which normally migrated to the Sonanadi area during the previous years, showed no signs of movement outside the CTR.

The climax of this succession is expected to reach in the coming decades, when a persistent dynamic equilibrium between organisms and their habitat would be achieved. This would be a condition when the buffer zones become floristically rich and provide independent support to the life of animal species dependent on them and in turn, to the carnivores, mainly tigers, in order to enhance tiger management programmes. The Jhirna and Dhara regions would then be completely encompassed in the core zone of the CTR. According to the forest authorities, once these fields develop into chaurs (grasslands), the forest cover would increase and this would offer good potential for wildlife-viewing and attract more tourists. Such practices, in turn, would help fetch more revenue for wildlife protection, and support future conservation programmes in our country.

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Where do we place the Indian cattle *Theileria mutans* of yore?

Theileriosis causes immense economic losses in the improved cattle of the tropics and subtropics. As measures to control the pathogenic *Theileria* have been evolved, attention has now shifted to the benign parasite, *Theileria mutans* described as 'rag-bag', in which were dumped all bovine benign *Theileria* strains of the world[1].

Recent researches revealed that *T. mutans* is a sub-Saharan parasite of African buffalo (*Syncerus caffer*) affecting cattle and sheep, and is transmitted by *Amblyomma* ticks[2]. Another finding that indirect fluorescent antibody test (IFAT) differentiates *Theileria* species of cattle from one another[3], stimulated research on benign *Theileria* occurring in cattle. It soon became clear that British *T. mutans* was different from *T. mutans* of Africa, but was similar to Australian *Theileria* of buffalo and cattle[4,5]. A comparative study showed that benign strains of *Theileria* isolated from cattle in Britain, Australia, Iran, Japan, USA and a more pathogenic stock of *T. sergenti* from Korea were closely related in morphology, serology (IFAT) and transmission by *Haemaphysalis* ticks, except the American stock transmission which is yet to be determined[6]. The authors described the parasites as *T. orientalis*. Some subsequent reports from Ethiopia, New Zealand and Burundi in Central Africa designated benign *Theileria* of cattle as *T. orientalis*, whereas others from Italy, Greece and Australia assigned them to *T. buffeli*.

Two *Theileria* species contending for attention are *T. sergenti*[7] and *T. orientalis*[8] described from cattle of eastern Siberia; the former as pathogenic and the latter as benign. According to the International Code of Zoological Nomenclature, the name *sergenti* is invalid as it is preoccupied by a valid species of sheep parasite. This leaves *T. orientalis* as the only valid species to designate benign *Theileria* of cattle in Eurasia 'as long as its identify with *T. buffeli* has not been established'[9]. *T. buffeli* is known to infect buffaloes in South east Asia. It is transmitted by *Haemaphysalis* ticks and is transmissible to cattle[10]; therefore, the name *T. buffeli* takes preference over *T. orientalis*. Stewart *et al.*[11] support the view that the benign parasite seen in cattle has been correctly named as *T. buffeli*.

Despite the warning on the invalidity of the nomen *T. sergenti*, Japanese authors have stuck to this name basing their assertion mainly on molecular studies reviewed by Gubbels *et al.*[12], who suggested to continue using the name *T. buffeli* for buffalo-derived parasites of cattle.

In India, the 'small piroplasms' affecting almost all cattle have been described as *T. mutans*, as they produced no ill-effects in the host even when occurring in large numbers[13]. A recent publication erroneously mentions *T. mutans* as occurring in the 'Middle-East and Far East, Russia, Africa and Australia'[14].

Some light on benign *Theileria* of cattle and buffaloes in India was shed by Shastri *et al.*[15], who identified the parasite isolated from an ox as *T. orientalis* on the basis of the characteristic 'bar' structure in the host erythrocytes in all the six calves infected by *H. bispinosa*, and positive reaction of sera of three out of six infected calves to IFAT but not to African *T. mutans*. Another study[16] showed that *Theileria* isolated from debilitated and anaemic buffaloes was transmitted by *H. bispinosa* ticks to nine buffalo-calves, but not to cow-calves. Blood smears of the buffalo-calves showed pleomorphic piroplasms and typical 'bar' or 'veil' or both in the host cell, sera of five of them reacted positive to *T. orientalis* in IFAT and not to *T. mutans* or *T. annulata*. The authors left the parasite unnamed, but Uilenberg, who provided findings on morphology and serology opined that unless the infectivity of the buffalo parasite to cattle was further examined, the name *T. orientalis* be retained 'for the moment'[6].

There is another Indian report[17] on five out of seventeen cattle reacting positive to complement fixation test using *T. mutans* antigen obtained from Germany. On the basis of this and other observations the occurrence of *T. mutans* in India was pointed out[18]. Uilenberg replied that (i)

T. mutans did not occur out of Africa; (ii) *Haemaphysalis* ticks occurring in India might transmit *Theileria* of *sergenti/orientalis* groups and (iii) whether or not *T. mutans* occur in India would have to be settled by several criteria, especially serology using antigen and antisera of African *T. mutans* and Indian strains.

In conclusion, benign *Theileria* strains of Indian cattle and buffaloes are waiting to be examined to ascertain their identify.

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NEWS

Public peer review – An alternative to impact factors

The scientific community, like all cliques, has developed its own ways of maintaining structural and functional heirarchy. Surface effects (such as the volume of publication, citation indices, incorporation of new jargon) play a significant role, sometimes to the neglect of core issues (such as scientific merit or objectivity). Not surprisingly, this biases the news network such that only certain kinds of information keep appearing at periodic intervals. There are, of course, several outstanding research studies which do not fall into this category, but they are relatively small in number and frequency.

In a rapidly growing and evolving field such as Biology, is it not possible to have a more scientifically sound method of judging research?

A little more than two years ago, a collection of a thousand-odd biologists were recruited into a programme to do just this – and a new website was launched for the purpose. Titled 'Faculty of 1000', this project claims to be 'run by scientists for scientists'. The field is divided into sixteen subjects ('faculty'), each headed by two to four experts (a combination of established and promising scientists). Each subject is further divided into sections and papers are reviewed under the following general categories: novel finding, technical advance, interesting hypothesis, important confirmation and controversial findings. The first two categories list papers that demonstrate experimental or technical innovations within a field. The sections on 'interesting hypothesis' and 'controversial findings' deal with papers that are more speculative in nature while 'important confirmation' pertains to work that provides evidence towards a relevant hypothesis.

The papers are generally reviewed by more than one person and a score is assigned taking into account all the comments. The aim is to minimize the bias that may arise due to various reasons – profile of the author or journal, subjective views of the referee, etc. The papers are rated as 'Recommended' (for papers of specialized interest), 'Must Read' (those of general interest) and 'Exceptional' (the top 1% of publications). In addition, this site has a number of useful tools to customize searches and access interesting papers from lesser known journals. There is currently a 48 h free access to the service, however subsequent use requires a subscription.

It is of interest to view the range of papers that are recommended on this site. Noticeably, there are very few references from Indian groups. Admittedly, the site is a recent one and most publication references date back to about five years. However, this is an indication, if an indirect one, about the impact of Indian science at an international level. On the flip side, it is heartening to see that the few Indian references which this author could access include papers that attempt to resolve interesting and important questions or those that are genuinely innovative in nature.

This is a useful site for students, for obtaining information from a range of sources. It is also a useful aid for them at the time of selection of their research areas. It is a reminder of certain aspects of research often overlooked: the merit