

HUMIDITY.

Humidity is one of the main climatic factors, which is closely correlated with temperature and rainfall, also with the proximity to the Equator or the Poles, altitude, prevailing winds, &c. When the absolute humidity of the atmosphere reaches a certain percentage at a particular temperature, precipitation occurs and rainfall results.

The atmosphere might not be saturated at a particular temperature but a decided drop in temperature such as happens, when moisture laden winds encounter high mountains and come in contact with the cold air surrounding these mountains, will lead to saturation at a lower temperature and thus precipitation occurs.

The distribution of the rainfall in particular areas of New Guinea may mainly be attributed to this fact, e.g., during the north-west season the north-west portion of the island of New Britain receives much more rain than the south-east portion. Conversely when the south-east winds prevail the south-east portion of the island receives most of the rain.

As compared with Australian weather records the humidity of New Guinea is considerably higher and more constant, also the temperature and rainfall. New Guinea does not experience that "rest period" that winter gives in Australia which is so essential to most fruit trees. This amplifies how important a control the weather conditions have on the agricultural possibilities of a country.

The continual humidity in New Guinea leads to development of rain forest growth. The plants comprising the flora have particular adaptation for transpiration of moisture, and further their flowers are often concealed and protected from the effects of excessive moisture on the pollination.

Meteorologists put forward the theory that rain forests increase the rainfall. When rain falls on a forest, a percentage of it is detained by the crown and trunks of the trees and re-evaporated into the air, thus further increasing the latter's store of moisture. If, then, a moist current strikes this cooler column, it is condensed and rain occurs. Unfortunately in the tropics we have no reliable data to prove this.

Differences in atmospheric humidity are closely associated with occurrences of lightning, especially near high mountains. In this case increase in electrical potential is recorded where the warm air from the sea coast, and plantations situated there, carrying dense masses of water vapour from the sea is forced up the high mountain slopes and the electrical charge increases with condensation. It is easily seen why some areas, close to high mountains and near the sea, are more liable to lightning storms than others.

METEOROLOGY.

AVERAGE MEAN RELATIVE HUMIDITY.—ALL COASTAL STATIONS (31.12.30).

Readings at	No. of Years.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.

RAEUL (CAPITAL—T.N.G.).

4° 12'S., 152° 11'E., Ozello Peninsula.

9 a.m.	..	49	70	70	78	79	78	77	77	74	71	69	72	76	76
3 p.m.	..	..	74	73	73	75	73	71	71	69	68	68	71	73	71
9 p.m.	..	..	93	93	94	94	93	91	90	88	87	89	92	94	92

KAVIRU (NEW IRELAND).

2° 34'S., 150° 40'E., N.W. Coast of New Ireland.

9 a.m.	..	18	81	81	81	82	81	80	80	80	78	78	79	80	80
Saturation.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3 p.m.—100	..	..	77	75	75	78	77	77	75	74	74	74	75	77	76
9 p.m.	..	..	80	80	88	80	80	80	80	88	86	86	87	86	88

KIFTA (BOUGAINVILLE).

6° 13'S., 155° 39'E., E. Coast of Bougainville.

9 a.m.	..	10	79	80	80	81	81	82	81	80	79	77	76	76	79
3 p.m.	..	..	79	78	78	79	79	79	79	78	77	76	77	77	78
9 p.m.	..	..	84	84	84	85	86	85	85	84	84	84	83	81	84

MADANG (MAINLAND) MADANG DISTRICT.

5° 11'S., 145° 48'E.

9 a.m.	..	18	84	84	83	86	84	84	84	82	82	82	82	83	83
3 p.m.	..	..	77	77	77	75	75	75	75	75	75	75	76	77	76
9 p.m.	..	..	89	88	87	89	88	87	86	85	85	85	87	88	87

MANUS (LORENIAU).

2° 2'S., 147° 10'E., N. Coast Manus.

9 a.m.	..	12	87	87	84	83	87	83	80	88	86	85	85	86	87
3 p.m.	..	..	76	73	71	75	74	75	74	72	74	71	72	75	73
9 p.m.	..	..	91	90	89	92	92	91	93	91	91	92	94	93	91