Letter to the Editor

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INCIDENCE OF FOG OVER THE BRAHMAPUTRA VALLEY IN ASSAM

During the cold season, particularly during the months November to January, the chief aviation hazard over the Brahmaputra valley in Assam is the incidence of fog or mist. The valley is oriented east to west.

It is generally observed that the number of occasions of incidence of fog is greater over the south bank of the Brahmaputra than over the north bank. Pilots report that they see vast patches of fog in the cold season over the south bank of the Brahmaputra while the north bank is practically clear but never the other way round.

Table 1 gives the mean number of days with fog at some of the observatories situated on either side of the Brahmaputra. The stations in Group A are situated to the north of the Brahmaputra and those in Group B are situated to its south. It is seen from the data that the incidence of fog is more frequent over the south bank than over the north bank.

The fog experienced in the valley is of two types — the radiation and the air drainage types. On cool, calm and clear nights, the fog forms locally much ahead of sunrise. On other occasions, patches of fog are seen to drift down, mostly from the northeast, and settle down in the low-lying areas. The south bank consists of low lying and flooded areas with dense vegetation. Therefore, moisture is more abundantly present over the south bank than over the north bank. As such incidence of radiation fog is much frequent over the south bank.

The air-drainage fog (George 1951) may be expected to occur more often in the lower levels of the valley than elsewhere. Table 2 gives the heights above sea level of the different observatories on either side of the Brahmaputra. The stations have been grouped as per Table 2.

Group A stations lie on the west half and Group B stations on the east half of the north bank of the river. Group C stations lie on the east half and Group D on the west half of the south bank. It is easily seen that the northeast sector is at a higher level and the valley slopes down

TABLE 1

Mean number of days with fog

Group	Station	Oct	Nov	Dec	Jan	Feb	Mar	Total
A	Tezpur	0	2	2	2	1	0	7
	North Lakhimpur	0	1	6	2	0	0	9
	Tangla	0	0	0	0	0	0	0
	Majbat	0	0	1	1	1	0	3
B	Jorhat	7	16	24	22	6	2	77
	Gauhati	3	10	16	12	3	1	45
	Mohanbari	3	8	15	15	4	0	45
	Dibrugarh	2	9	16	16	6	2	51
	Sibsagar	8	16	25	19	9	3	80
	Goalpara	3	2	6	10	1	0	22

TABLE 2

Elevations of stations

Group	Station	Height a.s.l. (metres)
A	Tezpur	79
	Tangla	78
B	North Lakhimpur	102
C	Mohanbari	111
	Sibsagar	97
	Jorhat	90
D	Gauhati	54
	Goalpara	38

towards the southwest. So the drainage of air cooled at higher elevations takes place from the northeast of the valley. This cooled air slides down the slopes and settles (O' Connor 1945) on the low-lying south bank of the Brahmaputra. This causes the second, *viz.*, drainage type of fog over the valley.

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