

## The real greenhouse effect

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Sir,

This is with reference to a paper by Prabhu *et al.*<sup>[1]</sup> published in a recent issue of the journal. The authors report that if a small heater is placed within a hood it increases the ambient temperature and humidity in the covered area. This arrangement is likely to be beneficial in the management of patients with skin diseases like toxic epidermal necrolysis where control of ambient temperature and humidity importantly affects the outcome. The authors deserve to be applauded for describing a simple method, which will be useful in many hospitals where such patients cannot be treated in a modern burn unit.

Unfortunately, the authors incorrectly attribute the rise of temperature and humidity within the hood to the greenhouse effect. The greenhouse effect, first discovered by Joseph Fourier in 1824 and first investigated quantitatively by Svante Arrhenius in 1896, is the process in which the absorption of infrared radiation by an atmosphere warms a planet.<sup>[2]</sup> This effect results from the presence of some gases, known as greenhouse gases, in the atmosphere. These gases include carbon dioxide, water vapor, some oxides of nitrogen, methane, and chlorofluorocarbons, which absorb strongly in the infrared spectrum.<sup>[3]</sup> A little greenhouse effect is important for life, because without it the earth's surface would be up to 30°C cooler and, thus, uninhabitable. But if you add more greenhouse gases, as we have been doing since the beginning of the industrial revolution, the balance of evidence suggests that this leads to global warming.<sup>[3]</sup>

The name comes from an incorrect analogy with the way in which greenhouses are heated by the sun to facilitate the plant growth.<sup>[2]</sup> A greenhouse is built of glass: it heats up primarily because the sun warms the ground inside it, which warms the air and this air is prevented from flowing away. Greenhouses thus work primarily by preventing convection; 'the greenhouse effect' refers to warming of planets (Earth, Mars and Venus) and other celestial bodies with atmosphere (such as Titan) by infrared absorbing gases in their atmosphere. I believe this correction is desirable so that an important scientific concept is not misunderstood.

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## REFERENCES

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