but no motion of the camera seems likely to explain the many
details in these ribbon photographs of natural lightning. On
the contrary, there is one flash on Mr. Stewart-Smith’s plate
that has every indication of being certainly an oscillatory
discharge, showing lines of flow identical with those photo-
graphed by Professor Trowbridge at Cambridge, and fully
maintaining his conclusion, which was also that of Prof.
Joseph Henry and J. Ogden Rood, that the lightning flash is
an oscillatory discharge, and large, rotating frequently to and fro within
the crack in the air that is opened up by the first discharge.
The whole process requires but a few millions of a second,
and the motion of the camera within that short time is
insignificant.

THE KITE AND TELEPHONE.

On page 257 of the *Monthly Weather Review* for June,
1898, we have referred to some interesting experiments on
H. M. S. *Dauntless*, concerning which the Aeronautical Jour-
nal states that there is no such ship, that no such experi-
ments were made in the navy, and that in recent kite experi-
ments made on the torpedo boat destroyer *During* the kites
were of the Baden-Powell pattern.

In a letter on this subject from Mr. S. P. Ferguson, of Blue
Hill, he says:

The only experiments with kite telephones or telephone kites that I
know of have been made in this country by Mr. William A. Eddy, of
New York, who nearly two years ago succeeded in telephoning and
telegraphing over a line held by kites. See Boston Herald, December
7, 1896 (or perhaps New York Herald of same date). It seems that the
wire was carried over trees, several roadways or streets, etc., and lower-
ed so that connections were readily made and messages sent. After
all, the Americans are still ahead in the matter of kites for scientific
purposes.

A MEMORIAL TO VOLTA.

The study of electricity begins with the discoveries of Gal-
vani and Volta, especially the invention of the dry pile by
the latter. The electricians of Italy announce that they have
organized a committee, with a central office in Milan, to or-
ganize an international electrical exposition, to be held at
Como, on Lake Como, in May, 1899, to which they invite the
colaboration of telegraphers and electricians throughout the
world. It is proposed to deposit a bronze crown at the foot
of the statue of Volta that his native town long since erected
to the celebrated electrician. A more delicate tribute could
scarcely be imagined, and the Americans who may be able to
be present at the ceremony will undoubtedly witness one of
the most beautiful scenes of this century of centennials.

STUDIES OF THE JAPAN CURRENT.

We notice in several California papers earnest articles ad-
vocating the study of the Japan current and its relation to
the weather of the Pacific coast. Especially does Mr. W. S.
Prosser, of Auburn, Cal., state that in 1875 or 1879 he sug-
gested this very thing and urged favorable action on the
authorities at Washington.

It ought hardly to be necessary to assure the citizens of the
Pacific coast that the Japan Current, like the Gulf Stream,
has been studied with much care by the navigators of all
nations, and charts have been published showing the tempera-
ture and the movement of the surface water, not only for
these special currents, but for the whole of the surrounding
ocean for each month in the year. These charts show that
without any doubt whatever the currents are such soon dwindle
away, and all that is left is a very slow movement of the
water too and fro with the wind. It is the west wind that
strikes our Pacific coast, and not the Japan Current. This
wind brings moisture from the Pacific Ocean, and not from
the neighborhood of Japan. It is these moist winds, and not
the ocean currents that control the climate of California.

The hydrographic offices of all nations are engaged in the
study of ocean currents and surface drifts as such, including
their dependence upon the winds. The meteorologist studies
the winds as affected by the surfaces of the land and ocean,
but he finds the atmosphere moving so rapidly and its various
portions so easily intermixed with each other that it is at
present impossible to tell whether the moisture brought by
the wind to California comes from the Pacific Ocean in gen-
eral, or from the Japan Current especially. In fact, it mat-
ters little to him where it comes from. He has to take it as
he finds it over California, and then decide whether it is ris-
ding and cooling to form cloud and rain, or whether it is de-
sending and likely to stay unprecipitated. The important
features of the weather of California depend principally upon
whether its winds are descending and being pushed outward
from a high and dry area to the northeastward, or whether
they are ascending and coming from moister air to the north-
westward. It is the air supplied from the high pressure area
on the southwest between California and Hawaii that gives
the former her long continued spells of dry, clear weather.
The length of these spells may depend, in a general way,
upon atmospheric conditions; not on the condition of the
ocean.

METEOROLOGICAL TABLES AND CHARTS.

By A. J. Hern, Chief of Division of Records and Meteorological Data.

Table I gives, for about 130 Weather Bureau stations
making two observations daily and for about 20 others
making only one observation, the data ordinarily needed for
climatological studies, viz., the monthly mean pressure, the
monthly means and extremes of temperature, the average con-
ditions as to moisture, cloudiness, movement of the wind, and
the departures from normals in the case of pressure, tempera-
ture, and precipitation, the total depth of snowfall, and the
mean wet-bulb temperatures. The altitudes of the instru-
mments above ground are also given.

Table II gives, for about 2,700 stations occupied by volun-
tary observers, the highest maximum and the lowest minimum
temperatures, the mean temperature deduced from the average
of all the daily maxima and minima, or other readings, as in-
dicated by the numeral following the name of the station; the
total monthly precipitation, and the total depth in inches of
any snow that may have fallen. When the spaces in
the snow column are left blank it indicates that no snow has
fallen, but when it is possible that there may have been
snow of which no record has been made, that fact is indi-
cated by leaders, thus ( . . . ).

Table III gives, for about 80 stations furnished by the
Canadian Meteorological Service, Prof. R. F. Stupart, director,
the means of pressure and temperature, total precipitation and
depth of snowfall, and the respective departures from
normal values, except in the case of snowfall.

Table IV gives, for 26 stations selected out of 113 that main-
tain continuous records, the mean hourly temperatures de-