ON THE CAPILLARITY THEORY OF CRYSTALLINE FORM

BY

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In a communication on the capillarity theory of crystalline form [1]
I have cited, among others, the interesting essay by Professor M. Brillouin,
"Tensions superficielles et formes cristallines. Domaine d'action molé-
culaire". [2]

M. Brillouin in a letter has now justifiably drawn my attention to the
fact that my citations will give rise to a wrong idea of the purport and the
results of his investigation.

It may appear, namely, as if M. Brillouin accepts as correct the expla-
nation of crystalline form according to the theory of Curie (from the
principle of minimum total surface energy). I hasten to make it clear that
this is not the case. On the contrary: M. Brillouin sets forth and argues in
detail, on the occasion of the investigation referred to above, the assertion
that *the solid body in its undeformed state has zero surface tension and that
its surface tension first appears as a consequence of deformations.* (See
particularly the end of § 10.) That his view is essentially in conflict with
that of Curie and therefore also with the fundamental ideas of my com-
munication was not so clear to me at the time of publication of my com-
munication as it is now, thanks to M. Brillouin's letter.

For the further orientation of the reader who is interested in this matter,
I want to add the following remarks.

1. M. Brillouin was, so far as I know, the first to discuss the possible
influence of edge and corner energies on the behavior of solid bodies (see
§ 11 to 19 of his article, especially too the promising discussion of the forms
of diamond scratches on glass and of the instability of sharp glass edges),
and it is principally for that reason that I referred to this investigation.

2. M. Brillouin's arguments against surface tension in the absence of
deformations (see § 10 of his article) are, fortunately, not applicable to my
model because the latter is absolutely hard and can therefore remain un-
deformed and can have straight edges in spite of the presence of surface
tension.

[1] Akad. v. Wetensch. Versl. 29 May 1915 (24, p. 158).

[2] Ann. de Chimie et de Physique VI (1895), p. 540.