

(continued from previous page)

By some university regulation I could be admitted as a research student on my New Zealand degree, so on his suggestion I went for a research degree in astronomy. Eventually I noticed that there was an Isaac Newton Scholarship in Astronomy going begging. Two of us put in for it and both of us were given one. The other chap is now Professor W. M. H. Greaves, Astronomer Royal for Scotland, and Professor of Astronomy at the University of Edinburgh. He married my wife's sister.

Off to Philadelphia

"Well, after Cambridge it was time to think of getting something to do. I was appointed to a position in Swarthmore College near Philadelphia to do astronomical research. When I got there they asked me to do some teaching too, which I was willing to do at a little more salary. From there I went to Northwestern University in Chicago. I was ranked as an Assistant-Professor of Mathematics and Astronomy, but in a British country I would have been only a lecturer. All this time I was using two of the largest telescopes in America. Then again I was ready to come back to New Zealand, but I heard of a vacancy on the *Nautical Almanac* in England — Deputy Superintendent, with the expectation of succeeding to the Superintendent in 1930 if I proved satisfactory. I got the position. That was in 1925."

"Will you tell us what the *Nautical Almanac* is? Everybody knows its name, but what does it do?"

"Well, the *Nautical Almanac* is the sailor's Bible."

We interrupted here. With all reverence we pointed out that the comparison was not quite accurate. In respect to the material affairs of life a man could dispense with the Bible. We took it that a sailor could not do without the *Nautical Almanac*.

"That's quite right. The *Nautical Almanac* is indispensable to the sailor. It predicts the position of the sun, moon, planets and stars. There are two editions—a big one of about 1000 pages, and one of 200 odd pages. It's under the Admiralty, and in my time there there was a staff of 12. The big edition is used by all observatories, and astronomers of any standing, and is carried by large survey parties. It's the smaller one that is used by every ship."

"Is the *Almanac* used by other countries?"

"Yes, in this way: They supply us with a certain amount of information and we do the rest. The greater part of all *Almanacs* is our work, so we give a world service."

"Is the meridian of Greenwich still universally used as a starting point?"

"Rather. I used to walk across it every day going from my home at Blackheath to my office in the Royal Naval College, Greenwich. I believe Hitler had some idea of a meridian of his own, but it didn't come to anything."

Mechanised Mathematics

Dr. Comrie was Deputy-Superintendent for five years, and Superintendent from 1930 to 1936. He introduced a number of improvements including revolutionary methods of mechanical calculation. While he was still at Cambridge he founded the British Astronomical Association Computing Section and

compiled the first handbook, and later introduced computation as part of the curriculum of the two American universities with which he was connected. While he was at Greenwich, he found a new use for one of the commercial accounting machines which was taken up not only by the *Nautical Almanac* but by the British Association, the National Physical Laboratory, and the Ordnance Board. As a result of his special interest in this kind of work, and the number of requests for computations that came to the *Nautical Almanac* office, he decided in 1937 to set up for himself and founded Scientific Computing Service Ltd. At first this was a private venture but was soon turned into a limited company.

It is difficult to give laymen an idea of the sort of work that is done in this office, but Dr. Comrie furnished a few examples. The Royal Horticultural Society decided to move the whole of its very large set of glasshouses to another place. They wanted to know the answers to a number of questions before they re-erected the building, such as what pitch should they set the glass at. This involved the position of the sun. Dr. Comrie's office worked out the calculations on their machines, of which there are 40 of about 12 different kinds. But the most dramatic experiences occurred during the war. At 2 o'clock on the day that war was declared, the War Office asked whether Dr. Comrie could work out tables for the three types of anti-aircraft guns used in London. The Ordnance Board estimated that it would take one month to do each table. The Comrie office supplied two tables in 12 days. This included not only the actual working out of the tables on the machines, but printing, checking and binding. It's only fair to the Ordnance Board to say that they got the third table done in three weeks. Later on, six weeks before D Day the office was asked by the Americans for tables for the Norden bomb-sight. These were supplied in five weeks instead of the four months estimated by Washington. Among the other jobs done for the Government was map projection for the forces invading Holland and Belgium and Germany.

Girls Do the Work

We asked what sort of staff was employed to do these jobs. Dr. Comrie explained that he had a number of highly-qualified assistants, but the actual work on the machines was done by girls, who for admission had to have at least the Higher School Certificate in Mathematics. The girls are taught in the office in a series of lectures and practical classes.

"Take the American request for bomb-sight tables. I called the girls together and explained what was wanted, and they did the job quite easily."

We quoted the old Cambridge toast: "Here's to the higher mathematics; may they never be any use to anybody." What did Dr. Comrie think of that?

"Well, I deal in applied mathematics. There is a school of pure mathematics in Cambridge which looks down upon the use of calculating machines. They say that if one cannot solve a differential equation analytically there are numerical methods that low-down engineers and physicists use; but they would not sully their hands with them. However, I think there's something in the toast. I agree that all academic progress in mathematics is good. For one thing you never know when it will lead to something useful, like advances in other scientific fields."



THE "WALES"

fosters small business too

The idea that banks are mainly concerned with "big business" is mistaken. It is soundness, not size, that counts. Even the large companies banking with us mostly began in a small way and grew steadily with the wise use of bank advances.

This Bank has fostered the economic growth of New Zealand continuously for over 85 years. Innumerable New Zealanders have been glad of our help and proud to "bank at the 'Wales'".

There is a Branch of the Bank in your district — prepared to serve all types and sizes of business.

Consult and use—

BANK OF NEW SOUTH WALES

FIRST AND LARGEST COMMERCIAL BANK
IN THE SOUTH-WEST PACIFIC

HAS SERVED NEW ZEALAND FOR OVER 85 YEARS

NZ4065

OF GENERAL INTEREST

THE ATOM AND ITS ENERGY, Professor E.N. daC. Andrade, 15/6 posted. An eminent scientist lucidly explains atomic theory for the general reader, not as an overnight sensation, but as the outcome of an ordered body of investigation.

HAYDN: A CREATIVE LIFE IN MUSIC, Karl Geiringer, 32/- posted. An important modern presentation of Haydn's life and work, containing a detailed discussion of the composer's whole output, as well as much new biographical material.

SEALSKIN TROUSERS AND OTHER STORIES, Eric Linklater, 10/9 posted. Fantasy and fable intermingled in these tales of northern Europe, written with gentle humour and illustrated with delightful wood engravings.

THE BALLET-LOVER'S POCKET-BOOK, Kay Ambrose, 7/9 posted. A vade-mecum for ballet-goers, explaining in detail the intricacies of ballet technique with the aid of numerous line drawings.

WELLINGTON CO-OPERATIVE BOOK SOCIETY LIMITED.

MODERN BOOKS

48A MANNERS STREET,
WELLINGTON, C.I., N.Z.