van den Dungen's method must depend on the small difference between two large and somewhat uncertain terms, whereas in our case the difference is of the same magnitude as the terms from which it is formed.

2. The pressure data in Table 2 go back largely to Napier Shaw, the source used also by van den Dungen in his computations. The fact that the pressure changes do not integrate to zero over the whole globe can be ascribed to uncertainties in these observations, and in the conversion of sea level pressure to local pressure. We have accordingly stated that "it would be desirable to recompute Table 2 using the original data for the uncorrected local pressure". In any event it can be shown that our estimate for the magnitude of the inertia term (which is small compared to the wind term) will hardly be effected by allowing for this discrepancy.

3. We regret to have given the impression that van den Dungen et al were unaware of the importance of reverting the sea level pressures to local pressures. The complete corrections involve the *elevation* and the *temperature* of the weather stations. The corrections, as entered in Table 1 of van den Dungen's paper, take into account only the elevations. This part of the correction, which is of course the same throughout the year, will drop out from computations of the seasonal *differences* with which our problem is concerned. This explains why van den Dungen's February minus August values (their Table 4) are nearly the same as our *uncorrected* January minus July values (our Table 2, column 2).

The complete corrections depend partly on *temperature*, and these corrections do not drop out when differences between seasons are computed. The corrections are remarkably large. North of 30° N latitude the average local pressure variation between January and July is about *minus* 1.5 mb, whereas van den Dungen et al. obtained roughly *plus* 4 mb.

Comments on the Behavior of Jet Streams over Eastern North America

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October 11th, 1950

Mr Phillips' article in the May 1950 issue of TELLUS (Vol. 2, No. 2) touches on an interesting point regarding confluence. It is quite true that the mere confluence of streamlines on upper level charts does not necessarily lead to increased thermal gradients and consequent increases in high level wind speeds. Confluence of the streamflow must be accompanied by differential temperature advection at most levels of the troposphere before it can result in accelerating wind speeds in the upper troposphere. However, Mr Phillips fails to consider that lack of strong advection at 300 mb may not represent conditions at all levels. It is very likely that there is cold air advection in the northwesterly flow and warm air advection in the southwesterly flow at middle and lower levels of the troposphere (i.e. up to about 400 mb). Hydrostatically, the mean temperature field of the layer below 300 mb must be similar in appearance to the 300 mb height field, but it is well-known that the flow at lower levels in middle latitudes is generally less zonal and more meridional than at 300 mb. Thus, even in the case Mr Phillips presents the streamline-isotherm relationship prescribed by the confluence theory of NAMIAS and CLAPP (J. Meteor., 1949, Vol. 6, pp. 330—336) probably does exist at most levels of the troposphere. In fact examination of the pertinent sea level and 700 mb charts indicates that this is so in the layer from sea level to 10,000 feet. Our opinion, contrary to Mr Phillips' implication, is that the situation described by Namias and Clapp is the frequent rather than the rare occurrence in cases of confluence.

Note on recent study of stability by R. Fjørtoft

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The purpose of this note is to call attention to a method for investigating the dynamic stability of certain flowsystems recently presented by R. FJØRTOFT (1950), and to show that his results may be expressed in a clear and concise form through the use of the quasi-Lagrangian system of hydrodynamical equations discussed by the writer (STARR 1945) on a previous occasion. In order to achieve clarity, the line of reasoning employed by Fjørtoft is here repeated in revised form.

Let us consider the two-dimensional horizontal motion of an inviscid incompressible fluid of uniform density on the surface of a sphere of radius r, in the region between two fixed latitudes Φ_1, and Φ_2 at which walls are assumed to be present so that a complete zonal belt extending through all longitudes λ is formed. Following Fjørtoft we examine