

then, too, the joint processes are wanting, &c. On the other hand, *Geotriton* is distinguished in the most peculiar way, by one organ, from all other Amphibia, viz., by the tongue. This is a pedicelled disc, like a mushroom, on the bottom of the mouth cavity, where it is connected with the tongue-bone apparatus; the latter, however, does not merely consist of the same parts as in other Amphibia, but at its two hinder ends there is attached on either side a long thin cartilage, which reaches, free between the neck muscles and the skin, as

far as the back, and is enclosed in an envelope of special muscles, which are only attached at its hinder end and in front to the rest of the tongue-bone. If, now, this muscle be contracted, it thrusts out the cartilage rod, and with it the tongue, in a way similar to that observed in Chameleons, Woodpeckers, and Ant-eaters. Compare the annexed drawing. Thus Nature connects in the most remarkable manner a complicated organ of the higher Vertebrates with the organisation of amphibians that evidently stand very low.

EVIDENCES OF ANCIENT GLACIERS IN CENTRAL FRANCE

WHEN visiting the Mont Dore district, in Central France, with Prof. Huxley in the summer of 1873, my attention was accidentally directed to some magnificent transported boulders occupying the floor of an ele-

vated valley due south of the highest ridge of the Pic de Sancy.

These, though gigantic, and occupying a very conspicuous position, in every respect similar to positions occupied by deposits from ancient glaciers in Switzerland and in all other Alpine regions, are not alluded to in Le Coq's exhaustive work on Central France, or his geolo-

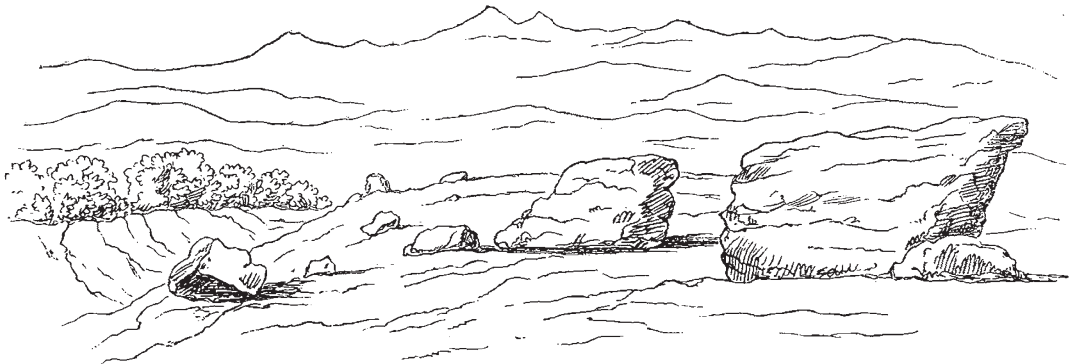


FIG. 1.—Transported blocks in the Tranteine Valley, Mont Dore. Mountains of Cantal in the distance.

gical map appended thereto; nor are they in either of Mr. Scrope's works on the Volcanoes of Central France; nor can I obtain any information regarding them from those of my geological friends who are most versed in glacial phenomena.

Under these circumstances, though still of opinion that

they cannot have escaped the notice of French observers, if not writers, on the geology of France, I may assume that they are of sufficient novelty and interest to render the accompanying notes and sketches acceptable to the readers of NATURE.

The well-known lofty range of Mont Dore is described



FIG. 2.—Transported block in the Tranteine Valley, Mont Dore (estimated length 36 feet). Pic de Sancy (N.) in the distance.

by Scrope ("Volcanoes," ed. ii, p. 362) as a mountain mass rising in its highest peaks more than 6,200 feet above the sea-level, composed of beds of trachytic and basaltic lavas, alternating with their respective conglomerates. And again, in his "Volcanoes of Central

France" (ed. ii, p. 124), the same author says of the figure of the mass, that it is best understood by supposing seven or eight rocky summits grouped together within a circuit of about a mile in diameter, from which, as from the apex of a flattened and somewhat irregular cone, all

the sides slope more or less rapidly, the mass being deeply and widely eaten into on opposite sides by two principal valleys, those of the Dordogne and the Chambon.

It is with the southern valley, or that of the source of the Dordogne river, that we are concerned, the head of which occupies a noble amphitheatre facing the south, immediately under the highest summit of Mont Dore. My companion and myself were on our way to the summit of the Pic de Sancy, from the village of Latour about seven miles to the westward; we were skirting the rocky and very steep sides of the amphitheatre at an elevation of some 5,000 feet, and were enjoying the view of the snow-streaked mountains of the Cantal which bounded the horizon to the southwards at nearly forty miles' distance, when my attention was arrested by some large objects on the broad and level (as seen from a height) floor of the valley at our feet. They were presumably huts, haystacks, or glacially transported blocks, and their position in reference to the head of the valley and amphitheatre

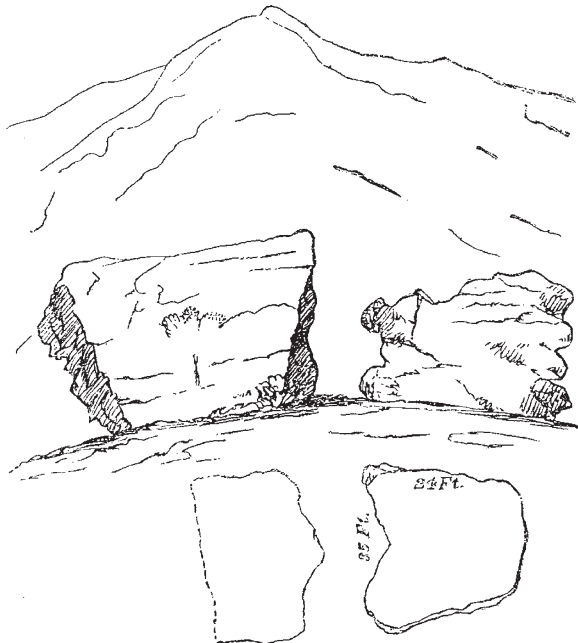


FIG. 3.—Transported block split into two pieces in the Tranteine Valley, Mont Dore.

theatre so strongly inclined me to the latter view, that I determined on visiting them before leaving the neighbourhood. Accordingly, on the following day, I took the high road to Latour, south-eastward to the village of Chastail. Then leaving the road, I descended and crossed a small stream to the eastward. The ascent of its steep opposite bank led through beechwoods to a broad flat ridge with some cheese-makers' huts upon it, from which, still proceeding eastward, I descended by a gentle slope immediately upon the floor of the valley, and found myself amongst a group of magnificent boulders that had evidently been deposited by an ancient glacier which had flowed from the rocky amphitheatre at the head of the valley.

The blocks were of trachyte, and what I took to be domite, of the same nature as the rocks towards the top of the pic; they were scattered over an undulating surface, which I guessed to be about half a mile long by a quarter of a mile broad, and occupied both the floor and the very gentle slopes of this part of the valley, up to perhaps 200 feet above the stream. Others were seen further down the valley, which however soon contracted; its

stream, which meandered in the position of the greatest number of blocks, becoming, beyond it, a torrent. For about a mile above this there were no blocks; that is, between my position and the base of the steep cliffs forming the amphitheatre where the glaciers had descended. The largest blocks were those furthest down the valley; at least twenty of them appeared to me to be upwards of as many feet in length, and one of greater length was also of greater height. Several were split in two, like blocks that had been fractured by falling through the crevasse of a glacier. All were weather-worn and covered with lichens, ling, and grass.

Returning I took a north-westerly direction, ascending the spur I had crossed in coming, passing close under a magnificently mountainous mass of basalt to the east of the Puy de Pougé. Still further eastward and south of this Puy are meadows where brood mares and foals are grazed, upon which were a few large blocks of trachyte or basalt artificially shaped into very odd forms, some like skittles, others like a truncated cone with the earth heaped up round its base; they may be worthy of further investigation, but I had no time to examine them and no opportunity of making inquiry. Thence my direction lay under the Puy de Compaine, and so by a steep descent to the Ruisseau de la Chambasse, which I followed to the village of Sarsenae, and thence ascended to Latour.

J. D. HOOKER

ASSOCIATION OF GERMAN NATURAL PHILOSOPHERS AND PHYSICIANS

THE forty-eighth meeting of this Association was held from the 18th to the 25th of September at Gratz, the chief town of Styria, in one of the most beautiful valleys of the Austrian Alps.

The Association is the oldest of its kind; founded in 1822, and preceding, therefore, by several years, the birth of its British sister. In times of political disturbances and wars, such as the years 1848, 1866, and 1870, it held no meetings; in several previous years the German Governments, who in days gone by regarded every public meeting with suspicious eyes, prohibited them, and thus forty-eight meetings only were held during the fifty-four years of its existence. The German "Naturforscher-Versammlung" owes its formation to one of the founders of comparative anatomy, the celebrated Oken, late Professor of Zoology at Jena, and it cannot be denied that politics entered into the intentions of its founder as well as of many of its original members. When German unity was nothing but a treasonable aim of persecuted patriots, every meeting of Germans from different States served to spread and to give fresh vigour to this aim, and was in itself a protest against the division into small States of the common country, and against persecutions such as Oken himself has had to suffer. Aye, even now, when the old wishes have been fulfilled and no division separates Government and nation, remains of the old political undercurrent can still be traced in some of these meetings.

Gratz has an entirely German population, whose sympathies with the new German realm are increased by their proximity to Slavian provinces. It has taken a prominent part in the Reformation, and although brought back to the old religion by threats of fire and sword, by the establishment of Jesuit colleges and the suppression of the Protestant University once graced by Kepler, it still glories in its old recollections and carries high the banners of freedom and of its German nationality. In 1842, the "Naturforscher-Versammlung" was invited to Gratz and gave to that town a foretaste of the right of association then proscribed in Austria, and in 1875 the town opened her gates once more to her non-Austrian brethren, principally to assert her intellectual unity with Germany. This idea, and their enthusiasm for the freedom of thought, formed the