

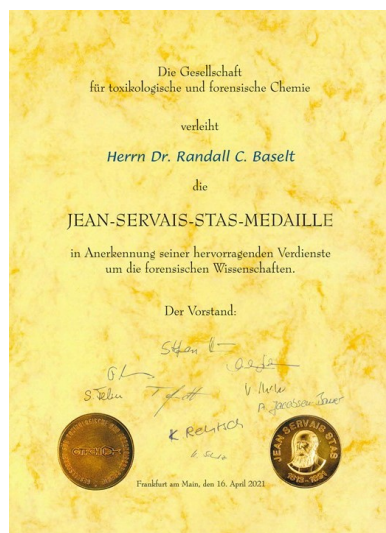
Laudation

Dr. Randall Clint Baselt – Jean Servais Stas-Prizewinner 2021**Robert J. Flanagan**

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Fig. 1. Dr. Randall C. Baselt (2019).



Ladies and Gentlemen,

The Gesellschaft für Toxikologische und Forensische Chemie (GTFCh) has awarded its most prestigious honour, the 2021 Jean-Servais Stas Medal, to Dr. Randall C. Baselt (Figures 1 and 2) in recognition of his immense and continuing contribution to clinical and forensic toxicology.

‘Where is Baselt?’ ‘Have you looked in Baselt?’ and suchlike cries are heard round the world on a daily basis wherever the clinical interpretation of analytical toxicology data is attempted. These exclamations, which vary in tone from the urgent to the exasperated, of course refer to the ‘Red Book’, more properly *Disposition of Toxic Drugs and Chemicals in Man*, now in its 12th Edition.⁽¹⁾

The book of itself needs little introduction save to say that Edition 1 (Vol. 1, Centrally-Acting Drugs; Vol. 2, Peripherally-Acting Drugs and Common Toxic Chemicals) was published in 1978. It should be noted that this was presaged by publication in 1975 of a tabulation ‘*Therapeutic and toxic concentrations of more than 100 toxicologically significant drugs in blood, plasma or serum*’.⁽²⁾ Everything seemed so much simpler then!

Subsequent single-volume editions of *Disposition* have appeared on a more-or-less regular basis as our subject has expanded in both scope and in complexity, Editions 3 and 4 being co-authored with Randall’s old boss and mentor Bob Cravey (Figure 3).

Fig. 2. Jean Servais Stas-Prize Certificate for Dr. Randall Clint Baselt on his achievements in forensic-toxicology sciences.

In recent years, in addition to revising existing monographs when appropriate, each edition has featured some 250 new entries (Figure 3), reflecting not only newly introduced compounds, but also the application of newer analytical procedures to older compounds. From Edition 9, latterly in collaboration with Robin Whelpton, I have been pleased to pen some introductory paragraphs.

Beginnings

But what of Randall Clint Baselt (pronounced *Baysalt*) the man, aptly described as ‘The best known name, but also the least known name, in toxicology’? His great grandfather became a deacon at his German Methodist church in Chicago. He was married in turn to 3 German-born

women (he was twice made a widower) and had 8 children. He had emigrated from Breslau (now Wrocław) to the US in 1869 aged 21 to avoid being drafted into the Prussian Army prior to the 1870 war with France.

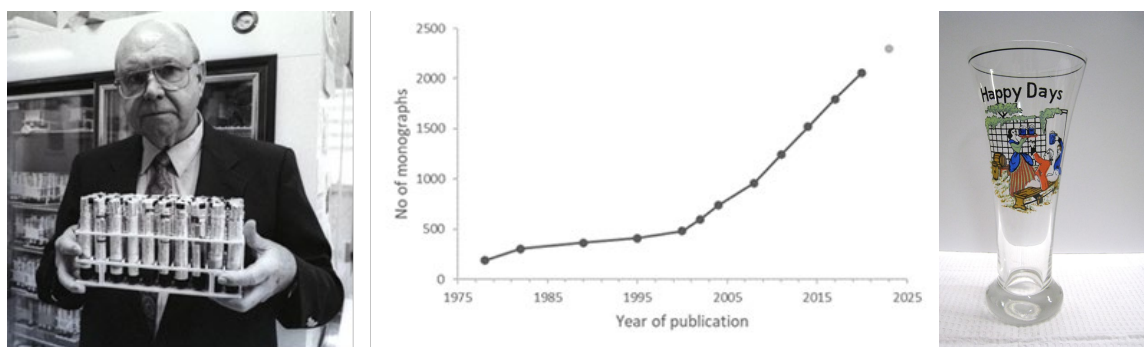


Fig. 3. Dr. Robert H. Cravey (1925–1990)⁽³⁾; Evolution of the ‘Red Book’ by year of edition and number of monographs (2023 projected); one of Fred Baselt's beer glasses from his Princeton days, circa 1918.

Randall’s uncle Fred C. Baselt had a degree in chemistry from Princeton (Figure 3). He worked solely for the American Can Company in New York City and had some dozen patents to his name. He was involved in the production of the first canned beer (1933). His uncle Walter H. Baselt had an engineering degree from DeVry University in Chicago and worked solely for US Steel in Chicago. He authored over 100 patents, mainly involving the functional parts of railway rolling stock such as brakes and suspension systems.

Randall was born in Chicago in 1944, he studied at the U.S. Naval Academy (1961–1963) and then gained his BSc after completing the Chemistry Curriculum at the University of Illinois, Urbana, in 1965. He studied German as required for a chemistry major, and also learnt Russian so that he could correspond in Cyrillic with a pen-friend in Moscow, who responded in English.

Forensic Toxicologist

From 1965–68 Randall worked as a Forensic Toxicologist at the Sheriff's Laboratory of Criminalistics, Orange County, California under the supervision of Cravey. The laboratory was ‘jammed in atop the county jail in Santa Ana’ (Figure 4) and there he first developed his enduring interest in gathering analytical and toxicological data on newly-introduced compounds, licit and illicit.

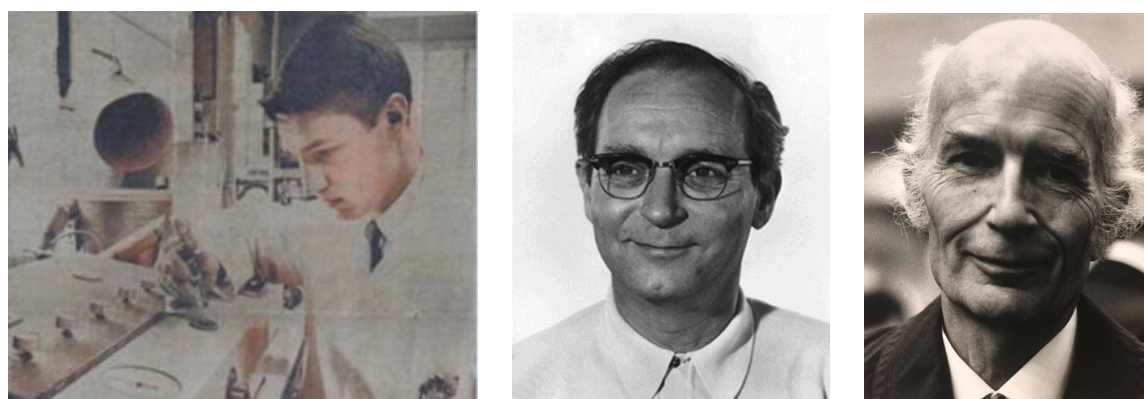


Fig. 4. From left: Randall C. Baselt, an assistant toxicologist, injects a drug sample into a chromatograph⁽⁴⁾, Dr. Louis (Lou) James Casarett (1927–1972)⁽⁵⁾; Professor Marcel Henry Bickel (1927–2017).⁽⁷⁾

In 1969 Randall became a Research Fellow in the Department of Pharmacology, University of Hawaii School of Medicine in Honolulu, where he completed his PhD. His supervisor was the renowned Lou Casarett (Figure 4), who sadly died of a brain tumour aged 45. His name of course lives on in *Casarett & Doull's Toxicology: The Basic Science of Poisons*, now in its 9th edition (2018). A paper Randall co-wrote with Dr. Casarett in 1971 still bears scrutiny 'Marijuana is acutely, and probably chronically, toxic. Its potential dangers need further investigation'.⁽⁶⁾

In 1972, on gaining a National Institutes of Health Postdoctoral Research Fellowship, Randall relocated to the other side of the world - the Medizinisch-Chemisches Institut at the University of Bern School of Medicine in Switzerland could hardly have provided a greater contrast to Honolulu! In Bern he continued his research on methadone metabolism under the expert guidance of pharmacologist and medical historian Marcel Bickel (Figure 4).

His year in Europe incorporated a visit to the UK, where amongst other things he became fascinated by the yew trees planted in medieval churchyards possibly with the aim of preventing people grazing their cattle there. The history of the European yew (*Taxus baccata*) is of course fascinating in itself – people forget that the widespread adoption of firearms as opposed to cannon in early modern Europe was prompted not only by the need to modernise, but also because by the early 1600s there was little tradeable yew wood with which to make longbows left anywhere in the continent!

After his sojourn in Switzerland, in 1973 Randall was appointed Research Toxicologist at the Office of the Medical Examiner in San Francisco. In 1975 he moved again, this time as Chief Toxicologist at the Office of the Medical Examiner in Farmington, Connecticut and Assistant Professor of Laboratory Medicine, University of Connecticut Health Center, Farmington, Connecticut. He had to equip, staff and implement methods for a brand new laboratory at the same time as doing research on nickel toxicology in Bill Sunderman's laboratory.¹

Importantly at this time, it should not be forgotten that Randall was the Founder and Editor (1977–2000) of the *Journal of Analytical Toxicology*, which remains an important and respected focus for scientific communication within our subject. Mainstream publishers such as



Elsevier were not interested in the proposed journal, but in turn Cravey suggested Preston Publications in Illinois, for whom he had edited a special edition of the *Journal of Chromatographic Science*. Randy remained editor until he took 3 years off work (2000–2002) to build a house on the northern California coast with the help of his brother (Figure 5).

Fig. 5. The house that Randy and his brother built.

In 1978 California had beckoned again, this time for good with initial appointments as Associate Professor of Pathology at the University of California School of Medicine, Davis and Director, Toxicology and Drug Analysis Laboratory, University of California Medical Center, Sacramento. His ever-expanding interests included a 1981 translation of E.M.P. Widmark's *Principles and Applications of Medicolegal Alcohol Determination* from the original 1932 German edition.⁽⁸⁾

¹ F. William Sunderman Jr. MD (1931–2011)

The Chemical Toxicology Institute

In 1984, Dr. Baselt moved more openly into training and publishing, becoming Director of the Chemical Toxicology Institute, Foster City, California. His output during this time is evidenced by the list of published volumes on the Biomedical Publications website (<http://www.biomedicalpublications.com/>). In 1994 he received the Rolla N. Harger Award of the American Academy of Forensic Sciences for outstanding contributions in forensic toxicology.

Although for a number of years he continued with work for bodies such as the American Board of Forensic Toxicology, the Society of Forensic Toxicologists, the US Food and Drug Administration and the National Laboratory Accreditation Program, in time updating *Disposition* became his principal focus. In this he is ably assisted by his wife Lana, who acts as indefatigable copy editor, proof-reader, and production manager. She is likely the only person to have read every page of every edition of *Disposition*. Randall writes in longhand and suspects that Lana may also be the only person capable of deciphering his handwriting! She has typed every document Randall has produced beginning with his undergraduate chemistry thesis.

Lana was born in Shanghai in 1946. They met at the University of Illinois where she was an overseas student. Their son David was born in 1967. He spent a high-school summer working in Manfred Moeller's lab in Homburg and returned speaking German having never studied it at school. Randy was very proud of him! He has a PhD in chemistry and is Product Design Manager at Stanford Research Systems in San Jose, California. An avid amateur photographer, he excels in making maps of the California redwoods. Perhaps one day I will have opportunity to use them.

Future Developments

What of the future of *Disposition*? Its beauty is its wise controlling hand – single or joint authorship works have a coherence and discipline that multi-author, edited works can never match no matter how hard the editor(s) might try. Edition 13 with some 250 new entries is scheduled for Spring 2023. The 40 or so synthetic cannabinoids previously combined in a single section in Edition 12 are now handled separately, for example. However, deciding what deserves a monograph is no simple task. The ever-expanding list of novel or new psychoactive substances (NPS), for example, continues to generate quantitative data in biological samples from humans, but some compounds are metabolites of others, and nomenclature is not straightforward in the absence of approved, internationally recognised names. Irritatingly at the highest levels the Chemical Abstracts Service (CAS) does not use International Union of Pure and Applied Chemistry (IUPAC) names – what chance the rest of us? There are analytical issues too – one of the greatest failures of separation science is that it has not yet solved the problem of chiral analysis at the sensitivity needed for work with biological samples, a fact that has to be born in mind when using the data presented in the monographs.



Fig. 6. The 'Red Book' - First to Twelfth edition (with Sixth edition missing).

Finally, a practical problem is the ever-increasing size of *Disposition*. Whilst reducing font size and paper thickness have managed to facilitate single volume production so far (Figure 6), this can't continue indefinitely. An electronic version is seemingly out of the question because *Disposition* is self-funded and an e-version would be pirated immediately – our own book⁽⁹⁾ was available free on the internet within three weeks of formal publication in June 2020! Randy himself found the illegal link whilst checking out Wiley's 'secure' on-line publication system...

Thankfully, however, the cry 'Where is the *new* Baselt?' will continue to be heard for some time yet.

It only remains for me to add my sincere congratulations to Dr. Baselt on the award of the 2021 Jean-Servais Stas Medal. No-one could be more deserving of this high honour.

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Note by the Editor

Due to the Corona restrictions in April 2021, the XXII. GTFCh-Symposium was held as an Online-Conference. Videos of the laudation by Professor Flanagan and the reply by Dr. Baselt are available via:

Laudation by Professor Robert J. Flanagan

gtfch.org/cms/images/stories/events/Mosbach2021/RC%20Baselt%20Laudation.mp4

Reply by Dr. Randell C. Baselt

gtfch.org/cms/images/stories/events/Mosbach2021/Randall%20Baselt%20Speech%2020210416.mp4