RUTHERFORD AND THE ATOM

POETIC PORTRAYAL OF A SCIENTIFIC DISCOVERY

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THE whole structure of our everyday world is dependent on scientific knowledge, and this knowledge has profoundly influenced philosophy. It is therefore surprising that the romance of scientific discovery has received such slight attention from the poets[1].

A notable exception is the poem on Rutherford by Douglas Stewart[2] of some thirty-six verses. One of these tells of the young New Zealander's reaction when he learned of his appointment to Cambridge:

"I'll dig no more potatoes!" so he had vowed
That day the telegram from Cambridge came,
And dug no more indeed, nor milked nor ploughed
Except in the great seas of thought and fame;
So he stood now, Lord Rutherford of Nelson.

Another verse describes him engaged in his research:

Mostly too busy to think—too busy thinking.
But thinking was doing; there was such satisfaction
Watching those tiny comets darting and winking
It really left no time for speculation.
Thought would go outwards, expansion; his was a shrinking,
How to get mind and hand so small, that was the problem,
That in one final thrust of concentration
They would be able to move inside an atom.

Other verses link his scientific work with his father's craftsmanship and the New Zealand countryside:

That craftsman's hands still moving inside his own.
It was a haunted place, this tower of knowledge,
Calm with old books but wild with thoughts unknown,
All dark except for lamps like lights of courage
Where lonely scholars sought for truth in stone.
It shut the whole world out from a man and his work;
But while the white stars glittered above the college
A wheel moved somewhere far away in the dark—

That waterwheel of his father's lifted up
Water and sunlight in its wooden hands . . .
In long-lost Nelson wheels that his father had made,
And good wheels too, were serving the people still . . .

The universe turned and moved above him so vast,
Full of black space, the huge wheel slowly spinning,
He knew he stood with his specks of radiant dust
Not at the end of things but at the beginning.
What was he now but that small lump of a boy
Who made his own miniature wheel to splash in the water
Such ages ago; working all day in the joy
Of pure and bubbling creation, copying his father:

The social implications of atomic energy are described, together with the great fascination of the quest for discovery and achievement:

Take off his trappings and, naked, hungry and fierce,
All over the earth, in jungle or civilized city,
Men were but savages yet; God help the poor brutes,
For this new power, appalling to love and pity,
Was force that no savage yet had dreamed of wielding.
Then you could turn away, pack up and go home,
Dismantling the apparatus. He'd have his herd of Jerseys,
And up in the dawn to milk then, hitch up the cart,
Off to the factory to yarn with others of his type
(Looked like a farmer, always a farmer at heart,
Corpulent, bushy-moustached, smoking his pipe) . . .

But he had grown to like
This life of power where scientists met together
And felt they were priests and rulers. He liked to talk
With his great peers that language wrapped in mystery—
But he'd be plain if he could. No, it was rather
He liked the thought that what he touched was history.

Then the triumph of discovery and Rutherford's final belief that the essential goodness of the world would prevail:

He was so clumsy and blind, beyond all patience:
But out of the dark, from nowhere, flashed the conception
Like force in the atom and filled him with its radiance;
And steadily, patiently, always in the right direction
Despite his stumblings it moved in him in silence
Until at last what it wanted to do was done.
All things, it seemed, moved through time to perfection,
Through earth and wood and flesh, through the mind of man . . .

And when the old passions were roused and blood was spilt
What else could man do but stand against the marauder?
That was the thing that must change, this pattern of savaging.
For never had there been such a weapon since time began
And men who would stop at nothing might stop at fear . . .

And yet as he looked at the sky so dark with warning
Vast over earth and its towers, the night heaved over
Close and familiar as a waterwheel turning
And shed its stars like drops of crystal water
And radiant over the world lay the clear morning.
Men moved in darkness truly, but also in the sun
And on that huge bright wheel that turned for ever
He left his thought, for there was work to be done.

These extracts may give some idea of the poem, which provides a unique impression both of Rutherford and of scientific discovery.

Fitzgerald[3] has appraised the diverse literary work of Douglas Stewart, and his radio play, *Fire on the Snow*, which describes Scott's epic journey to the South Pole, is well known. Many of Stewart's poems do not have the same quality as *Rutherford*, but *Elegy for an Airman* (1940) shows the same feeling for the New Zealand countryside. Then, after arriving in Australia, Stewart achieved the feat of displaying the same powers of observation and visualization to capture the spirit of a harsh, dry landscape in his *Birdsville Track*[4].

Obviously, however, *Rutherford* goes far beyond these poems, as it combines Stewart's feeling for the countryside, his father's craftsmanship and the life of a peaceful agricultural community, with a dramatic portrayal of the greatest scientific discovery of the age. He also shows a fine appreciation of the social implications and finally expresses his faith in human survival.

Fitzgerald describes the poem as "a towering concept . . . as a work of art it is a masterly piece of design and integration".

Rutherford obviously has a special appeal to scientists, and I feel sure that it will remain memorable as a major attempt at the poetic portrayal of a scientific discovery.

[1] *Times Literary Supplement*, 153 (March 1, 1963).
[2] *Rutherford and Other Poems* (Angus and Robertson, Sydney, 1962). *Rutherford* was first published in *Quadrant*, **14**, 30 (Sydney, 1960).
[3] Fitzgerald, R. D., *The Elements of Poetry; Motif in the Work of Douglas Stewart* (Univ. Queensland Press, 1963).
[4] *The Birdsville Track, and other Poems*, 29 (Angus and Robertson, Sydney, 1955). *The Birdsville Track* was first published in *The Bulletin*, 18 (October 22, 1952).

Although many will agree with Prof. Francis that scientific discovery has received but slight attention from the poets, on the other hand there have been, and still are, men of science who were or are also good poets. One need only mention the late Sir Ronald Ross and the late Sir Charles Sherrington and Prof. E. N. da C. Andrade,