should be addressed Observatory of Año Nuevo, Ministry of the Marine, Buenos Ayres.

The observatory of the island of Año Nuevo, as well as the one soon to be established at Bahia Blanca, will form a part of the proposed network of observatories on the Atlantic coast of the Argentine Republic, under the direction of the Ministry of the Marine.

A NEW SUGGESTION FOR THERMOMETERS.

Mr. Charles F. Talman, United States Weather Bureau, contributes the following extracts from two papers recently published in the Atti della Reale Accademia dei Lincei,[1] by Prof. G. Guglielmo, of the University of Cagliari, describing a new method of mixing liquids contained in closed receptacles.

In the study of thermic phenomena it is often desired to render uniform the temperature of a liquid by mixing. It often happens, however, that the liquid is inclosed in a receptacle, and the usual methods of agitating liquids are not applicable. In this case the most obvious expedient is to inclose in the receptacle, with the liquid, a mill or movable system containing iron or small magnets, and to cause the mill to rotate or the movable system to oscillate by means of magnetic or electromagnetic action. * * *

The use of the preceding method requires a construction and a preparation more or less complex; nor is there excluded the possibility of an injury which would render the mechanism inactive, without this fact appearing externally, and, lastly, it is hardly applicable if the dimensions of the receptacle containing the liquid are small.

An active agitation can be produced in all cases with perfect certainty, if, before closing the receptacle, there be fixed on its inner walls laminæ (palette) of convenient number, position, and inclination, and if the receptacle, after being closed, is given a movement of rotation in opposite directions alternately on any axis.

If the receptacle, being, for example, cylindrical, had a smooth wall and were made to rotate about its axis, the liquid would at first remain almost completely motionless, and later, as a result of internal friction, the rotary motion would be communicated from the wall toward the axis; this movement of the liquid would, however, be regular and would not produce any mixing of the various parts.

If on the other hand, the inner wall of the receptacle is provided with laminæ, these, at the beginning of the rotation, impinge upon the motionless liquid, and communicate to certain parts of it various velocities and pressures in various directions, as a result of which, as well as of centrifugal force, there is produced a mixture with those portions which are still motionless, or whose motion is not identical. The effect is almost the same as if the laminæ were in a motionless receptacle and were fixed to an axis issuing externally.

If the rotation continued indefinitely, all parts of the liquid would finally acquire the same angular velocity, viz, that of the receptacle, and would move as a solid without appreciable mixing of the parts: if, however, we stop the rotation of the receptacle abruptly the liquid continues to rotate, certain parts of it pass without hinderance between the laminæ, others, striking the laminæ, change direction, and the desired mixing is thus produced. Then, by producing a rotation in the opposite direction, the phenomena, already described, are reproduced, etc.

As to the form, number, position, and inclination of the laminæ, it seems to me useful that they should be small and numerous, that they should extend or be placed near the axis of rotation, and, perhaps, also that they should be perforated. It seems advisable, also, that they should be inclined at an angle of, say, 45° to the axis and to the direction of motion in order to give to the liquid a movement parallel to the axis as well as a movement of rotation.

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The above arrangement for agitating a liquid * * * certainly appears useful for thermometers, especially if they have large bulbs and are very sensitive, and particularly if the internal liquid is other than mercury, and hence a poor conductor of heat.

CORRIGENDA.

In MONTHLY WEATHER REVIEW for October, 1903, p. 478, first column, twelfth line, for 12° 35′ read 120° 35′.

THE WEATHER OF THE MONTH.

By Mr. W. B. STOCKMAN, District Forecaster, in charge of Division of Meteorological Records.

PRESSURE.

The distribution of mean atmospheric pressure is graphically shown on Chart IV and the average values and departures from normal are shown in Tables I and VI.

An area of high mean monthly barometric pressure overlay the country from the middle and northern Plateau regions southeastward to the Gulf of Mexico and the south Atlantic coast, with several crests, the principal one overlying the Ohio Valley and Tennessee, extreme northern Louisiana, and eastern and southwestern Arkansas, with mean values ranging from 30.15 to 30.18 inches.

Two areas of low mean pressure obtained, one over southeastern California and southwestern Arizona, the other and principal one, both with regard to area embraced and lowness of readings, over the north Pacific coast district, where a minimum mean of 29.85 inches was reported.

The mean pressure was below the normal in New England, eastern part of the Middle Atlantic States, along the coast of the South Atlantic States, and over Florida; also in southwestern Arizona, eastern California, and the middle and northern Pacific districts; elsewhere it was above the normal.

Over western Tennessee, the Ohio Valley, New Mexico, Colorado, Kansas, northern Missouri, the upper Mississippi and Missouri valleys, eastern and central Montana, and central Wyoming the departures ranged from +0.05 to +0.08 inch. Over the middle and north Pacific coast districts the departures ranged from —0.05 to —0.13 inch, the greatest departures being reported from the coasts of Washington and northwestern Oregon.

The mean pressure decreased from that of October in northern and eastern New England, and in the north and middle Pacific districts, and in portions of the middle and northern Plateau regions; elsewhere the pressure increased over that of the preceding month, the greatest changes, +0.10 to +0.12 inch, being reported from northwestern Minnesota, northern South Dakota, North Dakota, and northeastern Montana. Over Oregon and Washington, increasing from east to west, the decreases ranged from —0.05 to —0.18 inch, the greatest change being reported from Tatoosh Island.

TEMPERATURE OF THE AIR.

The distribution of maximum, minimum, and average surface temperatures is graphically shown by the lines on Chart VI.

Eastward of a line drawn from eastern Minnesota to eastern Texas, and also in the western portions of the Dakotas, Montana, eastern and extreme western Washington, and north-

[1] Vol. XI, Fas. 11, and Vol. XII, Fas. 6, dated, respectively, December 7, 1902, and March 15, 1903.