall briefly discuss four of these theories and their practice in past times and at the present time.

During all the ages, the primitive and ignorant medicine man took his drugs where he found them, and it would be difficult to find many substances, mineral, vegetable or animal, which have not been used as medicines at one time or another. The selection of a substance for use as a medicine was frequently based upon fanciful notions of similarity between disease and remedy, or between desired results and medicine. This method led to such apparently foolish ideas as the use of "sympathetic medicines," "the doctrine of signatures," and others of similar character. Among other medicines used in past times, we find a wide variety of animal parts and products, some of them of a filthy and disgusting nature. When these were used by mystical and empirical hit-or-miss methods, they were seldom effective, and for many years their use was ridiculed and most of them were abandoned. Nevertheless, these crude animal products were the forerunners of the long list of so-called biological remedies which are so widely used now, the difference being only in that the present-day biological remedies are prepared and used by scientific and rational methods.

A closely related parallel to the former use of crude animal products and of the present use of biological remedies is found in the modern development of one of the oldest theories of disease. This is Hippocrates' "humoral theory," which taught that the fluids of the human body consisted of blood, phlegm, black bile, and yellow bile, and that an individual's condition of health or disease depended upon the relative amounts of these different fluids in his body. Hippocrates was one of the greatest men in the long history of medicine, but he knew very little about anatomy or physiology, and probably nothing about what we now call the endocrine glands. Hippocrates' humoral theory influenced medical practice for more than two thousand years, but it was then abandoned and nearly forgotten. Nowadays, we have a rather extensive knowledge of the endocrine glands, and we know that the health of an individual is largely dependent on the secretions of these glands, which, after all, is a modern scientific development of Hippocrates' humoral theory.

Another belief of former times was in the possibility of a panacea or universal medicine which would cure all diseases and prolong life indefinitely. This was sometimes called the "elixir of life," and it was among the substances sought by the iatro-chemists and others, who largely extended our empirical knowledge of the materia medica. We no longer have any reason for belief in this idea, but modern methods of preventive medicine or hygiene have enabled us to more than double the expectation of life at any age from birth to maturity, so we continue to seek,

with a considerable measure of success, the objective of those who were looking for the elixir of life. Perhaps the most interesting of the old theories and modern applications which we have placed in Group I is drawn from physiological chemistry. Like medicine, empirical knowledge of chemistry extends back for a long time, but scientific chemistry has only a comparatively short history of about one hundred and fifty years. Until about one hundred years ago, it was believed that organic compounds could be produced only from other organic compounds or in living organisms, under the influence of what was called "vital energy." Then in 1828, Friederick Woehler, a German chemist, accomplished the synthesis of urea, a simple but nevertheless characteristic organic compound, from inorganic materials. This was the first of a long list of such syntheses of organic compounds, and it appears that work in this field is limited only by our knowledge of organic chemistry and the degree of our skill in doing the work. For nearly a hundred years, the conception of vital energy was completely abandoned, though there was some evidence of its being fundamentally true, if we could have understood and appreciated this evidence. Then came the recent astounding discovery of the substances we call vitamins. We cannot enter into a discussion of vitamins here, but their undoubted existence is proof that the idea of vital energy was fundamentally correct, though the old application of this idea was wrong.

We shall now discuss two illustrations of Group II of these old conceptions and modern developments. In this group, we stated that the workers of old had a correct conception, but no means of accomplishment of their idea. Prominent among these was the idea of the transmutation of metals, which was the objective of the alchemists for hundreds of years. Many of them claimed to have accomplished the transmutation of lead or other base metals into gold, but there is no conclusive evidence of the accomplishment of their claims, and the idea was abandoned for a long time. With the discovery of radium and the study of its properties, however, followed by our recently acquired knowledge of the structure of the atom, we have come to believe that the transmutation of metals is theoretically possible, and the work of the alchemists has been resumed, with a possibility that their objective may be accomplished some time.

Another idea of ancient physicians was the possibility of producing insensibility to pain, which we call anesthesia, but physicians of old could not accomplish this effectively. The best they could do was to knock the patient insensible, which was highly dangerous, or to administer sleep-producing drugs, but narcosis is not anesthesia, and the victim would awaken when his suffering became intense. Then came the discovery of anesthesia, in Georgia and New England, which is one of the greatest boons ever granted to mankind. The accomplishment of this was a new thing, but the idea of it was not.

Lastly, we have the group of accomplishments in medicine and related sciences which were not even thought of until they were accomplished. We can think of at least three of these, all of them interesting and important, but they can only be mentioned very briefly here.

The first of these is bacteriology and its dependent antiseptics, which we believe to be the most important and helpful discovery ever made. If this is so, Louis Pasteur is one of the greatest men who ever lived, and we are anxious to grant this preëminent position to him. Perhaps some will deny that the ideas of the bacterio-

logic origin of many diseases and of antiseptics were not conceived by some ancient physicians, but a rather extensive study of the history of medicine fails to show that anyone had an accurate conception of either.

Other discoveries in this group are the X-ray and the radio-active properties of radium and a few other elements. We have not been able to find a record that anyone ever thought of these things until they were discovered. Finally, we have the radio and its wonders, which were not dreamed of until it was developed from Marconi's wireless telegraph. Several other manifestations of electrical energy could be listed in this group, and the end of these discoveries and developments has not yet been reached.

This is as far as we can proceed with our discussion within the limitation on our time. We have shown that there are interesting relationships between many modern medical practices and the practices of physicians in older times, and that there is a great deal of truth in the proverb "There is no new thing under the sun," but we have also shown that this proverb is not entirely true.

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### SOFT SOAP LINIMENT, SOFT SOAP AND SOAP LINIMENT.

PROPOSED FORMULAS FOR THE U. S. P.\*

BY CYRUS L. COX.<sup>1</sup>

#### LINIMENTUM SAPONIS MOLLIS.

Soft Soap Liniment, or Tincture of Green Soap, is widely used as a detergent. The U. S. P. VIII and X formulas call for soft soap, made from linseed oil. Such a product has a persistent linseed oil odor which remains after use for cleansing. The odor is so persistent that even after the odor of the lavender oil has been rinsed off the linseed oil odor remains. In the U. S. P. IX the soft soap liniment was made from a cottonseed oil soft soap. This preparation was free from objectionable odor. Another objection to the formula in the U. S. P. X is that there is more alcohol in the preparation than is necessary. This high alcohol content is used because of the difficulty experienced in dissolving soft soap in a menstruum of lower alcohol content.

The following formula is easily compounded, and overcomes the objections mentioned above:

Cottonseed Oil	305 cc.
Oil of Lavender	20 cc.
Alcohol	200 cc.
Deknormal Solution of Potassium Hydroxide	65 cc.
Deknormal Solution of Sodium Hydroxide	32 cc.
Water, a sufficient quantity	
To make	1000 cc.

Mix the cottonseed oil, oil of lavender, alcohol and the dekanormal solutions. When a clear solution results, add enough water to make the product measure 1000 cc. Filter.

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