with six 10-m telescopes, and the 'singles array', in which six 10-m telescopes would feed a central coude focus (see picture). The engineering problems of building a steerable telescope of 25-m diameter were felt to be serious; furthermore the large 'plate scale' (mm per arc s) makes the telescope incompatible with modern detectors. Simultaneous guiding of several smaller telescopes does not seem to be a problem; a suggestion to use accurate gyroscopes to achieve this was made.

Various siderostat telescopes were proposed which have a fixed telescope fed by a larger flat. A. Meinel (Optical Sciences Center, Arizona University) described one with a 45° flat and R. Bingham (Royal Greenwich Observatory) a neat alt–alt design. W. Richter (ESO) proposed a novel telescope which used a giant windmill, both to protect the undomed telescope from wind vibration and also to generate 300 kW of power! A continuing theme throughout the discussion, and emphasised particularly by E. Becklin (NASA, Hawaii) was the need to provide for adequate infrared capability.

At present, observing time on large telescopes is heavily oversubscribed. Disney has, for some years now, proposed incoherent arrays of telescopes in which information is collected by detectors and combined afterwards. He suggested a group of telescopes all identically instrumented which could either all point at one object or act independently. The availability of essentially noise-free detectors now makes this scheme very attractive from an astronomical point of view.

The importance of obtaining greater efficiency by improving the effective seeing disk size was not overlooked during the conference. One uncertainty concerning large ($\gtrsim$ 10-m) mirrors is whether temperature effects across the mirror would worsen the seeing. Meinel claimed this was already significant. For the proposed space telescope the 'seeing' disk will be about one-tenth that of a good ground-based site and it is this feature which allows it to go so faint. Interesting papers were given by F. Dyson (Princeton University) and J. Hardy (ITEK Corp., Lexington) on the use of active optics to compensate for seeing by deforming the telescope mirror itself or the wavefront near the focus. Hardy showed data from a 1.5-m telescope in which active optics had reduced the seeing disk by a factor of two or three. The technique is probably restricted to bright stars.

The remainder of the meeting was devoted to ground-based optical interferometric techniques for obtaining extremely high spatial resolution. Hanbury Brown (University of Sydney) gave a critical review of intensity versus Michelson interferometry and concluded that, although his intensity interferometer had achieved all its aims it was probably not competitive with a Michelson for faint objects. This is mainly because the bandwidth of a Michelson is so much greater than that of an intensity interferometer. A. Labeyrie (CERCA, St Vallier-de-Hiey) has made great progress in this area and showed pictures and results of his Michelson interferometer which uses two 25-cm telescopes separated by 20 m. He also described the construction of novel and cheap 1.5-m telescopes to be used in a much more ambitious set-up. C. Townes (University of California, Berkeley) described a heterodyning interferometer for use in the infrared. Several papers discussed various aspects of speckle interferometry which now appears to have become a standard technique.

A. Boksenberg (University College, London) gave a comprehensive and well-organised review of trends in detector development and some astronomical stories were related by J. Greenstein (Caltech). We were also treated to L. Goldberg's (Kitt Peak) visit to China and a tour of the 400 GeV accelerator, which rounded off an extremely successful conference.

Rift Valley fever

from Arie J. Zuckerman and David I. H. Simpson

RIFT Valley fever or enzootic hepatitis is a severe viral infection which primarily affects sheep and cattle causing many deaths in pregnant and newborn animals. The disease occurs naturally only in Africa and by 1912 it was recognised in the Rift Valley in Kenya. The infection is mosquito-borne and the virus, a member of the Bunyamwera group of arbovirus was isolated and identified in 1931. It was then also recognised that many infections occur in man, particularly by direct contact with sick animals or carcasses. Laboratory infections have also been reported. In 1950–51 an epidemic of the disease occurred in South Africa during which it is estimated that 20,000 persons became infected and 100,000 sheep and cattle died from the disease. Another severe epidemic occurred in the central regions in Southern Africa in 1975 (Van Velden *et al. S. Afr. med. J.* **51**, 867; 1977).

In October and November 1977 an outbreak of Rift Valley fever occurred for the first time in Egypt in the Nile delta. The number of human cases has been estimated at 10,000–20,000 with 70–80 deaths. In the areas most affected in the provinces of Sharqia Qalyub and Giza as many as 70% of the population were infected (*WHO Wkly. Epidem. Rec.* **53**, 1; 1978). The disease in man usually follows a transient febrile course with severe headache and bodily pains. Complications include haemorrhage, encephalitis and involvement of the eye with macular degeneration and temporary or permanent blindness. Haemorrhage generally indicates a poor prognosis and autopsy of cases revealed necrosis of the liver associated with haemorrhage, tubular necrosis of the kidneys, pulmonary congestion and haemorrhages in the stomach and colon.

Experimentally lambs are highly susceptible and may die from massive necrosis of the liver within 36 h of infection. Mice die with hepatitis within 3 days, and other laboratory rodents are readily infected. Monkeys develop a mild fever. The pathological lesions are principally those of massive hepatitis in lambs and focal lesions of the liver in older sheep. There is often damage to kidneys, and there may be haemorrhages in the intestines and elsewhere.

In the entomological investigations undertaken in the affected areas in the recent epidemic in Egypt virtually only *Culex pipiens* was found and indeed the virus was isolated from this species of mosquito. People using mosquito nets or otherwise avoiding exposure to mosquitoes at night were apparently not affected. As before, contact and slaughter of sick animals is considered to have caused at least some human cases. While it will be extremely difficult to establish the exact origin of the outbreak it may have resulted from the smuggling of camels (*WHO Wkly Epid. Rec. op. cit.*). This epidemic illustrates once more that viral infections know no boundaries.

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