



Peter Paul Rubens' portrait of Paracelsus which hangs in the Museum of Brussels. Photo from the Bettmann Archive.

PARACELSUS—AFTER 400 YEARS

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HATED AND REVILED IN HIS DAY BY PHYSICIANS AND PHARMACISTS ALIKE, HE IS HONORED TO-DAY AS A MEDICAL AND PHARMACEUTICAL GENIUS WHO GAVE A NEW OUTLOOK AND DIRECTION TO BOTH CALLINGS

AUREOLUS Philippus Paracelsus Theophrastus Bombastus of Hohenheim was born in 1493 at Einsiedeln, Switzerland. His father, Wilhelm Bombastus of Hohenheim, was a physician, and at the time of Paracelsus' birth held a

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seat in the Agricultural Institute at Stuttgart. His mother was formerly a matron in the hospital of the Einsiedeln nunnery. In the year 1502 his parents moved to a village in Karnthen where his father, up to the year 1534, was active as a distinguished physician.

Paracelsus, an only child, had his education begun early by his father who tutored him in the various arts and sciences, and who made certain that great stress was placed upon his religious training. When he was 16 years old he entered the University of Basel, and it was here through the teachings of the famous Abbot von Sponheim, Johann Trithemius, that he became a brilliant chemist. He utilized his knowledge by working unceasingly in the laboratory of the

wealthy Siegmund Fugger who lived in Switzerland.

His great thirst for knowledge drove him very early in life to travel through various parts of Europe. In his travels he acquired from the various famous universities a tremendous knowledge of metallurgy, natural history and medicine, and from the people themselves a great deal of useful information.

After an absence of ten years Paracelsus returned to Germany, and it was in 1527 that, partly due to his fame as a skilled physician, and partly due to the recommendation of his distinguished friend, Oecolampadius (Hausschein) von Weinsberg, he was offered a professorship at the University of Basel. He combined at the same time his teachings with that of a practicing physician.

Paracelsus astounded the university and his contemporaries not only by delivering his lectures in German (the lectures were originally given in Latin), but by burning publicly the works of Avicenna and delivering a vehement talk on all the unhappiness contained in those so-called great books.

Despite his amazing cures and his fame as a brilliant physician, Paracelsus continued to make enemies through his criticism of the apothecaries and doctors, who, he said, were in league with one another for the purpose of robbing their patients.

The climaxing reason for Paracelsus' leaving Basel was due to a violent quarrel with Canon Cornelius von Lichtenfels. Paracelsus had attended him in his illness, and at the Canon's being cured, Paracelsus did not receive the fee agreed upon by both of them. The matter was taken to court, and instead of Paracelsus getting the stipulated amount of 100 gold pieces, he received 6.

In consequence of this unfortunate situation, Paracelsus betook himself to Esslingen at Stuttgart where his family had recently purchased a house (that house still stands). It was here that he found shelter for a while, but the yearning for further knowledge burned deeply in him, and he continued his extensive travels.

In the year 1529 he was in Colmar, Beritzhausen and Nurnberg; in 1535 in Bad Pfaffers in Switzerland; in 1536 in Munchroth and Augsburg; in 1537 at Kromnau, Moravia and Vienna; and in 1538 at St. Veit in Karnthen, Augsburg and Meran. Finally, in 1540, he found a haven in the village of Salzburg where the Duke Ernst

of Bavaria gave to him what he needed most at the time, friendship. Here at Salzburg, Paracelsus became ill in September 1541, and died shortly after on the 24th of the same month, 48 years old. His death at such a height in his startling career was probably due to uninterrupted, excessive, abnormal living. His body could not keep up with the terrific pace he had set for himself.

Paracelsus was buried in the churchyard of Bruderhause at Salzburg, and in the year 1572 his remains were taken and placed in the entrance hall of the church.

PARACELSUS' CHARACTER

As every student of history knows, violent quarrels which in intensity exceeded any that we might have now-a-days, were of an almost daily occurrence between the scientific men of former periods. This may be readily understood when we remember that there existed no means to prove one's point by an experiment that might convince the opponent: that the only way to counter the opponent was to talk louder, praise one's knowledge more, and retaliate the calling of names by calling more and stronger names.

Paracelsus was no exception in this respect. He was a reformer, a man of genius, an outstanding physician, making use of new and daring methods to cure the sick. All of this was sufficient to make him a target for violent attacks by his colleagues: an object of jealousy and persecution. On the other hand, Paracelsus had many adherents who praised him highly and followed his teachings blindly; men such as Andreas Libavius, Oswald Croll, Adrian Von Mynsicht, Quercetanus and the famed Turquet de Mayerne.

In his innermost being, Paracelsus was a man honest and true; endowed with a very good opinion of his own greatness and knowledge. True, in this belief in his own greatness he often went beyond the limits of what we would call gentlemanly behavior and manners, but this may be attributed to his education, his roaming life and his unfavorable position in his later years. He says of himself: "My own manner suits me perfectly. But that you may understand my peculiar ways, please note that by nature I am not finely made; nor is it my country's manner to get things by means of silken threads. We were not educated with sweet things, nor with honey or white bread, but with cheese, milk and black bread. Such things do not make fine fellows,"

Numerous, indeed, are statements in his genuine writings, which prove that he was a character of sterling qualities, of deep religious convictions and sincere enthusiasm for the well-being of humanity. Bitter enemies of his never dared to deny these virtues in him. The claims of his opponents to the effect that he lacked real education, that he was grossly superstitious, that he had a strong tendency to mysticism, theosophy and astrology, are quite unjustified. Whatever little of these faults was in his make-up, he shared with the most excellent men of his time. The only real failing in him was that he at times used alcoholic drink excessively, but even here his two chief accusers, Oporinus and Erastus, were fanatics whose testimony is not without bias.

Paracelsus was a tireless, intensive worker. His writings were edited and published in ten volumes by Huser, in 1589. In addition, Paracelsus laid down his chemical and pharmaceutical knowledge in the following publications: "Archidoza," "De Tinctura Physicorum," "Tracts on Natural Things, Herbs, Metals and Precious Stones."

His entire life was spent in trying to reform and change the practices then prevailing in medicine and pharmacy. He knew well that his was a voice crying in the wilderness, but that did not deter him from calling a spade a spade and from lashing out in violent language against physicians and pharmacists alike. He said: "In the apothecary's wooden boxes and containers is nothing but quackery and as these containers are, so are the doctors and apothecaries; for like and like go together. It has happened to me that the apothecaries, by their great ignorance, have used substitutes and, in addition, have demanded exorbitant prices or high praises. They praise their medicines so highly, that I cannot believe that cleverer liars can be found. They are false and betray the doctors; they lead them by the nose. If they say, 'that is so,' the doctor answers 'yes, my dear Mr. Apothecary.' And so, one fools the other one. God help the sick if they fall into such hands."

No wonder that his colleagues replied with names such as "cacofrastus" (diseased maniac) or "stubborn mule" and other choice terms.

But he went his way unafraid and stated: "I know that I please no one except the sick whom I heal."

On another occasion, he states: "It is the physicians' business to cure the sick, not to en-

rich the apothecaries. They are my enemies because I will not empty their boxes. My recipes are simple and do not call for forty or fifty ingredients."

PARACELSUS THE PHARMACIST

Nothing that may be said about Paracelsus as a pharmacist can detract from the fact that he was a physician first and foremost who aroused admiration and wonder because of his many miraculous cures of diseases which other famous doctors of his time had dispaired of. But it was customary in his day for many physicians to prepare their own medicines, while others had them prepared by the pharmacists, usually supervising the preparation. But Paracelsus had unfortunate experiences with some of the pharmacists' preparations; also, he was what we would term a research pharmacist-physician who blazed new trails in therapeutics—he had to prepare most of his remedies himself.

Condensing the statement of the merits of this genius, we may say the following:

1. Paracelsus broke with a tradition in medicine of thousands of years which tied the hands of every physician to the methods and dictates of writers, who had lived and worked a thousand years before that time, such as Galen, Avicenna and others. How strong this tradition was is shown by a remark made by a famous professor of medicine in the University of Padua, who said: "I would rather be wrong with Galen in treating the sick than right with Paracelsus."

2. Paracelsus immensely enriched the materia medica by the introduction of metallic remedies for internal use; moreover, he defended his belief that poisons when used internally under proper precautions and proper dosage are useful remedies—no one had dared to do this before him.

3. He condemned, fiercely, the pharmacists for using numerous ingredients in their medicines, some of them containing forty or fifty and upward components. Paracelsus called for simplicity in pharmaceutical preparations.

4. He insisted upon the use of native herbs, claiming that God had provided a remedy for every disease in the same country where the disease was found.

While these are merits of great importance, we must not forget that Paracelsus was a man of

his time subject to many bizarre beliefs that seem most strange to us. To the debit side of his evaluation must be placed his revival of the belief in the so-called Doctrine of the Signatures, his proposition of the *Unguentum Sympatheticum* and of the *Arcanas*.

The Doctrine of the Signatures was not new; it had its origin in very olden times, but it had been forgotten. Out of his deep religious conviction, Paracelsus revived it and for nearly 200 years after his time, it played a part in medicine.

It was the firm belief of the medical men of the 16th and 17th centuries that the plant world contained all of the remedies needed to cure the ills of mankind; nearly every plant known to the naturalists of that time was credited with some therapeutic action. The difficulty was to determine which plant was suitable in a given case; true there were data obtained by experience, but they were more or less unreliable and uncertain. It appeared quite logical to assume that a medicine composed of many ingredients might be more apt to effect a cure than one consisting of few.

Paracelsus did not accept this point of view. His religious mind wished that somehow God would not fail to indicate the proper use of plants to mankind, and so he revived and advocated the view that any striking characteristic of a plant indicated its use as a medicine, *viz.*, the walnut, on account of its convolutions, for brain disorders; red flowers for blood disorders; yellow ones, such as turmeric, rhubarb, saffron, in jaundice and biliousness; euphrasia for eye diseases because the black spot in the flower resembles the pupil of an eye, and so forth. This was the Paracelsus "Doctrine of the Signatures."

In common with all medical men of his day, the views and ideas of Paracelsus as to the nature and the causes of diseases consisted of a mixture of weird beliefs. He accepted the views of Basil Valentine to the effect that the human body requires for well-being a careful balance of mercury, sulfur and salt. Should the sulfur increase in quantity, fever and plague would result, while an overbalance of mercury or salt would be followed by paralysis or dropsy. External diseases were manifestations of internal disorders caused by a spiritual effect; disease according to him was not physical but spiritual, and a remedy had to be used which was antagonistic not to the disease in a physical sense, but to the spiritual seat of the disease. Such remedies he termed

"Arcana" and prepared them by extracting plants with water, alcohol or acids; or he would pound plants to a pulp and let the mixture ferment, and use the juice either as such or after distillation.

From his belief in the spiritual element came his "Sympathetic Remedy," the so-called "*Unguentum Armarum*," an ointment consisting of powdered burnt earth worms, dried boar's brain, red sandalwood, mummy, blood stone, one ounce each, with one dram of powdered moss from the skull of a man who had been hanged and not buried. With these he made an ointment with four ounces each of boar's and bear fat, purified by heating the fats and pouring them into cold water. This ointment was not applied to a wound, but upon the weapon which had caused it. The wound was simply washed with cold water and bandaged with clean linen. It was assumed that a certain magnetic current was created, acting from the anointed weapon which acted upon the wound and caused it to heal. On other occasions, Paracelsus applied the leaves of *Polygonum persicaria* to sores and ulcers, then these leaves were buried in the expectation that these leaves would attract the evil spirits like a magnet, drawing these spirits from the patient to the earth.

With the creation of the *Arcanas* Paracelsus laid the foundation for a traffic in secret remedies—he did not disdain to keep the composition of some of his remedies secret. This practice was later thoroughly exploited by his followers, some of whom sold their secret remedies at outrageously high prices. It was the beginning of the nostrum era.

From a pharmaceutical point of view, Paracelsus blazed new trails. He prepared new chemicals and used them internally; for example, mercury had been used only externally for syphilis. Paracelsus fused mercury with nitric acid, or nitrites, and obtained the red precipitate which he made into pills with theriac and honey, as a purgative. Similarly he prepared arsenates and antimonates, the former for external uses only. He distilled spirit of wine and re-distilled it. A compound of gold and mercuric chloride was his Elixir of Long Life. He had great faith in the products of distillation of vitriol and alcohol, his "oyle of wine." He examined mineral waters and used a tincture of nutgall to show the presence or absence of iron in it; numerous additional experiments along what we would term chemo-

therapeutics might be recited, but let us proceed to strictly pharmaceutical preparations made by Paracelsus.

We have already mentioned that in making pills, he used theriac as a diluent and honey or cherry juice as excipient; on another occasion he made a pill of a solution of mercury, aloes, myrrh and saffron with an oyle of staphisagria as excipient. He prepared powders, such as a mixture of finely powdered marcasite (an iron pyrite), powdered coral and plantain seed as a hemostate; he used mixtures of equal parts of talcum and bean starch as an absorbent for wounds and ulcers; calamine in eye salves and for ulcers, made into a plaster "where a growth of fresh flesh is required." He prepared troches using mucilage of acacia and mint or plantain water; for ointments he used the fat of foxes, the grease of a red hog, bear's fat or oil of almonds as bases; for masses and pastes, he employed tragacanth, psyllium, foenugreek, and acacia or mucilages. All of his formulas show that he was thoroughly familiar with good pharmaceutical practices which, indeed, were not so very different, fundamentally at least, from our own. His prescriptions were simple; rarely did they contain more than three or four ingredients, and there was considerably more thought and logic for the efficiency and curative effects than in those of any of his contemporaries.

It is not possible within the limitations of time and space devoted to this subject to describe the numerous remedies which this man created, such as his *Essentia Mercurialis*, his Quintessences, his Laudanum, his *Oleum Philosophorum*, his *Tinctura Metallorum*, his *Confectio Anti-Epileptica*, his Balsam of Wounds, his organo-therapeutic remedies, and so on and on.

When Paracelsus died at the early age of 48 years, he was a man broken in mind and body; the amount of work that he had done was tremendous, the persecutions he had to endure from his colleagues in medicine were great; at times he lived in affluent circumstances only to be thrown quickly into abject poverty and starvation. He

left to the world many publications. Those of pharmaceutical interest are:

"Archidoxa de Quinta Essentia"
 "De Arcanis"
 "De Elixiriis"
 "De Thermis"
 "Declaration to Prepare Hellabore"
 "Methodus Pharmacandi"

On a marble monument erected to him at Salzburg is this inscription:

"Conditur hic Philipus Theophrastus, insignis Medicinæ Doctor, qui dira illa vulnera, lepram, pogragram, hydropsim, aliaque insanabilia contagia mirificè arte sustulit; ac bone sua in pauperes distribuenda collocandaque honoravit. Anno 1541, die Septembre 24, vitam cum morte mutavit."

(Here lies Philipus Theophrastus, the famous Doctor of Medicine, who by his wonderful art cured the worst diseases, wounds, leprosy, gout, dropsy and other diseases deemed incurable and to his honor shared his possessions with the poor.)

On this occasion, the 400th anniversary of his death, let us honor him and express our admiration for this man of unbounded energy and courage; an outstanding and astonishing medical and pharmaceutical genius and reformer; a revolutionary spirit who, as his contemporary Martin Luther gave new ideas and direction in religion, so Paracelsus gave a new outlook and direction in medicine and pharmacy.

"A History of Chemistry," F. P. Armitage.
 "A History of Pharmacy," James Grier.
 "Chronicles of Pharmacy," Vols. 1 and 2, Wootton.
 "Four Thousand Years of Pharmacy," Charles H. LaWall.
 "Geschichte der Apotheke," A. Phillippe and Dr. Hermann Ludwig.
 "Geschichte der Pharmazie," Hermann Schelenz.
 "Hermetic and Alchemical Writings of Paracelsus," A. E. Waite.
 "History of Pharmacy," Edward Kremers and George Urdang.
 "114 Experiments and Cures of Phillip Theophrastus Paracelsus," Barnard G. Londra A. Porter Aquitanus.
 "Life and Doctrines of Paracelsus," Franz Hartmann.
 "Life of Paracelsus," A. M. Stoddart.
 "Mystery and Art of Apothecary," C. J. S. Thompson.
 "Paracelsus—Greatest of the Alchemists," Franz Hartmann.
 "Pictorial History of Ancient Pharmacy and Medicine," Hermann Peters.



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