

ASSOCIATION MEDICAL JOURNAL.

EDITED BY JOHN ROSE CORMACK, M.D.

No. CXIII.

LONDON: FRIDAY EVENING, MARCH 2, 1855.

NEW SERIES.

TO CORRESPONDENTS.

BOOKS, LETTERS, AND COMMUNICATIONS FOR THE EDITOR AND GENERAL SECRETARY may be addressed, after 25th March, to 37, Russell Square, London.

ORIGINAL COMMUNICATIONS AND LETTERS. Many have been received which we have not yet been able to peruse. Their authors will be communicated with early next week.

Dr. MYER is to be at the head of the Smyrna Hospital. We have not been able to learn who he is, or to ascertain why he has been selected. Possibly, nevertheless, the choice is judicious.

THE PRACTICAL VALUE OF THEORETICAL SCIENCE: ALCOHOL FROM COAL-GAS.

WHEN MURDOCH, very little more than half a century ago, was wont to traverse the Cornish moors around Redruth, on some nightly errand of pleasure or business, bearing under his arm a bladder full of coal-gas, a jet from which served him for a lantern, and won for him from the miner whose path he might cross a respect more than ordinary, as it was not unmixed with a somewhat superstitious dread, little did he dream of the marvellous consequences hereafter to flow from his invention!

For many, many years, the gas was the sole, or almost the sole valuable product of the distillation of coal. With the exception of the tar and coke, the other products were not merely suffered to run to waste, but to get rid of them was a continuous trouble and expense to the manufacturer. All this is now changing—we had almost said changed—for now-a-days the secondary products of gas-making are almost equal to the gas itself in importance and value: nay, to such an extent is this the case, that manufactories already exist, not for distilling pit-coal for the procuring of gas, but for the special purpose of obtaining these several secondary products, the most important of which (under the name of *Paraffine oil*) is largely consumed, both as a lubricator and an illuminator. These secondary products, which may already be mentioned by dozens, are each of them of importance in agriculture, in the arts, or in the ordinary purposes of life. Many of them we owe to the chemist, working not for a practical end, but simply for the advancement of his science—seeking knowledge in full faith and assurance that the knowledge thus sought and gained will in good time bring forth results important in their economical relations to his fellow-men.

Such have been the minor triumphs of the chemist, when working on coal and its products; but to-day we have to announce a far greater triumph—one long looked for and foreseen—though it was not perceived from what quarter this grand confirmation and crowning proof of the truth of the general doctrines of organic chemistry was to spring.

True and rational theory has long shown us that radicals existed, formed of carbon and hydrogen, in definite series;

and analysis has succeeded very lately in isolating many of these radicals: but hitherto their sources have all been indirect, as from the distillation of wood, fermentation, etc.; and we have waited and hoped till the time should come when synthesis should build up and create what analysis had been only able to dissect, and to show must exist.

This great discovery of M. BERTHOLOT (which we find reported *in extenso* in the *Chemical Gazette* for Feb. 15th) forms an epoch in the progress of chemical science, whence we may date another start forwards. This is the conversion of bicarburetted hydrogen gas into alcohol; or, in other words, the forcing water to combine with coal-gas, to make spirit of wine. It appears that, when this bicarburetted hydrogen gas (conveniently known as *olefiant gas*, and to the presence of which in coal-gas its illuminating powers are chiefly due), is violently shaken with sulphuric acid and metallic mercury for a long time, the gas is absorbed; and, on adding a little water, and distilling the mixture, alcohol is obtained, which, on examination, proves to be true ethylic alcohol, or spirit of wine. The olefiant gas was prepared in various ways; but its source mattered not: whatever its origin, it produced alcohol, ether, and all the various salts of *ethyl*. For complete details of the discovery, we must refer to the memoir itself.

Vast as the practical results of this discovery may prove, its theoretical and moral value are to our minds immeasurably superior. It adds another leaf to the chaplet of inductive science. It is evidently from a thorough acquaintance with, and from pondering on the abstract laws of chemical science that M. Bertholot has arrived at this discovery. It bears its own internal evidence that it is no chance-medley invention, but that it is due immediately and directly to theoretical considerations alone; and we doubt not that in this discovery we shall find hereafter another instance of the truth of Playfair's maxim, that "It is abstract, and not practical science, that is the life and soul of industry."

OPERATIVE SURGERY AS IT IS TAUGHT, AND AS IT OUGHT TO BE TAUGHT.

NO. I.

IN any inquiry into the conduct of our army in the Crimea, not only ought the special cause of failure to be investigated, but a comparison should be instituted between our own system of management and that which obtains in the armies of the continent of Europe. With no other system can we so conveniently compare our own as with that of France; and on this occasion we desire especially to call attention to that department of medical education in France, which