PETROG versus PetrogLite

PetrogLite is a simple application, for people who want software to move the MicroStepper (the MicroStepper cannot be moved manually, it must be controlled from software). PetrogLite stores the key pressed on the keyboard together with the slide position when that key was pressed, and then moves the slide to the next point. It replaces the Prior / Swift 12/20 channel point counter, with considerably enhanced functionality but is still very basic. It does not significantly enhance the science of petrography nor address the issues which have held back petrography since other sub-disciplines of geology entered the computer age. It is adequate for quick-look studies or where there are only a few possible choices, such as non-geological point counting or can be used for advanced petrography but with some considerable extra effort on the part of the petrographer.

PETROG is a full suite of petrographic data capture, management and analysis software, with a relational database management system, a knowledge base managing the dictionaries and reference lists, reporting and graphing options, and additional options made possible by integrating the images seen at each point. The analysis options take full advantage of the data initially captured, but it is the process of data capture that really sets PETROG apart and provides the great step forward in the science of petrography.

The heart of PETROG is a suite of dictionaries, arranged hierarchically, so that the petrographer can log what is seen, without having to second-guess the analysis and application. The philosophy behind PETROG is the same as that behind the original development of databases: a database should support any subsequent analysis, even if it had not been thought of at the time.

The dictionaries are managed by a knowledge base with a grammar that allows habit, morphological relationships and other significant information to be logged consistently, unambiguously and as simply as possible. It is this additional information, together with the hierarchical database, that allows PETROG to capture such vastly improved petrographic data.

The hierarchical database allows the petrographer to log exactly what is seen, i.e. whatever level of detail is identifiable from the thin section can be logged, from the general to the specific. For example, any point on this hierarchy:

Sheet Silicates	Authigenic Mineral
Clay Minerals	Sheet Silicates
Kaolinite Group	Clay Minerals
Dickite	Kaolinite Group

can be logged, knowing that PETROG will allow reporting, queries or any other function to correctly sum, split or otherwise use the data wisely.

Similarly, the material under the crosshair on this slide can be described with the phrase "Authigenic kaolinite with a 'booky' growth form filling a grain mouldic pore which was formed by the dissolution of plagioclase feldspar", constructed using grammatical rules so that each element of the phrase can be used separately or in combination in subsequent analyses.
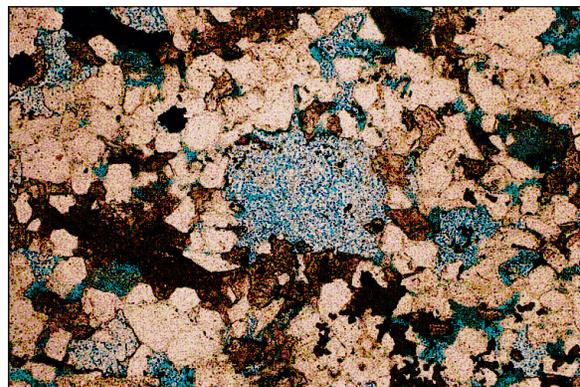
These are the most significant differences between PETROG and PetrogLite - the contribution that PETROG makes to the science of petrography. There are other differences as well: the graphical analyses, ternary diagrams, reporting into Word, Excel, Touchstone, Exemplar, and other formats, its image analysis possibilities, and much more, but the heart of the system is collecting the highest quality data, so that all other possibilities follow as a matter of course.

PETROG is more than just point-counting software - it is an image capture and full petrographic data analysis system which is excellent for research and teaching, not least because each point counted is captured as a jpeg image, giving a full audit trail. However, this does mean that a camera is required, which makes it considerably more expensive than the basic PetrogLite.