Looking up an encyclopedic petroleum geologist

Petroleum geologist Prof Dick Selley can add the editing of an encyclopedia to his list of accomplishments which, among many others, includes championing the profession of geology and tracking winemaking by the Romans in Britain. Andrew McBarnet meets a man of many surprising facets.

It's hard to know where to start with Dick Selley, emeritus professor of petroleum geology at Imperial College, London. As well as distinguished academic, the current CV includes oil industry consultancy, textbook author, professional society roles, vineyard guru, magistrate, Dorking caveman ... and editor of a newly published definitive, Encyclopedia of Geology in five volumes.

It took four years and two months to produce the encyclopedia which since last November has begun to weigh on the bookshelves of libraries around the world. As one of the three editors of the project, he was intrigued to know where the early sales had come from. He found out that a surprising number of the first batch were being sold to academic institutions in less developed countries. 'It apparently serves as the only textbook for geology students, and actually that makes a lot of sense. We've covered just about every topic we could think of in a concise, up to date, and accessible way using the world's experts.'

Selley says he's mightily relieved that work on the encyclopedia has come to some kind of conclusion, although contractually he's obliged to stay involved for any updates, particularly for the online edition. By and large he's pleased with the way it turned out given the scale and responsibility of the undertaking, and he's not going public with any of those minor imperfections that all editors have to grin and bear.

He never expected to be involved in the first place. He was newly retired from his full-time post as professor of applied sedimentology at Imperial, and had just put to bed a new revised edition of Applied Sedimentology, one of five well regarded textbooks he wrote during 25 years as an academic. It seemed like a full stop on authorship. 'I had said to myself that was it for books, when my publisher Academic Press (now part of Elsevier) approached me. You must be joking, I said, but they made it sound easy enough, with two other editors, plus another 20 people to help with the contributions to the encyclopedia. They even promised an enforcer to ensure that the copy came in on time.'

His fellow editors were Prof Robin Cocks, former keeper of paleontology at the British Museum and ex-president of the Geological Society, and Professor Ian Plimer, the geologist from Melbourne University, Australia who had the temerity to challenge the Christian Right in the US over the teaching of creationism in American schools. In the encyclopedia, the creationist viewpoint gets short shrift. 'I was especially pleased to be working with Ian,' Selley says, 'because I admired the stand he was taking at great personal cost.'

The encyclopedia probably appealed to Selley as much as anything because he is an educator at heart who caught the geology bug early in life. At school in Eastbourne, Sussex, one of the teachers was a geology enthusiast, and encouraged the inquisitive youngster to spend his Sunday afternoons cutting his geology teeth collecting fossils under Beachy Head.

Selley is rather proud of the fact that, despite having the requisite qualifications, he was turned down by Imperial College, where he was to spend most of his working life. He suspects his headmaster of blighting his application with a poor reference. It was a blessing in disguise, because his geology education came instead from Kingston Technical College doing an external University of London degree. In his opinion the college offered the best teaching in the country at the time in the late 1950s. 'We had an old sausage van loaded with camping gear and we did the grand tour of the British Isles, visiting everywhere worth hammering.'

He laments the fact that field work, his passion, has gone out of style in today's teaching environment. He blames it partly on the perceived legal liabilities associated with supervising field trips which universities are not prepared to take on. Tight budgets have something to do with it too. Computers...
also play an insidious part. ‘Students today have admirable IT skills, far better than we ever had, but that doesn’t mean a proper understanding of rock geology. The danger is that you end up with cybercadets who can’t tell a granite from a sandstone.’ Selley nostalgically refers back to his PhD days at Imperial (he got there in the end!). ‘From April to October I lived in a tent in the Western Highlands studying the Torridonian. That was how you learned about geology.’

Some years ago he wrote a series of articles for the Geological Society publication Geoscientist entitled ‘What on earth is a geologist?’ It aired the whole issue of the education, training and professional status of the next generation of geologists for the petroleum and other industries, and how to attract good recruits to the profession.

He disapproves of the fact that single honours degrees in geology are giving way to what he calls mix-and-match degrees. These may include some geology together with physical geophysics, engineering and environmental studies which have varying intellectual robustness. Geoscientists in his view may sometimes lack core geological knowledge. A couple of years ago in an invited article for the Indonesian Petroleum Association (IPA), he went to town citing a number of faux pas, mainly in the North Sea oil sector, caused by apparently ill-informed geologists.

His favourite example, however, involved a seemingly respectable geological guidebook written for the IPA which he was told to use as the geological bible for a course and field trip he was running some years ago in Indonesia for a well-known wireline company. ‘At one point we examined grey shale that the guide book described as containing horizons of volcanic bombs. These turned out to be siderite concretions full of fossils. A carbonatite plug turned out to be a raised sea stack of skeletal limestone.’ His embarrassment was complete when he sought to demonstrate the ‘right-way-upness’ in turbidite sequences. The guidebook had all the synclines as anticlines and vice versa.

Selley has long advocated the need for geology to be seen as a serious modern profession. He is aware that the bearded, scruffy, suntanned amateur image of the geologist still dogs the profession, as he puts it, ‘mentally analogue, rather than digital’. He’s encouraged by the emerging system of mutual recognition by professional bodies in different countries for licensed or chartered geologists. This provides the technical knowledge, continuing professional development, and code of conduct which he regards as essential for a professional qualification to be respected.

These days he acts as a gatekeeper for the chartering of professional geologists in the UK, as chairman of the Fellowship and Validation Committee of the Geological Society. It’s hard work, he says, but it’s a way of repaying the debt he owes to geology in his own career. ‘We only meet five times a year but there is constant email chatter between the Society’s officers and other members of the committee.’ Selley has served in other roles with the Geological Society, including vice president and between 1993 and 1996, foreign secretary, a position he especially reveres as it was once held by Sir Henry de la Beche, first director of the British Geological Survey. Selley himself has been honoured by the Murchison Fund award and the Silver Medal of the Society. His involvement in professional bodies also includes stints on the councils of the Petroleum Exploration Society of Great Britain, the Geologists’ Association and the European Federation of Geologists.

True to his convictions, Selley in his career has always favoured the practical fieldwork side of geology. He did some post doc research in Libya on the Miocene of the Sirte Basin and also in Jordan. Then in 1969 he was persuaded to join the Oasis Oil Company in Libya, a consortium of Shell, Conoco, Marathon, and Amerada Hess which was big at the time. ‘On the strength of the offer, I sold my house and car, and quit my job. By then I was also married with two young children. Just as we were about to set out, Col Gaddafi took over – and we had to wait two months.’

His time in Libya was spent mainly in the south, months at a time in the field with the family left in the ‘expat ghetto’ in Tripoli. After two years, the excitement of the emerging UK North Sea E&P sector provided the incentive to return home. He was offered a job ‘in minutes’ by Conoco which he accepted. As a senior geologist on the Conoco exploration team, he was involved in the discoveries of the Lyell, Murchison and Hutton fields in the North Sea, and also participated in projects in Greenland and the Mediterranean.

Selley’s view at home: Denbies Estate, the UK’s largest vineyard, which he instigated.
By the time he elected to return to Imperial, he was a seasoned petroleum geologist with plenty of experience to share with his students. Although some of his colleagues thought it was ‘vulgar’, he insisted on staying connected with the oil industry through consultancy work and continued professional development courses which took him to many locations around the world. The benefit for his students was that his teaching was always current.

As an educator for much of his adult life, Selley gets most pleasure from knowing that wherever he travels in the world, he can always be sure of a warm welcome. ‘Within 24 hours of arriving, someone will have been in touch and we’ll meet up. It’s also gratifying to see my former students climbing the career ladder in their own countries.’ At a dinner to mark his official retirement from Imperial, Selley’s teaching style was referred to as theatrical on occasion. He doesn’t deny it. These days when he teaches, he delights in passing round his class two well polished hip ‘heads’ - trophies from replacement surgery he had a few years ago, itself the result of carrying too many heavy backpacks up too many mountains in the cause of geology. ‘Of course no one can identify them, but I use it as an illustration of sequence stratigraphy.’

Teaching may have been his first love, but the record shows that Selley has published over 70 research papers on sedimentology and its application to petroleum E&P, and then there are the five textbooks, of which there have been numerous editions and translations into many languages, some, he notes wryly, with permission. He seems unnecessarily self-deprecating when he claims his career research, on developing techniques for diagnosing depositional environments of petroleum reservoirs to predict their geometry, has been largely superseded by advances in seismic imaging.

In his semi-retirement from academia - he still has a small office at Imperial - his research interest has morphed from oil to wine. His preoccupation these days is the impact of geology and climate change on viticulture, a subject in which he is making a new reputation for himself. It started as a hobby on his visits abroad. On days off he would often investigate the local vineyards or winelands, as he likes to call them, with his geologist’s hat on. His claim to fame in this arena is that, on his advice, by far the largest producer of English wine was established from scratch.

Selley, who has no financial interest in Denbies, likes the fact that it was his idea. It turns out that the Romans got there first however, they are known to have grown vines just 300 m from the present wine-growing site. This and a whole lot of other information is to be found in Selley’s latest publication The Winelands of Britain: past, present and prospective. The book shows how climate change has affected British vineyards from the Roman and Medieval warm-climate through the ‘little ice age’ of the 15th to 19th centuries to the current warm phase of today.

The book, which is self published under the Petravin Press imprint, is the outcome of mapping all the known vineyards over the last 2000 years to show how their location correlates with changing climate and geological conditions. Most of the vineyards through the ages can be seen to exist on well-drained south facing slopes of rock from different ages and types. Selley predicts that the current distribution of British vineyards is likely to move further north, to a line from the River Humber to Merseyside by 2050 assuming the current warming trend. Once unconvinced, Selley is now a firm believer in the global warming phenomenon. When the book was first published, the popular press had turned the former pig farm into 265 acres of vine. Denbies Wine Estate, which is run as a family business, has become a major tourist attraction as well as the producer of 400,000 bottles of wine every year.

Libya 1963: Miocene oyster reef grabs Selley’s attention in his younger field trip days.
fun with the spread of vineyards over the country looking forward to Chateau Loch Ness and a monster headache.

For Selley, the wine interest has provided book sales where he actually makes more money than he ever did from textbooks. This amuses him as do his lectures based on his book, which he takes to all kinds of groups from students to geological societies and wine connoisseurs. It’s not enough to keep him fully occupied. He currently serves on an estimated 15 committees of one sort or another, and he spends two days a week on his role as a local magistrate. When last contacted he was busy writing a proposal as a member of the local ‘Dorking Cavemen’ to seek funding for excavation of a local cave - and looking forward to his evening glass (or two) of Bacchus, the best of the whites from Denbies vineyard.

References

Call for Participation
2005 SEG Land Seismic Forum
Gulf Hotel Bahrain • Manama, Bahrain • 18-21 September, 2005

Substantial oil and gas potential and proven reserves onshore guarantee that land seismic will be a major factor in securing the supply of vital energy to the world. Land seismic presents some unique challenges that deserve special attention. From acquisition to interpretation, seismic on land requires different thinking and processes than marine seismic. For this reason, SEG is launching this new Forum to focus on seismic land issues.

The goal of this applied Land Seismic Forum is to bring geoscientists together to promote research, development and innovation in this area. Participants will focus on discussing solutions, sharing and exchanging important ideas to meet the specific challenges of land seismic technology.

The Land Seismic Forum is designed to encourage active participation. We welcome short and thought-provoking talks and would like to give the opportunity to all participants to share their thoughts.

All participants are expected to stay for the entire meeting and at the same location. Participation in the Forum is limited to approximately 75 people.

SESSION TOPICS
• Acquisition - Geometries and sampling, etc.
• Acquisition - Sources and receivers, etc.
• Near Surface
• Land Multiples
• Imaging and Interpretation
• Signal Enhancement
• Multi-Component Imaging

FORUM CONTACTS
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If you would like to participate, please visit: http://seg.org/meetings/landseismic and fill out an application no later than June 15, 2005.