

the practice of arts and manufactures; but the *science* of chemistry owes its origin and improvement to the industry of the Saracens. They," he adds, "first invented and named the alembic for the purposes of distillation, analyzed the substances of the three kingdoms of nature, tried the distinction and affinities of alkalies and acids, and converted the poisonous minerals into soft and salutary medicines." The formation and realization of the notions of *analysis* and of *affinity*, were important steps in chemical science, which, as I shall hereafter endeavor to show, it remained for the chemists of Europe to make at a much later period. If the Arabians had done this, they might with justice have been called the authors of the science of chemistry; but no doctrines can be adduced from their works which give them any title to this eminent distinction. Their claims are dissipated at once by the application of the maxim above stated. *What* analysis of theirs tended to establish any received principle of chemistry? *What* true doctrine concerning the differences and affinities of acids and alkalies did they teach? We need not wonder if Gibbon, whose views of the boundaries of scientific chemistry were probably very wide and indistinct, could include the arts of the Arabians within its domain; but they cannot pass the frontier of science if philosophically defined, and steadily guarded.

The judgment which we are thus led to form respecting the chemical knowledge of the middle ages, and of the Arabians in particular, may serve to measure the condition of science in other departments; for chemistry has justly been considered one of their strongest points. In botany, anatomy, zoology, optics, acoustics, we have still the same observations to make, that the steps in science which, in the order of progress, next followed what the Greeks had done, were left for the Europeans of the sixteenth and seventeenth centuries. The merits and advances of the Arabian philosophers in astronomy and pure mathematics, we have already described.

3. *Experimental Philosophy of the Arabians.*—The estimate to which we have thus been led, of the scientific merits of the learned men of the middle ages, is much less exalted than that which has been formed by many writers; and, among the rest, by some of our own time. But I am persuaded that any attempt to answer the questions just asked, will expose the untenable nature of the higher claims which have been advanced in favor of the Arabians. We can deliver no just decision, except we will consent to use the terms of science in a strict and precise sense: and if we do this, we shall find little, either in the particu-