

cence. For example, sometimes the lower portion alone will liquefy, sometimes the upper portion alone; sometimes the middle portion liquefies while the upper and lower portions remain unchanged; and again the central portion has been known to liquefy while the outer crust next the sides of the vial, still remain firm and hard. No more is it the result of heat, though this is the explanation most frequently advanced. Some boldly charge the officiating chaplain with secretly applying heat to the vials, while others, though acknowledging the disinterestedness of the clergy, yet maintain that the liquefaction is due to the action of the heat arising from the forest of lighted tapers upon the altar and from the presence of a vast crowd of people. This theory, however, is as untenable as the former, since the liquefaction has frequently been delayed for hours during the season of greatest heat and when the crowd filled the entire Cathedral, while it has been known to take place almost instantaneously in presence of but a few persons, at a time when the atmosphere was quite cold. Again, it has occurred in open air processions when the reliquary, raised upon a frame above the heads of the people, was borne through the streets in the months of December and January. Scientific examinations prove too that the change of volume is not governed by the laws of heat.

Other writers have attributed the liquefaction to trickery of some kind or other on the part of the officiating chaplains:—a mere matter of jugglery, nothing more. The priest adroitly removes one set of vials and replaces it by another. To the adherents of such an opinion, it may be pointed out that the reliquary, being, as it is, 12 inches in length, 5 inches in breadth, and  $2\frac{1}{2}$  inches in thickness, is rather large to admit of any slight-of-hand, performed hundreds of times before the eyes of an eagerly-watching multitude; that frequently the chaplains and canons in charge of the ceremonies, have been feeble, aged men, who could by no means be considered to possess the nimble dexterity of hands and fingers that forms the stock-in-trade of the successful juggler. Chemistry has also been called upon. The dark mass within the vial, it has been said, is but

a skilfully prepared compound, easily caused to liquefy at the proper moment. But at the very start, this theory has met with insurmountable obstacles in the significant phenomena of the changeability of volume of the liquid, and the entire independence of the liquefaction to the influence of heat. Moreover, if this be merely the work of chemical action, why can not modern chemists with all the boasted progress and perfection of the cherished science, with all the means at their command, reproduce the phenomena of the liquefaction of the blood of St. Januarius? Surely it were humiliating to confess—not to say contradictory to admit—that “those ignorant monks of the Dark Ages” possessed a knowledge of chemistry surpassing that of the great scientists of this much vaunted “era of light,” and yet the modern laboratory has signally failed to reproduce the *Miracle of Naples*. True, remarkable results have been obtained by chemists in their endeavors to produce the same phenomena as this miraculous liquefaction, the most astonishing and successful being that of a German chemist, Gaspar Neumann (1734). In imitation of the ceremonies of Naples, Neumann placed before a select party of friends, a human skull, then displayed three vials of crystal or very clear glass, in each of which was contained a matter in a very small bulk, dry, black, and so hard as to produce a noise on the sides of the vial when shaken. The first vial was placed near the skull, and almost immediately the dark mass liquefied, increased in volume, and filled the vial with a deep-red fluid. The second vial, being similarly placed near the skull, changed but slightly, while the third remained entirely unchanged. These astonishing results were obtained by means of a compound of ether and suet, or fatty matter of some kind, the compound being so prepared as to be solid at ordinary temperatures, but could be liquefied by the mere natural heat of the hand. Of course the composition was first colored dark-red, and according to the results desired, a greater or less quantity of ether was employed, thus insuring at will, an entire, or partial liquefaction. Neumann’s experiment has proved to be the most successful attempt to demonstrate that the chemist can produce, at will, “the pre-