

## He's developed the world's fastest co

**T**HE eight-year-old boy sat in his family's lounge and stared at the small alarm clock his dad had put in front of him.

He was furious because his friends were playing soccer outside, and he had to sit here for the next three hours.

"Are you ready?" asked his father. "You have 60 minutes to answer the next 100 questions."

Young Philip Emeagwali nodded. He knew he had just 36 seconds to answer each question. It was not enough time to write the problems down, so he'd have to calculate them in his head.

Philip's father started firing questions at him. "Mohammed averaged 88 per cent in three mathematics tests. In the first test he got 92 per cent. In the second he got 94 per cent. What per cent did he get in the third test?" The little boy thought hard and answered fast.

For three long hours the questions came, and at the end of each hour Philip had answered another 100 questions – and he got most of them right.

James Emeagwali smiled proudly. He knew his son was no ordinary boy, and that in spite of his poverty he would grow up to become someone important. But he could never have imagined just how important Philip would become.

**TODAY** Philip Emeagwali, a computer scientist at the University of Michigan in America, is spoken of as "the Bill Gates of Africa" – and his personal worth has been estimated at \$200 million.

From a poor youngster in rural Nigeria he grew up to become what the American magazine *Michigan Today* described as "one of the world's fastest humans".

He won this recognition and America's most influential prize for computing genius – the Gordon Bell

Prize – for writing the formula that would enable a computer to make 3,1 billion calculations a second. The formula enabled the American oil industry to tap into huge reserves of underground oil, and contributed billions of dollars to the government's oil-exploration programmes.

In addition he has amassed university degrees in five different fields and his wealth has

enabled him to bring 18 relatives to America from Nigeria.

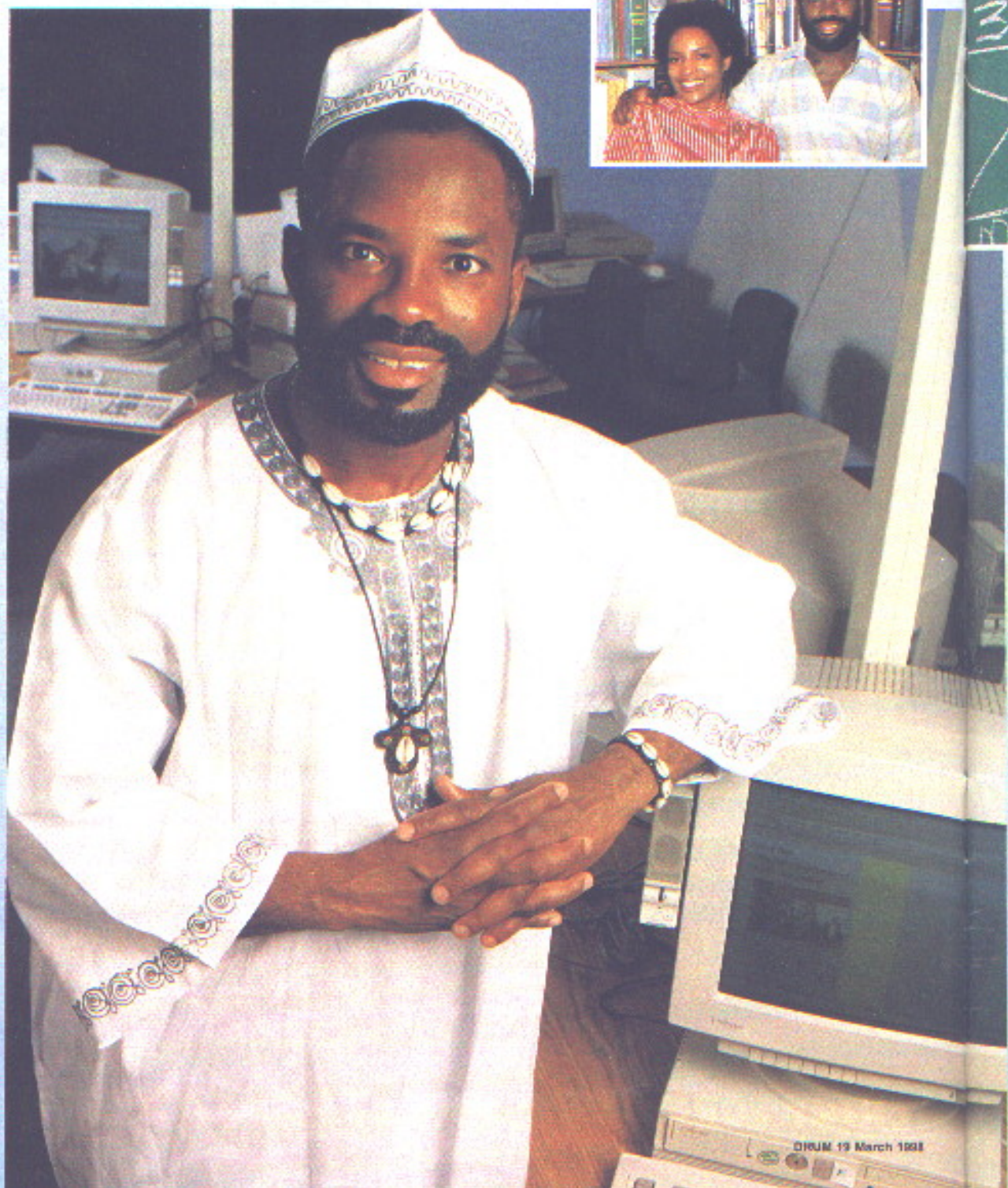
Philip grew up in the commercial city of Onitsha in south-eastern Nigeria, where his father was a nurse. At school he was so bright he was able to answer questions before his schoolfriends had even written the questions down.

Teachers and classmates, amazed at his extraordinary ability, called him

**MAIN PICTURE:** Philip Emeagwali with some of the computers he works with.

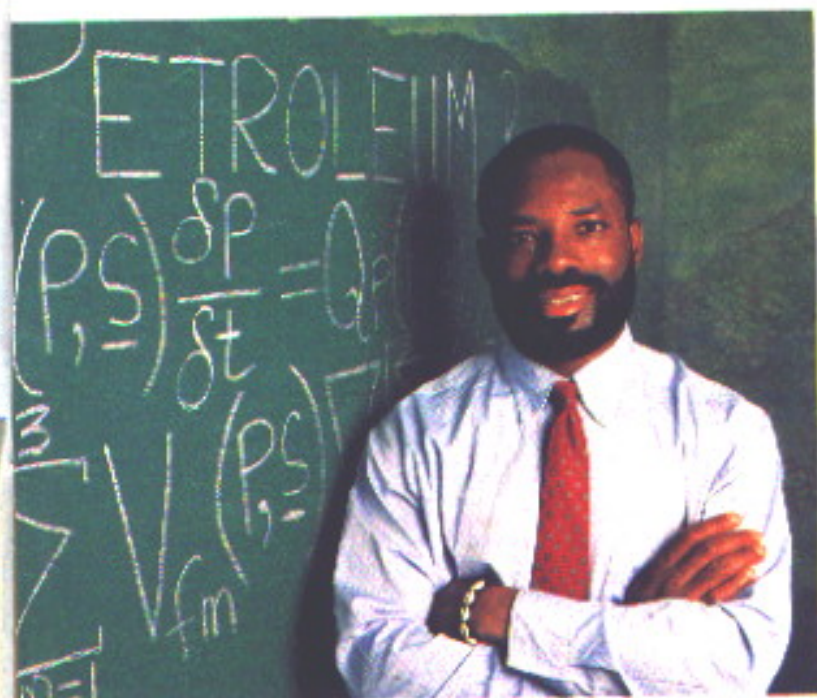
**INSET:** Philip with his wife, Dr Dale Emeagwali.

**RIGHT:** The mathematical formula Philip wrote which won him America's top award for computing genius.





## st computer – and that's just the beginning



grabbed the piece of chalk from the teacher's hand and wrote the answer on the blackboard.

"He could always challenge the instructor," says fellow classmate Peter Ozoh (43), a chemical engineer in America.

When he was in Standard 4 his headmaster let him teach mathematics classes whenever his teacher couldn't be there.

But there were times when Philip's genius worked against him. In 1965 at the age of 10 he was accused of cheating in a mathematics entrance examination to Saint George's Grammar

But back home his father continued teaching him. Eventually James Emeagwali had to stop because Philip knew more than he did. As a result the pre-teenager studied on his own to finish high school and to earn a General Certificate of Education from the University of London.

What makes Philip's achievements even more extraordinary is that his family had to flee Nigeria during a civil war.

"We slept in refugee camps, abandoned school buildings and bombed houses. We stood in long lines to receive food from charity organisations," says Philip.

"But the hardship of living in a refugee camp made me psychologically strong. It made me street smart. It equipped me with a greater sense of determination and vision."

At the age of 17 he won a scholarship to Oregon State University in America, where he studied maths. After that he went to George Washington University, where he was awarded two masters' degrees: one in civil and environmental engineering and another in ocean, coastal and marine engineering.

He was also awarded a master's degree in mathematics from the University of Maryland.

He has worked as a civil engineer in constructing traffic highways in Maryland and operating hydroelectric dams in Wyoming and today is a consultant in supercomputing, information technology and the Internet.

BEHIND Philip's success is a radical new computer he programmed to solve important problems. It's called the Connection Machine, and the reason it's being applauded worldwide is that it can work faster and do more work than any computer on Earth.

Philip got his idea for programming the Connection Machine by watching bees build their honeycombs. No other creatures on earth work more efficiently than a community of bees building a honeycomb, he thought. So why not program a computer that uses thousands

# Superbrain of Africa

By TIM O'HAGAN

Pictures: COURTESY OF PHILIP EMEAGWALI

**He left school in Standard 8 and lived with his family in a refugee camp. But Nigerian Philip Emeagwali is now regarded as one of the world's best scientific brains – a man who has won truckloads of awards and is worth a cool R200 million . . .**

"Calculus" because he was so good at calculating sums. But others were jealous and accused him of using magical powers in his mathematics examinations.

"Some of them didn't even know my real name," he laughs. "To this day, if I hear someone call me 'Calculus' I know without looking it's an old friend from home."

By the time Philip got to Standard 4 teachers and classmates considered him a

maths wizard who could solve advanced problems in geometry, trigonometry and algebra.

"My classmates would introduce me to their friends as a maths genius and my teachers spoke of me as the young Chike Obi – a mathematical genius who made a name for himself in Nigeria."

One day Philip's maths teacher stood at the front of the class, staring at the blackboard, unsure how to solve a difficult problem. Philip walked forward,

School in the Nigerian town of Obiaruku and denied admission.

The reason? He finished the one-hour examination in five minutes and scored 100 per cent, while the next highest score was 57 per cent. The school did not believe a 10-year-old was capable of such a feat. In spite of his genius for mathematics Philip had to leave school in Standard 8 because his father could no longer afford the school fees.

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