100 YEARS AGO

***The Groundwork of Science; a Study of Epistemology*. By St. George Mivart. The chief definite conclusions which are drawn are that it (the universe) cannot consist of one kind of energy only, that it is impossible that intellect can have been evolved from mere physical force, and that animals show no signs of latent intellectuality. It is further insisted "that the portion of truth which we are able to attain to in our investigations of the cosmos, is but an unimaginably small portion of the whole"; a statement which will, we imagine, not be seriously challenged by workers in science. To the latter, viz. the science workers, Dr. Mivart devotes some attention in the concluding pages of his book. The narrowing effect of extreme specialism upon the mind is an undoubted evil ... . But there is the opposite evil of becoming diffuse to the extent of a practically useless attenuation of the mental faculties.**

From *Nature* 20 April 1899.

50 YEARS AGO

Mr. H. E. Hadley, well known as the author of many elementary text-books of physics, died on March 6, at the age of eighty-two. Mr. Hadley had lived rather a retired life. He was appointed headmaster of a small science school in Kidderminster, where he combined with physics a lectureship in chemistry. In those days, physics was considered of less importance than chemistry; but Mr. Hadley was always at heart a physicist. ... Mr. Hadley was a contemporary of Sir Richard Gregory and H. G. Wells at [The Royal College of Science, London], and from his training there and association with C. V. Boys he acquired a special genius for making his physical apparatus. His teaching equipment at Kidderminster was largely of his own making, and it would seem that this gave physics an added attraction to his students.

We regret to announce the following death: Mr. Will Hay, well known as an actor and also a distinguished amateur astronomer, on April 18, aged sixty.

From *Nature* 23 April 1949.

Many more extracts like these can be found in *A Bedside Nature: Genius and Eccentricity in Science, 1869–1953*, a 266-page book edited by Walter Gratzer. Contact Lisa O'Rourke. e-mail: l.orourke@nature.com

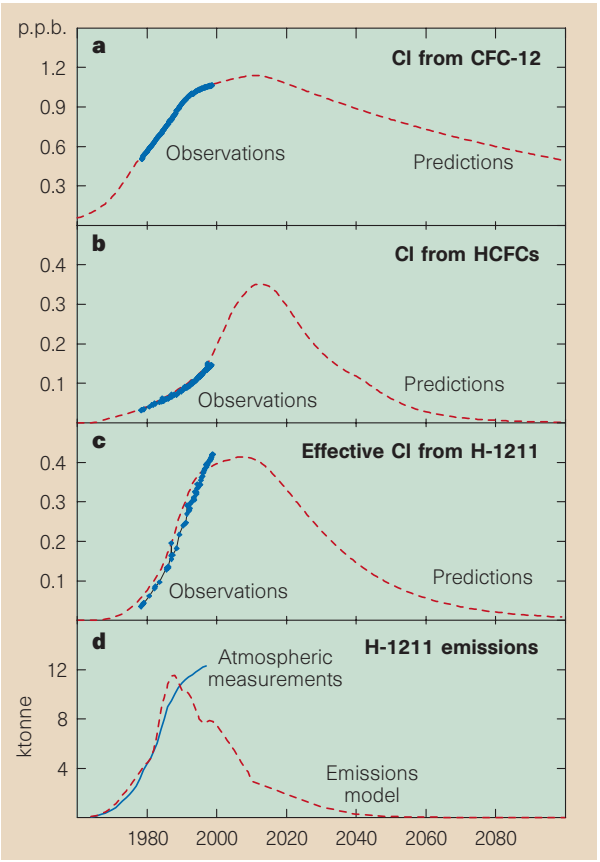

Figure 1 **Ozone-destroying trace gases now and in the future — observed[6,15,16] and predicted[4] atmospheric chlorine loading, in parts per billion of Cl, from various halocarbons.** a, **CFC-12;** b, **HCFCs;** c, **halon-1211 (effective Cl).** d, **Halon-1211 emissions calculated from atmospheric measurements and from a production-based emissions model[6].**

Ozone depletion is the dark side of the CFC experiment. But, for science, there is a bright side — the great progress in atmospheric chemistry, made over the past 25 years, which stems in part from the scientific and political drive to understand CFCs and ozone depletion, and in part from the study of the rapid yet transient rise of the synthetic halocarbons. For example, the earliest measurements of CFC-11 envisaged its use as a tracer of air motions[9], and it has become a standard test of global models of atmospheric chemistry[10] (and also a diagnostic indicator of ocean circulation); the first meaningful measure of the mean tropospheric concentration of hydroxyl radicals (OH), which destroy CH_3CCl_3 and HCFCs, is derived from observations of CH_3CCl_3 (refs 11, 12); CFC pollution events in Ireland are used to calibrate European emissions of other greenhouse gases[13]; and study of CH_3Br (a crop and soil fumigant) has shown us the importance of the ocean in determining the atmospheric residence time of a soluble trace gas, and has resulted in revision of the concept of ozone-depletion potential for short-lived gases[14].

What new opportunities will the second phase of the CFC experiment provide? Through its latitudinal gradient, the decay of CH_3CCl_3 will give us a measure of the north–south hemispheric difference in OH concentrations, plus a long-term record of possible OH trends. And, after sources of CFC-11 have diminished sufficiently, its atmospheric decay will provide us with the first accurate lifetime for a CFC, and the north–south differences at the surface will measure hemispheric asymmetry in stratosphere–troposphere exchange. It is serendipitous indeed that CFCs and related halocarbons have provided, and will continue to provide, some of the benchmarks of progress in atmospheric chemistry. □

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