ine, while stimulation of the hypothalamus results in a variable ratio of noradrenaline to adrenaline that depends on the location of the stimulus. The implication that there are specific centers in the brain for the release of adrenaline or noradrenaline from the adrenal medulla raises the question of their function.

Chapter 12 is an account of the urinary excretion of noradrenaline and adrenaline normally and during various diseases and physiological situations. Tumors of adrenal medullary tissue and the evidence that the main pressor substance in the chromaffin cells of these tumors is noradrenaline are described in chapter 13.

Of particular interest to the physician and to investigators in cardiovascular research is the last chapter, which describes the therapeutic implications of the ability of noradrenaline to raise blood pressure without materially increasing the cardiac output. Many potential uses, including the support of blood pressure in certain types of shock and in operative and postoperative hypotension, are cited.

The difficult task of bringing together a huge mass of scattered data has been superbly accomplished, and the result is a book that is simply and interestingly written. The unsolved problems in the field are clearly and provocatively defined, and the plethora of suggestions for future research will be appreciated by young investigators. It cannot fail to be of interest to the biochemist concerned with the biochemistry of function, and it is virtually indispensable to the physiologist and pharmacologist working on fundamental mechanisms of the autonomic nervous system and to the physician who is curious how drugs interact with the nervous system.

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The Changing Universe. The story of the new astronomy. John Pfeiffer. Random House, New York, 1956. 243 pp. Illus. $4.75.

This is the first popular-level book on radio astronomy, and it is a good one. In fact, it is very good. The author has taken unusual pains to become thoroughly conversant with this new science, aided by two successive Guggenheim Fellowships. He has visited many of the radio astronomers in England, Netherlands, France, Canada, and the United States. He has used every available opportunity to talk with Australians visiting this country and has corresponded extensively with most of the others. In one way or another, he has been in contact with nearly 100 scientists working in this field.

Pfeiffer begins by telling the story of Karl Jansky's discovery of "cosmic static" in 1931 at the age of 26, and of his failure to secure support for continued pure research at Bell Laboratories. "Rarely in the history of science has a pioneer stopped his work completely, at the very point where it was beginning to get exciting. Yet Jansky did just that . . ." Industry has developed a more enlightened attitude toward pure research during the past 25 years, but this has not prevented us from lagging far behind other countries in the development of radio astronomy. It is noteworthy that the first large research facility to be supported by the National Science Foundation, and with specific Congressional approval, is a Radio Astronomy Observatory to be located near Green Bank, West Virginia.

The book continues with Grote Reber's pioneer researches, all paid for out of his own pocket and done on his own time. In 1937 Reber built in his backyard a radio telescope 31 feet 5 inches in diameter, and in October 1938 he made his first successful observations. He confirmed Jansky's discovery of the Sagittarius source, and he also found other sources in Cygnus, Cassiopeia, and elsewhere. He also found that radio waves are not coming from the brightest stars one can see in the sky. "The implication of this notion is sensational. It means that the universe contains things never before observed. There are unique objects in the radio skies, objects whose light—if any—is too faint to see and which we can know only through their radio waves."

Wartime developments in radar and electronics have been helpful in accelerating the advance of radio astronomy. Reber tried to detect radar signals reflected from the moon, but without success. Signal Corps engineers did this with ease after World War II, using more advanced equipment.

The remainder of the book describes results from all branches of radio astronomy: solar, planetary, meteor, galactic, extragalactic, and the radio sextant. The concluding chapter, entitled "The future," describes some of the equipment now in the planning stages and ends with a discussion of the cosmologic problems that may be solved with the aid of radio astronomy.

The drawings of Sol Ehrlich add much to the attractiveness of the book. However, an old-fashioned optical astronomer, such as I am, cannot accept the implication of the drawing on page 220, which shows the Palomar Observatory draped with cobwebs. The apparent division between radio astronomy and optical astronomy is an artificial division due to technology, and it is all just plain unmodified *astronomy* as far as the basic problems and goals are concerned. A more likely picture would show two Palomar Observatories working twice as hard trying to keep up with the new problems being brought in by radio astronomy.

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New Lives for Old. Cultural transformation—Manus, 1928–1953. Margaret Mead. Morrow, New York, 1956. 548 pp. Plates, $6.75.

"The mid-twentieth century is an emergency for humankind . . . . Peasant, feudal, and primitive economies [are] crumbling before the onset of new ideas and new technologies. Traditional faith and traditional practice [are] disappearing. What [is] happening to those who [are] asked to skip centuries in the way they ordered their lives? How [do] these rapid changes inevitably involve those individuals who [live] through them in disturbances of personality which would leave their mark on society for many generations to come?" Accepting the challenge of these facts and questions, Margaret Mead decided that ". . . the most pressing problem, in the range of problems which anthropology was equipped to attack, seemed . . . to be how change occurred within a single generation." And so deciding, she spent 7 months living with "a people who have moved faster than any people of whom we have records, a people who have moved in fifty years from darkest savagery to the twentieth century, men who have skipped over thousands of years of history in just the last twenty-five years" —the Manus.

This was not her first experience with this small group of Melanesians; 26 years before, she had lived with them and consequently had written *Growing Up in New Guinea,* a standard reference for social scientists in particular and for a startlingly large lay audience in general. It was indeed a felicitous circumstance that such a careful scientist and lucid writer should have been an intimate observer of this profoundly important human "quantum jump" both before and after its occurrence.

And what has been this change? "Today they are friendly, where formerly they would have been harshly competitive; they are actively concerned with the prevention of types of behavior which they would formerly have regarded as natural and desirable; they are relaxed and unworried where they would formerly have been tense; they are rearing their children with a kind of indulgence