SCIENCE

FRIDAY, MARCH 25, 1898.

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MSS. intended for publication and books, etc., intended for review should be sent to the responsible editor, Prof. J. McKeen Cattell, Garrison-on-Hudson, N. Y.

*IATRO-CHEMISTRY IN 1897.**

PHINEAS T. BARNUM, the prince of American showmen, discovered early in his successful career that 'the people like to be humbugged,' and he showed great ability in profiting by this weakness; it must be said to his credit, however, that he always honorably gave the people full value for their money. This love of humbug seems to be exceedingly strong in respect to the healing of diseases, and in all ages those who practiced the art have taken advantage of man's credulity; it is not necessary to transcribe the contents of that model of condensation, Thomas Joseph Pettigrew's treatise on superstition in medicine and surgery (London, 1844), to convince my hearers of this truth. In 1897 we expect better things; we are prone to believe that the universal education of the masses, the popularization of the facts and theories of science, fit the people to appreciate at their true value the claims of charlatans. Americans looking reverently to the Old World, where brilliant lights illumine the paths of philosophy and science, hardly expect to find there also the deepest shadows of ignorance and credulity, yet no higher position can be assigned to the modern adaptation of Iatro-Chemistry known as 'Electro-Homeopathy.' Originating in Italy, it has taken root in Germany and flourishes in

*Read at Washington Chemical Society, February 10, 1898.

France; more than one hundred publications, including three journals devoted to the cause, attest its influence and its popularity.

The founder of this novel school of chemical medicine, Count Cesare Mattei, was an interesting character; he owed his higher education to a duel and his medical knowledge to his neighbor's dog. He was most successful in organizing a huge scheme for swindling unfortunate victims of disease, though unable to plead poverty as an apology; to his dupes he posed as a philanthropist and his friends regarded him as a second Æsculapius. Mattei was born January 11, 1809, at Bologna, in the palatial residence of his parents; his primary education was in local schools, but at the age of nineteen he lost his father, who bequeathed him a princely estate and a fortune, whereupon he spent several years in travel and gay life. He seems, however, to have turned his attention to medicine at an early date, for he published a work on 'Treatment for Cancer' in 1830.

When about thirty years of age Mattei fought a duel with a young blade, after a quarrel at a masked ball, and soon after he attacked his adversary in a satirical pamphlet, which greatly amused the fashionable circles of Bologna. This pasquinade fell into the hands of Paolo Costa, the venerated instructor of youth, who sought out Mattei and in a single interview effected his conversion to the serious study of philosophy. The quondam duellist became Costa's favorite pupil in the physical and natural sciences and in literature.

The troubled years 1847–1849 threw Mattei into public life, and championing the cause of Pope Pius IX. the latter rewarded him with the title of Count and other honors. Retiring to an old castle, on his estate, which he had sumptuously restored in Moorish style, Mattei devoted himself to the study of botany, chemistry and physiology. He adopted the principles of Hahnemann, but was not satisfied with the curative results of this system of medical practice.

One day, while promenading on his estate, he noticed a dog, belonging to a neighbor, eagerly devouring certain plants which the animal's instinct had showed him was suited to his condition. Mattei at once began a series of investigations which resulted in the discovery of an entirely original materia medica and an amazing philosophical system. He collected the plants sagaciously indicated by the dog, and extracted from them, by processes known only to the medieval Iatro-Chemists, the active principles. With these he experimented on the poor peasants living on his estate and ascertained that they had extraordinary power in curing all scrofulous diseases. He next examined other vegetable growths and little by little discovered other active principles, thus building up a unique materia medica. This comprises 38 medicines, of which 32 are in the form of pills and 6 in the shape of fragrant, colorless liquids.

Instead of naming the first discovered medicine after his neighbor's dog, he ungratefully called it 'Antiscrofoloso No. 1,' which, for convenience, is abbreviated to 'Scrofoloso No. 1;' this proved to be a veritable panacea for the greatest variety of ailments, healing 90 per cent. of the patients who came under his care. Eight other medicines received the name 'scrofolosa,' being distinguished by appropriate numbers and adjectives; ten of them are dubbed 'canceroso,' and the rest are varieties of angioitico, pettorale, febbrifugo, vermifugo, linfatico, venereo, and so forth. Five of the six colorless liquids were colored to facilitate differentiation, and are named 'red electricity,' 'yellow electricity,' 'blue electricity,' 'green electricity' and 'white electricity.' The sixth liquid, known as 'Aqua per la pella'

(skin-water), completes this remarkably simple materia medica. These nostrums affect beneficially different organs and parts of the body; 'Scrofoloso No. 5' is prescribed for diseases of the skin, the muscles and the spinal marrow; 'Canceroso No. 2' is particularly good for subcutaneous cellular tissue; 'Angioitico No. 1' affects the heart, the blood vessels and the arterial circulation generally. Nearly all the medicaments are used internally and externally with equal success; moreover, when administered internally, the nature of their action depends on the size of the dose, even contrary results being obtained by varying the quantity prescribed. This property compensates for the small number of medicines; and the more ill the patient the smaller the dose of the required article.

The five vegetable electricities 'level the differences of tension of the polarities in the nervous system;' the blue electricity acts on the arterial system, the green on the veinous system, and the white is neutral and can be used indifferently. The yellow electricity can be given safely to hysterical persons.

As might be expected, this method of treatment has been applied to the domestic animals, and the literature of the subject contains a 'Veterinary Guide' (Bologna, 1893).

The fame of Mattei's cures attracted to Bologna pilgrims from far and wide, to the great dissatisfaction of the regular physicians. In 1869 Pope Pius IX. gave him part of the hospital at Santa Theresa, where he accomplished such marvellous cures that the crowds had to be controlled by soldiers. In the same year the first publications appeared, of which the most noteworthy is that by Dr. C. F. Zimpel, entitled: 'Therapeutics of Vegetable Electricity.' For many years Mattei treated all patients gratuitously, but when he saw conscienceless speculators reaping a harvest by the misuse of his system he organized in his palace a commercial company for the manufacture of medicines and the protection of the public.

Meanwhile the Count devoted his tireless energies to other matters; he improved the neighboring roads, built bridges and looked after the material and spiritual welfare of those living on his domain. At present the palace of Mattei is almost entirely given up to the industrial enterprise; the official organ, *Moniteur de l'Electro-Homéopathie*, is edited there, and the Bolognese mansion is the center of benign influence. Mattei lived in simple luxury; he never married, but devoted himself to the philanthropic work of diminishing the sum of human misery and the accumulation of personal wealth.

He died April 3, 1896, and was buried in a sepulchre of his own construction at his castle of Rocchetta; the business of manufacturing vegetable electricity of all colors being now carried on by his adopted son, Mario Venturoli-Mattei.

Verily the *limbus fatuorum* needs to be most spacious!

The disciples of Count Mattei allege that he possessed occult knowledge of nature derived from the iatro-chemical school founded by Paracelsus, though some claim for it still greater antiquity. "Passing by Plato, Moses and St. John," writes *Saturnus*,* "the history of spagyrical philosophy begins with Albertus Magnus, Raymund Lully and Roger Bacon, of the thirteenth century, but reached its highest development under Paracelsus." One of its brightest luminaries was Hahnemann. Mattei, however, is said to have found the kernel of his philosophy in the writings of John Baptist van Helmont, who died in 1644. Since that time the knowledge of secret medicines has been preserved

* Iatro-chimie et Electro-Homéopathie. Traduit de l' Allemand. Paris, 1897. 18mo. Portraits of Paracelsus and Count Mattei.

by members of occult fraternities; they alone understood the mystical, spiritual application of the remedies, while the "profane wearied themselves in vain efforts to discover the arcana of the Iatro-Chemists, to the great amusement of the initiated, and in spite of whose ironical smiles, they boil, fuse, distil and digest only to find that they are lost in a labyrinth from which there is no exit." The adversaries of this system claim that it is nothing more than an old woman's fancy, but its advocates point to the brilliant careers of Kepler, Dante, Leonardo da Vinci, Shakespeare, Goethe, Sir Isaac Newton and Richard Wagner, to prove the contrary.

The characteristics of esoteric science are said to be: "The principle of analogy and its consequences; the relation of the forces and the laws of the macrocosm to those of the microcosm; logical investigation both experimental and speculative; the reciprocity of cause and effect determining the oscillations of blind chance." Only students of these principles are able to apply the mysterious remedies of the new therapeutics so as fully to secure miraculous efficiency.

An important factor in iatro-chemical philosophy is the influence of the sun, moon and planets on diseases; the moon especially excites dreams, insomnia, somnambulism, and governs the periodicity of fevers. But the most potent of all celestial influences is the 'odic-magnetic virtue of the stars.'

A notable feature, overlooked by official medicine, but rescued from oblivion by the promoters of Electro-Homeopathy, is the peculiar way in which 'odic force' is distributed in the human body; it flows along three principal axes, head to feet, left side to right side and back to chest; this polarized fluid is assimilated by the five vegetable electricities, which explains their efficiency. Physicians who appreciate the importance of the 'three axes of odic-magnetic polarity' place their patients in bed on their right sides (—), with their heads (—) to the north (+) and their faces (+) to the wall.

The chemical philosophy of this school has the merit of simplicity; the unity of matter and the four ancient elements are the basic principles. Fire is hydrogen; Air is oxygen; Water is nitrogen, and Earth is carbon; the alchemical salts, sulphur and mercury are respectively the principles of solidity, volatility and liquidity. The Alkahest, or universal solvent, of spagyrical philosophy is acetone; the *spiritus philosophorum* is not merely a liquid of superior medicinal potency, it is the "true spirit of the knowledge of control over Nature's forces, which results from unions with and absorption by the Divine Being."

The position of modern Iatro-Chemists with reference to the transmutation of metals is entirely favorable to the ancient doctrine. "Modern science," writes one, "regards the creation of gold as a superstitious fable, the product of medieval imaginations, but transmutation is an undeniable fact; a family beloved by the author preserves as a relic an ingot of gold, which an ancestor, initiated in the secrets of Hermetism, had manufactured by a formula now intelligible only to adepts." *L' Hyperchimie*, the organ of alchemists in France, has recently added Electro-Homeopathy to the subjects it advocates, and contains an enthusiastic review of the latest treatise on this medical practice; the review concludes with the remark that: "Occult therapeutics is destined to become the system of the future, as it has been that of the past, for it demonstrates with invincible logic the admirable unity of the sacred sciences."

The literature of this amazing quackery is already large; books explaining the system have been published in French, German, English, Swedish, Polish, Spanish and Hungarian, besides the original Italian. France, Germany and England have their

monthly journals devoted to the propagandism of the system. Advertisements in the press of Europe and South America announce that certain physicians practice Electro-Homeopathy at given addresses. One of these doctors seeks pupils, to introduce the practice into all parts of the world, and the 'people who love to be humbugged' will doubtless give them cordial support.

"No class escapes them, from the poor man's pay,
The nostrum takes no trifling part away."—*Crabbe.*

Thoreau has remarked that "Nothing more strikingly betrays the credulity of mankind than medicine; quackery is a thing universal and universally successful. In this case it becomes literally true that no imposition is too great for the credulity of men." This is confirmed by the existence of another enterprise recently started and still wilder in its philosophy than Mattei's system, styled 'Hermetic Homeopathy.' Rejecting the modern theory of vitalism, the promoters of this school revert to the old hermetic science of the 16th century which yielded such marvellous results but is to-day treated with ridicule and disdain. They accept the doctrines of Paracelsus as respects the *mumia*, advocate cure of diseases by transplantation, and regard astrology as indispensable to a physician. The remedies and elixirs of Hermetic Homeopathy are prepared in the laboratory of two Past Masters in Occult Science, under the direction of the Secretary of the Alchemical Society of France, with magical incantations and under the most favorable conjunctions of the planets. Among the cure-alls offered is the panacea of the alchemists, potable gold. Disciples of Hermetic Homeopathy advocate treatment of diseases by transplantation, their reasoning is the same as that of Paracelsus: "Man possesses magnetic power by which he can attract good and bad subtile emanations just as a magnet attracts particles of iron. Of iron a magnet can be made that will draw to itself iron, and in like manner of vital substance a magnet can be made that will attract vitality. Such a magnet is called *magnes microcosmi* and it can be prepared of substances that have remained some time in the human body and that have become impregnated with vitality. Such are hair, excrements, urine, blood, etc., and a magnet made of any of these and applied to the diseased organ, or part of the body, will diminish the inflammation in that part because it attracts the superabundance of magnetism conveyed there by the flow of blood. In a similar way diseases may be transferred to healthy animals, or even to other persons, on which fact sorcery is based. This explains, argue the writers, the action of poultices, of plasters and of leeches.

The difference between ordinary homeopathic practice and that of the hermetic school is shown in the manner of treating measles; an old-fashioned practitioner would prescribe pulsatilla and aconite, with belladonna. A disciple of Mattei would administer scrofoloso, increasing the dilution as the disease becomes more serious; the hermetic homœopathist puts the patient to bed and covers him with blue or violet coverlids and surrounds him with blue or violet curtains. Provided the patient is sanguine or bilious, but if he be lymphatic or nervous then rose or green hangings and bedspreads should be used. At the same time the air of the room must be ozonized, the patients' wrists must be surrounded with metallic gold, and the water in which the hermetic globules are dissolved must be positively electrified. When convalescent the patient must have sun-baths, cold-water douches, water-baths or air-baths, according to his temperament, lymphatic, nervous, sanguine or bilious. When able to leave the house he must take steam-baths charged with ammonia on four days.

Of course this school of medicine has its

monthly organ, published in Paris, now in its second year, *Thérapeutique Intégrale*. Its guiding spirit is Dr. G. Encausse, known to modern alchemists as Papus, the author of many treatises on the ancient pseudo-science. As apostles and forerunners of this system he claims Hippocrates, Paracelsus, Hahnemann.

All this would be very amusing if it were not sad—sad to find that educated men can so degrade their knowledge of chemistry, physiology and medicine; sad to think of the conceptions of these sciences formed by persons subject to the influence of these 'lewd impostors;' sad to think of the suffering that ensues for lack of proper treatment; sad to think of the unscrupulous immorality of those willing to trifle with human life for selfish gain. One is inclined to cry with Massinger:

> "Out you imposters,
> Quack salving, cheating montebanks, your skill
> Is to make sound men sick, and sick men kill."

H. CARRINGTON BOLTON.

THE DEVELOPMENT OF ELECTRICAL SCIENCE.

II.

THE subject of telegraphy is closely associated with the present excellent system of electrical measurements and with the invention of many of our most delicate measuring instruments. As the applications of electricity increased there gradually grew up a new branch of engineering, a branch, however, in which the foot-rule, pound-weight, chronometer and thermometer were not sufficient. Other standards of measurement were required, in order that quantities could be gauged and consistent work done. The way to connect the measurements of the new quantities with the units already in use in dynamics had been pointed out by Gauss and others, and at the suggestion of Thomson the British Association appointed a committee in 1861 to determine the best standard of electrical resistance. This led to an unexpected amount of work not only on a standard of resistance, but also on the general subject of electrical measurement. The committee regretted, at the end of the first year, that it could not give a final report, but hoped that the inherent difficulty and importance of the subject would sufficiently account for the delay. It can hardly be said that the final report has yet been forthcoming, as a committee with some of the original members in it still exists and reports regularly every year on valuable work done by it. The committee worked energetically for a number of years, not only on the standard of resistance, but on those of current, electro-motive force and capacity. It incidentally supplied a great deal of quantitative data on a number of subjects and particularly as to the permanence of alloys, the variation of their resistance with temperature as depending on their composition and so forth. In looking over the results of the early work of the British Association committee one is apt to indulge in adverse criticism. It is hard for many of the younger workers to appreciate the difficulties which are met in a first attempt. It would be equally just to congratulate ourselves that we have better marksmen to-day than there were fifty years ago, without making allowance for the modern rifle.

The first absolute determination of resistance was probably that made by Kirchhoff about fifty years ago. Weber published his method in 1852, and then came the B. A. determination by Maxwell, Stewart and Jenkins in 1863. Neither of these were very exact, but they paved the way for the splendid exhibitions of experimental skill which followed. Among those to whom we are most indebted for this later work may be mentioned Kohlrausch, Rayleigh, Glazebrook, Rowland, Wiedemann, Mascart, etc. The greatest step in advance in recent years