

LETTER TO THE EDITOR

Concerning “NO₂ measurements on the Island of Hawaii”

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In *Tellus* XXVII (1975) Dr Mark Goldman in the paper, “NO₂ Measurements on the Island of Hawaii”, stated, “Recent measurements at Mauna Loa Observatory, Hawaii, appear to indicate a marked increase in the concentrations of NO₂ over that measured 11 years ago.” We do not believe this conclusion would have been advanced if he had considered the method of sample analysis or all the data available at Mauna Loa Observatory. The former, and now retracted, EPA method (Jacob–Hochheiser) used in the analysis of the bubbler samples, on which the inferred trend was based, has been shown to possess a positive nitric oxide interference, and uncorrectable variable collection efficiency (Hauser–Shy, 1972; Federal Register, 1973), and unacceptable precision and accuracy. Further evidence on the inconsistency of the data reported by Goldman is increased when compared to a bubbler NO₂ measuring system (Huygen–Steerman analysis method) operated

at Mauna Loa Observatory under the supervision of the National Center for Atmospheric Research and overlapping in time with the EPA data. From 1973 to the present, the average monthly NO₂ concentration measured by the NCAR bubbler system was almost *two* orders of magnitude below the EPA values. The values ranged from <0.2 ppb to 2.6 ppb. It is interesting to note that the NCAR values are the same, within the analytical error, as the earlier Junge data.

We are convinced that Dr Goldman’s hypothesis of a significant increase in NO₂ concentration is not valid. Until one of the newly evaluated analytical techniques has been applied to measure NO₂ at low background levels and compared with the previous methods, no statement can be made about increasing global NO₂ values. Then, and only then, should an interpretation of the data be made.

REFERENCES

- Federal Register* 38, No. 110, p. 15174, June 8, 1973.
Hauser, T. R. & Shy, C. 1972. *Env. Sci. and Technology* 10, 890.