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Below are short overviews of the articles that appeared in this the first issue of VOLUME:

President's Report (Alan J. Crockett)

In June 1982 Alan Crockett, the Society's first President, reported that it was now 16 months since the inaugural meeting of the Australasian Society of Respiratory Technology and that following completion of the constitution and other associated documents our Society had received its Certificate of Incorporation (17 March 1982) and was now a legal body. At this time the Society had 29 financial members and Alan commented that this was an impressive number considering the number of respiratory laboratories in Australia and New Zealand! Alan commented that the health profession in general was experiencing difficult times that would drive "great change" but was hopeful that our new Society would, through its collective intellect, help us all "weather" the storm. In hindsight he was correct.

Consumer Report: A Miracle (Elizabeth Osland)

A Consumer Report was to be published periodically to keep us in touch with our patients so that we can better understand their special problems. Sadly, this article by Elizabeth Osland was the only Consumer Report published in VOLUME. In this article Elizabeth gives an account of her "difficult" asthma for which she was hospitalized several times and the relief she enjoyed when prescribed the newly introduced becotide inhaler (ICS) in 1977. She refers to this drug as "a miracle" because it released her to lead a normal and unrestricted life where "injections and hospitalizations were a thing of the past". She "treasured it like a companion". Her concluding paragraph reads "It is comforting to know that continual research is going on, and that new drugs and treatments are being developed all the time. I am eternally grateful for the new drug that now allows me to live a fuller life without the need for injections or hospitalization."

Perhaps we should provide a forum or membership level within the Society for our clients! They would be strong advocates of the Society and their views would bring new ideas and perspectives that would help us achieve our objectives. As a start the ANZSRS Website could provide a "patient/client" information" page detailing what lung functions tests are, how the tests are done, why the tests are important, etc any thoughts?

Effect of Apparatus Dead Space on Gas Exchange Calculations (Jeffrey J. Pretto and Peter D. Rochford)

This excellent article identifies and quantifies two errors that occur in the calculation of VO_2 and the VCO_2 due to apparatus dead space. One error occurs during inspiration as each inspired breath contains a dead space volume of alveolar gas (assumed to be room air) from the previous breath, and the second error occurs during expiration when a dead space volume of room air causes dilution of expired gas. Theoretical error analysis is presented along with derivations of relevant equations. Jeff and Peter computed the magnitude of the errors in VO_2 and VCO_2 for three levels of tidal volume (≤ 1.0 litre, < 1.0 to ≤ 1.5 litres, and > 1.5 litres). They clearly show that the magnitude of errors introduced by ignoring apparatus dead space is largest when tidal volume is low and dead space high. For a dead space of 90 ml VO_2 and VCO_2 can be overestimated by 5% if the tidal volume is < 1.0 litre.

Remember, that this paper was written at a time when most laboratories built their exercise testing systems themselves and had not considered this source of error. This paper is a good example of a succinctly written theoretical analysis requiring no subjects (no ethics

approval!) but providing very useful practical knowledge. I recently spoke to the authors about this research paper and they confirmed that as a direct result of their study all subsequent calculations of gas exchange performed in their laboratory were corrected for apparatus dead space.

Commercial Gas Mixtures (Robert Ryan)

This is an extract taken from a presentation by Robert Ryan, National Product Manager, Special Gases (Commonwealth Industrial Gases, now BOC) that provides a historical perspective on the production of compressed gas mixtures, and the techniques currently used to produce gas mixtures (primary gravimetric), secondary (pressure filling) and unanalyzed. It also describes the methods used to ensure homogenization (eg rolling the cylinder). He also discusses the tolerances of the mixtures and includes a table indicating the level of certification.

Development of Body Plethysmography – Part I, Measurement of Lung Volume (Hennig Imberger)

This is an informative review of the development of a method (first applied in 1879) that has become an essential tool for assessing lung function. It was written by a founding member of the Society whose knowledge of the theory and practice of plethysmography was recognized internationally – see comments in the December 1993 issue of VOLUME. Hennig is now enjoying a busy retirement.

Mouth-Piece

In this segment space was provided for readers to express their views on any topic – general, scientific, controversial or amusing. The only item to appear in this first issue was to announce the BECON 1982 International Biomedical Engineering Conference in Melbourne. It is of interest to note that the guest speaker Barry Jones MHR.

Please contact me if you are interested in a copy of this or any other issue of VOLUME.

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