the exacting physiological training where they carried out the same programme as the men—work-outs on the running track, centrifuging in three planes at once on the giant centrifuge, endurance tests in the heat chamber and the “silence chamber”—the girls deviated in response in only two particulars. In adapting to the “complex irritant” of weightlessness the women did much better than the men. “Contrary to expectations, they adapted much faster. . . .” Tests of the effects of prolonged sensory deprivation in the “silence chamber” indicated that women are no more emotional or psychologically unstable than men, comments Mrs Tereshkova-Nikolayeva. No systematic difference was discernible.

The dynamical stresses induced at take-off and landing on the woman's complex reproductive system was the subject of major concern. “Stresses have the worst effect on a woman around the time of ovulation . . .” has been the conclusion. “In orbital flights and space flights outside the influence of Earth's gravity, the phase of the menstrual cycle has no substantial importance.”

Despite her physiological differences, a woman can stand all the conditions of space flight as well as a man, concludes Mrs Tereshkova-Nikolayeva. Her flight proved it, she considers. It was originally scheduled for 1 day, with an understanding that it might be prolonged if she stood up well to it. She remained up for the maximum period (3 days).

Why have there been no further flights by women? “My flight in 1963 was useful because it graphically proved women's potentialities in the new and sensational field of space exploration. However, the testing period has been replaced by the clearly defined working period . . . (in which) it is hardly expedient to form mixed crews because this would involve extra problems which . . . do not justify themselves . . . where every centimetre and every kilogramme must be used to the maximum. When orbiting space stations with broad functions are put up, then women will be members of the crew.” Still later, space exploration “will be impossible without women taking part”. Judging from recent pronouncements, the head of NASA, Dr Thomas O. Paine, thinks so too.

AUSTRALIA

What is a Scientist Worth?

from a Correspondent

RESEARCH scientists in Australia are having their salaries assessed by the Commonwealth Arbitration Commission. Claims for substantial salary increases for some of the country's leading research scientists were lodged three years ago by staff associations representing the Commonwealth Scientific and Industrial Research Organization (CSIRO), the Australian Atomic Energy Commission (AAEC), and the Australian Defence Scientific Service (ADSS), the three largest government research agencies.

The case is arousing widespread interest in industrial laboratories in Australia and among university staff because the salaries paid to each of these groups tend to follow those of government scientists. The triennial review by the Federal Government of university salaries later this year will certainly be influenced by the decision in the present case.

Early in February a Deputy Public Service Arbitrator granted small increases ranging from \$A100 a year (\$A1 = £0.47) or 0.8 per cent for senior principal research scientists to \$A607 (3.5 per cent) for chiefs of divisions, Grade 4, in the CSIRO and AAEC, after a two year court investigation of their “work value”. Lower grades of research scientists, nearly all of whom are PhDs, received no increase on existing salaries (minimum \$A6,139) set by the Commonwealth Public Service Board. Similar treatment was meted out last November to professional engineers when the Arbitration Commission confirmed rates being currently paid by the Public Service Board.

The decision sparked off a virulent reaction among the 2,000 normally quiescent scientists who added their voices to the swell of criticism of the arbitration system and its recent wage decisions by trade unions and engineering associations. Discontent was heightened when, in the following week, another arbitration tribunal, after representations by the militant Australian Federation of Airline Pilots, granted salary increases of 23.9 per cent to jet aircraft captains in Australia's overseas airline. These pilots were guaranteed a minimum salary of \$A18,738 a year, which is over \$A800 more than the highest paid government research scientists. The pilots' maximum pay could be up to \$A4,000 a year higher.

Because of their concern about the detrimental effects of the Deputy Arbitrator's decision on Australia's position in the world-wide market for top quality scientists and research leaders, the scientists' associations have appealed against the judgment to the Full Bench of the Arbitration Commission.

A novel feature of the work value claim before the deputy public service arbitrator was the commissioning by the CSIRO Officers' Association of a job evaluation survey of the research staff of CSIRO by the business management consultants, Hay-MSA Ltd, an Australian offshoot of the Hay Organization of Philadelphia.

Although job evaluation is well established as a salary-administration tool in some of the major US scientific laboratories and has been strongly recommended by the Royal Commission into the UK Civil Service (the Fulton Report), the concept is still relatively new in Australia and is regarded with some wariness. The scientists' bold plunge in allowing themselves and their work to be “measured”—just how does one assess the monetary value of such factors as creativity and scientific insight?—from a business management approach was apparently too radical for the deputy arbitrator, who disregarded the Hay-MSA findings. The consultant firm rated the value of chiefs of division, Grade 4, at around \$22,000 a year on the 1968 Australian business and industrial market. This is more than \$4,000 higher than the deputy arbitrator's figure, which was based on what he described as “an overall act of judgment”. The recommended figure becomes about 12 per cent higher than \$22,000 when allowance is made for the average increase in industrial salaries in the two years since 1968.

The research scientists, industrial scientific firms, and university staff associations (who have been investigating the possibility of a similar job evaluation study of academics) are all watching with interest to see what the Appeal Bench of the Arbitration Commission will do about scientists' job ratings and salaries.