when we consider the great geographical area over which hot springs are scattered, the singularity of their association with cold and mineral waters, which is often noticed, the variety of their contents, and the geological circumstances which accompany their efflux.

It is unnecessary to dwell at any length on the question, how far any peculiar chemical quality is characteristic of hot waters, so as to offer a satisfactory explanation of their warmth from chemical action. There is no such peculiarity. Thermal waters are found to be, on the average, neither more nor less pure than springs of common temperature; they exhibit, in fact, the same scale and variations of chemical constitution as common waters. The *chemical quality* of hot waters, offers no *explanation* of their heat, though, combined with other considerations, it may help to guide to a right view of the manner in which that heat has been acquired.

There is no one product of thermal springs, constantly found in them, which never occurs in cold waters; but it appears from Dr. Daubeny's important researches, that nitrogen gas is very common in hot springs, and perhaps very rare in cold waters. This circumstance appears to him of great importance in the argument whereby he connects the origin of hot springs with volcanic action. In Dr. Daubeny's admirable Essay on Mineral and Thermal Waters*, the catalogue of thermal waters exhibits the prevalence of nitrogen, among the gases evolved, in a striking degree; carbonic acid is also plentiful, and, in particular districts (Nassau), predominant. As examples, we may select the notices of the warm springs of the British islands, and of those which adjoin the Ardennes and Nassau mountains, — in both instances only obscurely dependent on volcanic formations; the Pyrenean and other springs may also be noticed.

* Reports of British Association, 1836.