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Phil. Trans. R. Soc. Lond. A 1990 **333**, 3-4

doi: 10.1098/rsta.1990.0131

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Robert Boyle: analytical chemist

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At the opening of a Discussion Meeting in a society as old as this, founded in 1660, it may be useful to consider what its founding members would have thought of today's topic, 'trace analysis', and how, if at all, they might have been able to contribute.

One of the chemist-founders, Robert Boyle (1627–91) (Burns 1982*a*), would surely have approved of the general subject area and would have been well able to participate. Robert Boyle, although born in Ireland, spent most of his life in England, the latter part at his sister's house in Pall Mall, which was next door but one to Nell Gwyn's house.

Boyle is popularly famous for Boyle's Law and his work on the air pump. However, his work in analytical chemistry was his most significant. His main analytical themes and systematic studies (see Burns 1982*b*) were (i) the nature of elements and the validity of fine assay; (ii) solution chemistry; (iii) measurements and application of specific gravity measurements; (iv) clinical chemistry.

These systematic studies are reported mainly in texts such as the *Sceptical chemistry*, *History of colours*, *Mineral waters*, *Medicina hydrostatica* and *Humane Blood*.

Boyle conducted an impressive overseas correspondence on scientific and religious topics and received most of the Royal Society's distinguished overseas visitors (Burns 1986*a*). He was qualified scientifically to contribute to this Discussion Meeting. He, for example, made use of flame coloration to detect copper in a silver matrix, described many luminescence phenomena including use of the first fluorescent acid–base indicator, extract of *lignum nephriticum* (Burns *et al.* 1984), and was the first to make quantitative colorimetric analyses when he determined iron in Tunbridge Water (Burns 1986*b*).

Interestingly, he was the first to use the term 'chemical analysis' in the sense it has since been used by chemists, in a letter written in April 1654 from Ireland to Fredrick Clodius (Burns 1978).

Boyle died on 30 December 1691 and was buried in the church of St Martin in the Fields. However, when the old church was demolished in 1721, before the building of the present one, no systematic record was made as to the disposal of the remains of bodies interred there.

In the early days the Royal Society had major concern in, and published much of analytical chemical interest. However, in this century other areas of chemistry have tended to dominate, except more recently. The last Discussion Meeting of a general analytical nature was that on 'Recent advances in analytical chemistry' in December 1981. The organizers hope that the present meeting will be as successful in content and discussion as the previous similar meeting.

Phil. Trans. R. Soc. Lond. A (1990) **333**, 3–4

Printed in Great Britain

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