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From residence: 41 Emerson Ave.,
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Dr. H.B. Stenzel,
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Dear Dr. Stenzel:

I wish to thank you for the separate of your paper on the Lausitz massive.

Many points in it are of much interest to me, but I will mention only one or two. The most troublesome one is the difficulty of explaining the 90° swing in Ausweichslinien on Pl. XXX with a corresponding swing in dikes ~~at~~ at right angles to the former^e. It is very hard to picture a line of main pressure acting NE-SW across the eastern part of the massive and another line acting NW-SE across its western part, especially since these trends must have persisted during both the time of formation of the Parallelgefüge and the much later time of intrusion of dikes. It seems to me, ^{difficult} ~~almost impossible~~ for the two structural trends to have existed at the same time within the same massive, and I wonder, for this reason, if it is not possible that the mass consists of two intrusions, the granite of one half being younger even than the dikes of the other half? However, I note that some members of the NE-trending set of dikes extend beyond members of the NW-trending set in the southern part of the exposures. On the other hand, such a complicated ~~set~~ lot of shifts in direction of pressure would be required to produce first NE-Ausweichen, second NW-Ausweichen, third NW-dikes fourth NE-dikes, that few would care to consider it. However I wish I could visit the southern part of the massive, where the dikes of NE-trend ^{NE-} overlap those of NW-trend, to seek an intersection of a/dike with a NW-dike, to discover which is the older. Have you found any intersections

over

of that kind? ~~It~~ Doubtless we will have to accept your conclusion on p. 494 that the massive is single and the ~~two~~ two directions of ~~pressure~~ pressure were active at the same time. My trouble is in seeing how a NE-^{almost} pressure could continue so long/alongside a NW-pressure, during the solid as well as part of the liquid phase of the granite. I would expect solidification to alter the direction of pressures about a bend.

Did you see the abstracts for the Cambridge meeting of the G.S.A.? In them is an abstract of mine entitled "Shear-control of dikes and sills near Eugene, Oregon." Like the ^{common} ~~vertical~~ dikes of the Hercynian chains of Germany, these trend normal to the Coast Range of Oregon. I maintain that they were formed under tectonic pressure, which was greatest along their walls, preventing the opening of side-crevices and holding the magma within its own crevice; and that the pressure prevented the opening of crevices in other directions. The Q-joints and dikes of Cloos, cutting plutons etc. are of the same nature, but I think that the crevices begin to open because ^{locally unequal} the pressure along their walls warps the walls independently of each other enough to open cracks that liquid can enter. The pressure of the liquid is adequate to widen the dikes, but not to open crevices in other directions. I deny the possibility of tension at right angles to a direction of ^{compression} tension, even in elastic media, and certainly ^{such tension is impossible} in the plastic region from which dikes must ascend. A bit of such shear-control appears in places along the sides of plutons that are parallel to their internal dikes, as I infer from your description (top of p,484) of the NE side of the Meissener massive, where you say that not a single apophysis occurs. The NW ~~pressure~~ pressure may have prevented the opening of crevices across that contact, may have caused horizontal slip on the fault parallel to it (West Sudetic fault), and may have opened the original crevice and otherwise aided the formation of the NW-apophysis of the massive that shows on Pl. XXI. This is about as much indication of shear-control of large intrusions as I have seen ^(in most of them it was unimportant) anyplace, and I am glad to have it. My paper will not appear for several months.

Cordell Green
Walter H. Barber