

## BOOK REVIEWS

**Challenging Beliefs: Memoirs of a Career**

By Tim Noakes and Michael Vlismas. Pp. 304. R220.00. Zebra Press. Cape Town. 2011. ISBN 978-1-77022-1468.

*Challenging Beliefs* is the fascinating story of the life of Tim Noakes, a world authority on sports science. Numerous challenges faced in pursuit of 'the truth' expose intellectual and scientific duplicity and the myth of accepting that peer review guarantees an elusive chimera of 'balanced opinions'. The commercialism of the sports industry, a massive marketing game with profit being the driving factor, not what's good for the athlete, is exposed.

While on an American exchange programme, Chris Barnard's heart transplant helps Noakes to decide to study medicine. After qualifying at UCT and working in Lionel Opie's cardiac laboratory, he focuses on human physiology rather than disease. The support and encouragement of Wieland Gevers, J P van Niekerk and Johan Koeslag make his career choice possible. With support from former Springbok captain Morne du Plessis, the Rupert family and former UCT Vice-Chancellor Mamphela Ramphele the Institute of Sports Science becomes a reality. Its creation overcomes the 'curmudgeonly academic support' from UCT labelling sports science 'Mickey mouse', a phrase that comes back to bite the denigrators. The Institute evolved into a centre of internationally respected research and discovery.

Noakes realised he need not expect support from colleagues in conventional medicine and scientific disciplines. It would also prove difficult to change the mindset of influential scientists and for the scientific community to accept novel ideas. Personal attacks – 'shoot the messenger' – revealed the dark side of this community.

He describes the realities and psychological challenges in running the Comrades, South Africa's premier race. Other topics cover the history of sports science from the original Olympic Games, the use of amphetamines and anabolic steroids and the sports drug scene.

It took Noakes over 20 years to convince 'scientists' that over-hydration of marathon runners is dangerous fantasy and poor science. The chapter 'Waterlogged' covers the classic confrontation with the massive sports drink industry. Noakes stresses that humans are designed to run in the heat, can sweat, are bipedal and, importantly, have a superb brain that protects them from heat injury, but that they were encouraged to drink beyond need. Those who collapsed were often transfused, despite being over-hydrated, occasionally with fatal results.

The myth of the \$28 billion miracle sports drink confidence trick is exposed in the 'Gatorade saga'. His only ally is science. Gatorade dominated the market owing to massive finances, influencing sports magazine editorial boards and hence controlling their peer review opinions. Therefore, his refutation of the 'Science of hydration' proved hard to get published.

'Tackling the risk in rugby', dealing with the need to reduce associated, often tragic, injuries, faced the massive negative forces of the South African Rugby Board. A letter from Danie Craven to Conradie Hospital, where cervical fractures with neurological fallout are handled, requested that Noakes be denied access to records and impugned his integrity. Noakes and Du Plessis remained undeterred, resulting in safety rules now being a major factor in national sport.

'Training the Springboks' is discussed and again the huge power of the mind stressed regarding achievement of excellence. Four

years before the Rugby World Cup, Jake White imbued his team with the belief that they would win, and they did.

'Bob Woolmer's art and science of cricket' has fascinating insights in the science of batting, including why Don Bradman, the greatest cricketer in history, and self taught, used a different batting technique compared with the current one. The legendary Vivien Richards said 'there's no method'.

The chapter on the power of the mind, 'The central governor ...', is seminal. Essentially 'it's all in the mind and not body'. Roger Bannister, on breaking the 4-minute mile, confirms.

In his prestigious J B Wolfe Memorial Lecture at the American College of Sports Medicine Noakes challenges a physiological concept proposed by Nobel prize winner Professor A V Hills. The 1921 paper, regarded as a classic, suggests the heart's critical position in exercise-induced oxygen consumption. Noakes finds that Hills accepted the possibility of an extra-cardiac factor and shows it is not the heart determining maximum exercise performance, but that the brain is the governor.

The final chapter deals with 'Coaching the coaches'. Australia, the USA and England invest as much in their coaches as in their athletes. They share collective coaching knowledge as they coach their coaches. This is not done in South Africa and every time a new Springbok coach is selected we begin from scratch rather than build on previous coaching achievements.

The must read 'Chariots of fire', superbly written by Michael Vlismas, will appeal to doctors and sports enthusiasts and anyone interested in the life and achievements of one of South Africa's most respected scientists. Noakes' book, *The Lore of the Runner*, now in its 4th international edition, and having sold over 100 000 copies, is the runner's 'Bible'. The Discovery Vitality Health programme, stimulated by Noakes' work, has been bought by the Americans for \$60 million. That's telling you.

**John Steer**