Rey lived at the commencement of an epoch, and he was the founder of a branch of scientific inquiry which helped to render that epoch glorious. By energy and perseverance he ascended a lofty eminence, whence he saw in the distance an unknown country—dimly, indeed, and far from him; still it was there, and he pointed out its direction to his fellow-men; but explorers were rare in that day, and men cared not to venture across pathless wastes, to ascend hitherto untrod mountains, in order to arrive at that which, when found, might prove a barren and unproductive country.

Rey's work was but little known during the 147 years which intervened between its publication and its reprint in 1777. It was published in a small and obscure town of Provence, and from the fact that at the time of the reprint it was extremely scarce, it is to be supposed that only a few copies were originally printed. Had it been better known, the theory of Phlogiston would never have been propounded, and pneumatic chemistry would assuredly sooner have attained the rank of a science. But soon after the "Essays" were published, the discovery of the pressure of the air diverted the minds of the scientific from the study of the chemistry of the air.

The claims of Rey have never been sufficiently acknowledged. Let all honor be given to him; science ought to venerate such a man—a true philosopher, working for her, and loving her for herself alone. In the history of pneumatic chemistry, the name of Rey deserves to stand side by side with those of Mayow, Hales, Priestly, Scheele, and Lavoisier.

Well did Rey write as the concluding words of his treatise:

"Le travail esté mien, le profit en soit au lecteur, et à Dieu seul la gloire."

To be Continued.

On the Employment of Paraffin for Waterproofing. By JOHN STENHOUSE, LL.D., F.R.S., etc.

From the *Practical Mechanics' Journal*, April, 1865.

The materials which in modern times were first employed for waterproofing were beeswax and the various kinds of drying oil, especially linseed oil, which were rendered more siccative by boiling or some other of the processes usually employed for that purpose.

About forty years ago caoutchouc was first successfully used, for rendering fabrics and other materials waterproof, by the late Mr. Chas. Macintosh; and after an interval of about twenty years, gutta percha was first imported into this country, and immediately applied for similar purposes.

In 1832 paraffin was discovered by Reichenbach in the course of his admirable researches on wood and coal tars. He, however, only succeeded in obtaining it in very small quantity, so that for a long time it was only known as a chemical curiosity. It is to Mr. James Young that we are indebted for the production of this material on an industrial scale, by his process which he patented nearly fifteen years ago.

About three years since a patent was taken out by Dr. Stenhouse for employing paraffin as a means of rendering leather waterproof, as well as the various textile and felted fabrics; and in August last an additional patent was granted Dr. Stenhouse for an extension of and improvement on the previous one, which consisted chiefly in combining the paraffin with various proportions of drying oil, it having been found that paraffin alone, especially when applied to fabrics, became to a considerable extent detached from the fibre of the cloth after a short time, owing to its great tendency to crystalize. The presence, however, of even a small quantity of drying oil causes the paraffin to adhere much more firmly to the texture of the cloth, from the oil gradually becoming converted into a tenacious resin by absorption of oxygen.

In the application of paraffin for waterproofing purposes, it is first melted together with the requisite quantity of drying oil and cast into blocks. This composition can then be applied to fabrics by rubbing them over with a block of it, either cold or gently warmed, or the mixture may be melted and laid on with a brush, the complete impregnation being effected by subsequently passing it between hot rollers. When this paraffin mixture has been applied to cloth, such as that employed for blinds or tents, it renders it very repellent to water, although still pervious to air.

Cloth paraffined in this manner forms an excellent basis for such articles as capes, tarpaulins, &c., which require to be rendered quite impervious by subsequently coating them with drying oil, the paraffin in a great measure preventing the well known injurious influence of drying oil on the fibre of the cloth. The paraffin mixture can also be very advantageously applied to the various kinds of leather. One of the most convenient ways of effecting this is to coat the skins or manufactured articles, such as boots, shoes, harness, pump-buckets, &c., with the melted composition, and then to gently heat the articles until it is entirely absorbed. When leather is impregnated with the mixture, it is not only rendered perfectly waterproof, but also stronger and more durable. The beneficial effects of this process are peculiarly observable in the case of boots and shoes, which it renders very firm without destroying their elasticity. It therefore not only makes them exceedingly durable, but possesses an advantage over ordinary dubbing in not interfering with the polish of these articles, which, on the whole, it rather improves.

The superiority of paraffin over most other materials for some kinds of waterproofing consists in its comparative cheapness, in being easily applied, and in not materially altering the color of fabrics, which, in the case of light shades and white cloth, is of very considerable importance.

It will be evident from the statements which have just been made, that the employment of paraffin for waterproofing purposes is likely to become very extensive.