

ramparts in front of them. Directing our attention only to the area of the earth's crust which is occupied by the Central Transhimalaya, we find that the crust-wrinkles or folds which are the result of the tangential or lateral stresses from the north and the resistance of the regions south of it, have not arranged themselves in the same regular order as, for instance, the Great Himalaya, the Zaskar, Ladak, and Kailas Ranges farther W. N. W., but are bent, turned and pressed together as if they, in some places at least, had been exposed to a torsion resulting from lateral stresses from the west and east as well as from the north. Regarding attentively the map of the area in question (sheet XIV of the map in 1:1,000,000), we easily see that this area is too small for a regular, normal and undisturbed development of crustal folds. If that had been the case we would have found ranges parallel with the main axis of the Himalaya and with the same radius as it.

But instead of this we find in the westernmost portion of the area between the first and second lines a system of at least nine, probably more, smaller ranges overlapping one another, chiefly running from N. W. to S. E. — whilst the Tsangpo valley runs W. N. W. — E. S. E. — but also possessing ranges running meridionally or even, as the northern portions of the Surla and Pedang Ranges, N. N. E. — S. S. W.

The greatest divergence from a normal and regular development of the folds is, however, met with in the central part of Central Transhimalaya, *viz.*, between our second and third lines. From its northern end at the right side of Buptsang-tsangpo in the district of Bongba-Kebyang, the Kanchung-gangri with its continuation, the Gangri-do and Targo-gangri, forms a nearly regular semicircle 320 km. in length. But the distance between the northern endpoints of this semicircle is only 180 km. North of this fold we have the Lapchung Range with its continuation the Shuru Range.¹ It is nearly parallel to the Kanchung-gangri fold, both turning their convexities to the south. Its length is 240 km., and the distance between its northern endpoints only 170 km. It is therefore less sharply curved than the Kanchung-gangri. North of the Lapchung Range I was unable to discern any prevailing directions of the ranges as far as I could see the country.

But north of the Soma-tsangpo there is the Teri-nam Range, about 100 km. in length and with a distance of 92 km. in a straight line between its ends. The bending of the three folds has therefore increased from north to south at the rate of 1,111, 1,412 and 1,777. The Kanchung-gangri curve would have needed more than one and a half times as much space as it has for being folded in a normal way under the influence of the tangential stresses from the north. But the compression from east and west has been so violent that the folds have been distorted

¹ The relations between the Shuru and Gangri-do Ranges are uncertain. It is possible that they are one and the same range, which, however, only in a small degree would interfere with the above calculation.