

PROF. GOODWIN'S LECTURE

**On Alchemy, Delivered on the Evening of University Day,
Oct. 16th, in Convocation Hall.**

Mr. Chancellor, Gentlemen of Convocation, Ladies and Gentlemen:

It is usual for the speaker on university day to address you on some subject connected with that which he professes in the university. I shall not depart from the custom. The study of the earlier stages of growth of a science, as of an animal or a plant, reveals those peculiarities of origin and structure which have given the mature science its characteristics. The history of science is a most attractive one. It is the history of man's efforts to pierce the dark clouds of mystery which enveloped, and still obscure, the physical world. In the infancy of the race a man whose intellect was a century in advance of his time, questioned nature, got startling answers, excited the amazement of his kind, and became a magician. Another, mapping out the heavens and tracing the mazy paths of the "wanderers" there, heard coming to him, as the waves from the infinity of space, the "music of the spheres," and telling how this music sweeps across the tense chords of human life, throwing them into sympathetic and ever-varying vibrations, Astrology was born. Then some peering mortal looked close at Protean matter, tortured it into new and wonderful forms, dreamed of dull lead changing into glowing gold, told of an *elixir vitae*, renewing the youth of all who drank of it, and brought Alchemy to life. Magic gave rise to Natural Philosophy, experimental physics. Astrology developed into the exact Science, Astronomy. Alchemy gave birth to Chemistry and Mineralogy. It is of Alchemy in its relations to Chemistry that I would speak to you. The word Alchemy is very significant. The prefix "al" takes us away back to that age in which the Arabs took kindly to a civilized life, and brought their keenness of vision and clearness of thought to bear upon the sciences and arts. It was a golden age.

"When the breeze of a joyful dawn blew free,
In the silken sail of infancy."

The infancy of civilization.

"A goodly place, a goodly time,
For it was in the golden prime
Of good Haroun Alraschid."

The rest of the word is, in all probability, derived from the ancient name of Egypt "Cham" or "Ham." Thus, Alchemy and her daughter Chemistry come to us from the land of the sphinx and the pyramids, veiled in all the sweet mystery of the "Arabian Nights." Alchemy was *The Chemistry*, and had for its aim two things: (1) The transmutation of

THE BASER METALS INTO GOLD

and (2) the discovery of a marvellous potion which could confer corporeal immortality on the drinkers of it. These were the articles of the Alchemist's faith, and visionary though they were, they led him in his search to the discovery of a thousand valuable facts, so that out of Alchemy came Pharmacy, Chemistry and Metallurgy. The Alchemist had certain traditions woven into his creed, traditions of the origin of his art. The art of making gold; according to these traditions, date almost from the beginning of the history of man. It was not a human invention but was communicated to mankind by the angels, whether of light or darkness it is not stated. This legend is interwoven with that passage of the Bible which tells us that the sons of God "took to themselves wives from among the daughters of men." It is assumed that these sons of God were angels who thus abandoned

heaven and taught the human race among other things the art of making gold. Hermes Trismegistus figures largely in alchemical legends. Ages after the flood a woman Sarah, found in a cove near Hebron a dead body, still intact and holding in its hands an emerald tablet on which were engraven thirteen sentences in the Phoenecian language. They were:

"The words of the secrets of Hermes Trismegistus.

"1. I speak not fictitious things, but what is true and most certain.

"2. What is below is like that which is above, and what is above is even as that which is below, to accomplish the miracles of one thing.

"3. As all things were produced by the meditation of one Being, so all things were produced from this one thing by adaptation.

"4. Its father is *Sol*; its mother is *Luna*; the Earth is its nurse.

"5. It is the cause of all perfection throughout the whole world.

"6. Its power is perfect, if it be changed into earth."

"7. Separate the earth from the fire, the subtle from the gross, acting prudently and with judgment.

"8. Ascend from earth to heaven, and then again descend to the earth, and unite the powers of things superior and things inferior. Thus you will possess the glory of the whole world, and all obscurity will fly far away from you.

"9. This thing has more fortitude than fortitude itself; because it will overcome every subtle thing, and penetrate every solid thing.

"10. From this the world was formed.

"11. Hence proceed wonderful things which are of this nature.

"12. For this reason I am called Hermes Trismegistus, because I possess three parts of the philosophy of the whole world.

"13. What I had to say about the workings of the sun is completed."

This was the oracle of the alchemists. In its obscurity they discovered all knowledge. Taking these sentences as texts they elaborated wonderful sermons on the properties of things, theories of the constitution of matter, and processes for making the potent philosopher's stone and *elixir vitae*. This philosopher's stone was to be the finger of Midas turning all to gold. It was this golden vision which inspired the alchemist in his trying and laborious experiments. With keen, eager eyes,

DEEP SET IN A WAN FACE.

sharpened by midnight toil and disappointed hope, he bent over the glowing crucible, stirring, varying the ingredients, pushing the fierce heat to a yet brighter rage, and noting with intense anxiety the slightest changes in appearance. Many changes were observed, and often the addition of a powder brought out the yellow flash of gold, but the gold was only gold in its glitter. Many tales are told of the discovery of the philosopher's stone, and processes are given for its preparation. These are all clothed in mystical language, so that it is impossible to translate them. Here is one process taken from a tract ascribed to Hermes Trismegistus,—"Tractatus aureus de Lapidis Physici Secretis." "Take of moisture an ounce and a half; of meridional redness, that is the soul of the sun, a fourth part, that is half an ounce; of yellow seyr likewise half an ounce; and of auripigmentum a half ounce, making in all three ounces. Know that the vine of wise men is extracted in threes, and its wine at last completed in thirty." No doubt if a modern chemist could obtain a little 'soul of the sun' the philosopher's stone would soon be discovered. Many strange stories are told of mysterious travellers who produced supplies of gold by equally mysterious