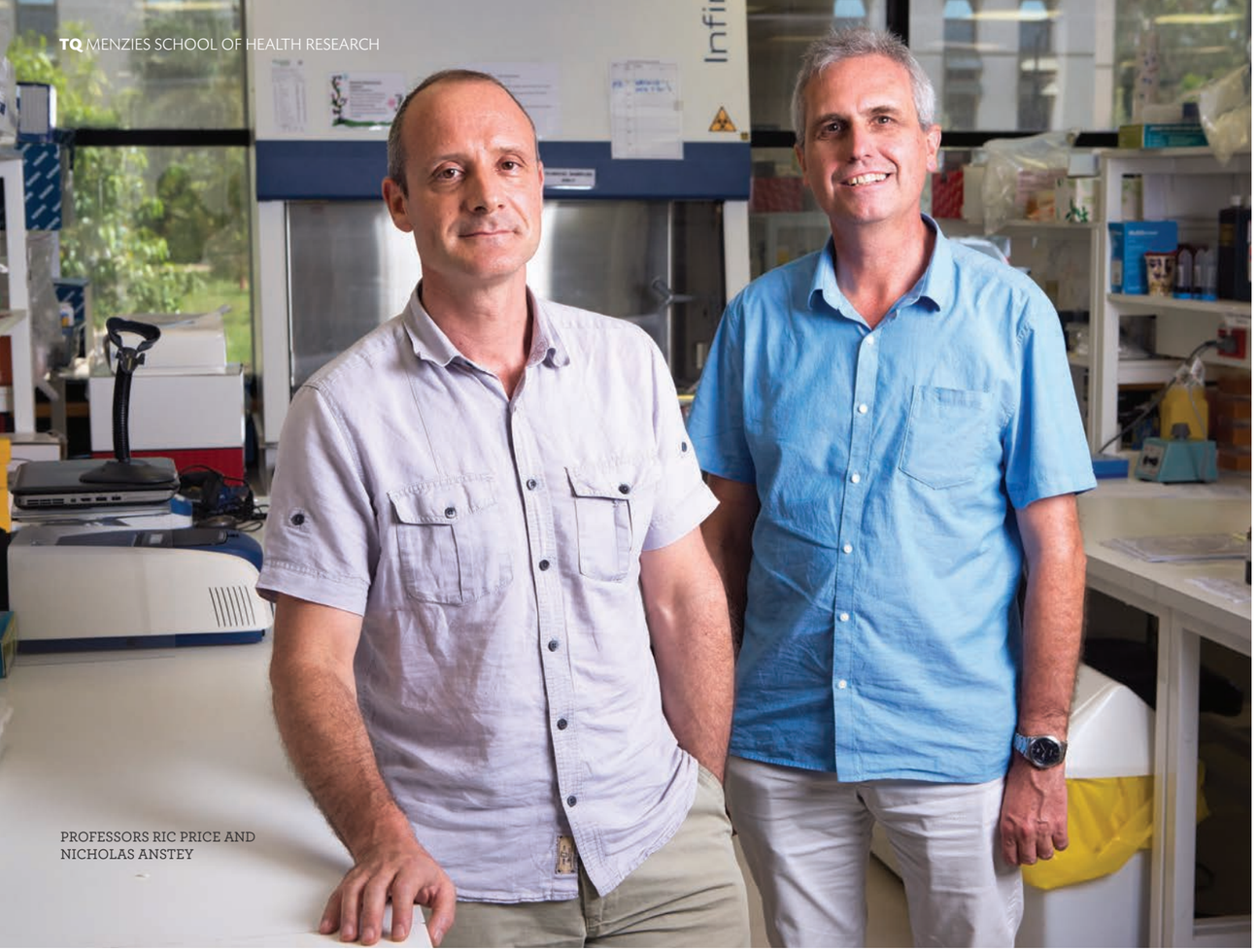

PROFESSORS RIC PRICE AND NICHOLAS ANSTEY

WAR ON MALARIA

WORDS: NIGEL ADLAM. PHOTOS: DAVID MAURICE SMITH AND KARA BURNS.

A medical team based in Darwin has put itself at the centre of the goal to eliminate malaria from the Asia-Pacific.

Malaria remains one of the biggest killers in the developing world; it affects nearly 200 million people each year and kills up to 600,000 of them. A disproportionate percentage of those who die are young children.

The war on malaria waged by the Menzies School of Health Research is being led by world-renowned infectious disease experts Nick Anstey and Ric Price.

They say history proves the goal is not overambitious.

After all, malaria has been conquered in more than 90 countries, including Australia, Europe and the United States. More recently there have been major reductions in the disease across the Asia-Pacific, with only a few hundred cases per year in China and none in Sri Lanka for the past three years.

"It can be beaten," says Professor Price.

Professor Anstey says malaria is a socio-economic disease, a disease of poverty affecting mainly people with poor access to early treatment.

Forty per cent of the world's population is at risk.

It takes up to 14 days for the parasite injected into the human bloodstream by a biting mosquito to cause fever.

Without treatment, the victim can be dead within 48 hours of the first "sweat".

Professor Price says Australians returning from overseas with malaria can get treatment immediately if they seek medical help. But for people living in, say, a remote village, the trek to the nearest clinic can take days and be too costly for some individuals. Untreated malaria often ends in death.

The Menzies team is working with partners in more than 19 countries from Ethiopia to Vanuatu, but its main field sites are partnerships with researchers in the Indonesia province of Papua and Malaysian state of Sabah.

Breakthroughs of world significance have already been achieved.

THE EYE-CATCHING WORK BY MENZIES AT HOME AND ABROAD **HAS ATTRACTED A LINE-UP OF STAR RESEARCHERS.**

For instance, professors Anstey and Price were part of a large multinational team that conducted a trial of artesunate, a drug derived from an ancient Chinese herbal remedy. They found that it was far more effective in treating severe malaria than quinine, which has been used widely since the 17th century.

Indonesia's Health Ministry promptly changed national policy on malaria treatment following the breakthrough. Australia was one of the first countries without malaria to stock up on artesunate with Royal Darwin Hospital leading the way.

The World Health Organisation has since ratified the policy for severe malaria, which is now being deployed across other malarious areas of Asia and Africa.

A worldwide policy shift has occurred.

Malaria causes a wide spectrum of illness. At the extreme end, patients are severely unwell and at risk of dying. Some patients are sick, but can take an oral treatment and still "walk home". Then there is a large group of infected people who have developed immunity and have few, if any, symptoms.

The Menzies team has shown that the severe disease from all of the different species causing malaria is best treated with intravenous artesunate, which reduces the risk of patients dying.

Patients who are less sick can take drugs orally. When artesunate is combined with conventional drugs the combination is highly effective and prevents patients from progressing to severe disease.

The work shows that with the correct treatment and determined control of mosquitoes, malaria can be defeated.

Results are impressive – about 1000 patients a week used to turn up for treatment at the clinic in Timika in Papua, Indonesia. This figure has almost halved since the new treatment policies were introduced, with the risk of death rate among infants falling by two thirds.

"Starting artesunate as soon as possible is the priority in severe disease," says Professor Anstey. "By understanding how the parasite causes disease, we are also working on developing other treatments to minimise damage to vital organs and reduce risk of death."

Not surprisingly, the work spearheaded by Menzies has caught the eye of health bodies throughout the world and has attracted funding from several sources, including the United States and UK.

There are five species of malaria affecting humans.

The most dangerous is falciparum, which blocks blood vessels. The other four are vivax, ovale, malariae and, most recently, knowlesi.

The Menzies team has helped reduce the rate of falciparum, but has seen a sharp rise in vivax, which has evolved from being considered only a "nuisance" to potentially lethal, mainly by causing severe anemia, especially in infants.

Professor Price is leading a team to research how to kill the parasite as it hides "asleep" in the human liver.

Other Menzies experts and former Royal Darwin Hospital doctors are doing groundbreaking work with Professor Anstey in Sabah.

Falciparum and vivax infection have been reduced in the Malaysia state, but the knowlesi parasite has "jumped" from macaques to humans and proved to be a particularly bad infection in humans.

Again, trials have shown that the artesunate drugs are more effective in destroying the knowlesi parasite than either quinine or chloroquine.

The eye-catching work by Menzies at home and abroad has attracted a line-up of star researchers.

For instance, Professor Anstey, the head of Menzies Global Health Division, this year is the inaugural winner of the Gustav Nossal Medal from the Australian Academy of Science.

The medal was recognition that his malaria research is of international significance.

Professor Price is a professor of global health at Menzies and a professor of tropical medicine at Oxford University's Centre of Tropical Medicine. He leads the clinical module of the WorldWide Antimalarial Resistance Network and the Vivax Working Group of the Asia-Pacific Elimination Network.

Both men acknowledge that their work relies on the dedication and skill of their Asia-Pacific partners and colleagues at Menzies – parasitologists, doctors and scientists, students and support staff.

They say that their mission in life may sound grand – eliminating one of the worst diseases on earth. But their motivation is simple enough: to save lives and reduce suffering. TQ

LEFT: PROJECT MANAGER FELICITY PEARCE WITH WEIPA DHUNBIRYUN, GALIWIN'KU

RIGHT: VENETTA NALORMAN, ALDRICK JAMES AND ALAN JAMES, MANINGRIDA