

missioner of Tennessee, is chairman of this committee.

The committee recommended a Congressional act to authorize the transfer to the U. S. Public Health Service of the functions, personnel and appropriations for support of the Division of Vital Statistics of the Bureau of the Census, and of the health activities of the Divisions of Child Hygiene and of Maternity and Infancy of the Children's Bureau.

President Hoover said before the Conference:

"If we could have but one generation of properly born, trained, educated and healthy children, a thousand other problems of government would vanish," he said. "We would assure ourselves of healthier minds in more vigorous bodies, to direct the energies of our Nation to yet greater heights of achievement."

*Science News Letter, November 29, 1930*

RADIO

## Million Watt Broadcaster Seen As Next Step in Radio

**B**ROADCASTING stations with a power of a million watts, twenty times as powerful as the fifty kilowatt stations that are now the largest, are the next step in radio. This is the opinion O. H. Caldwell, editor of *Electronics* and *Radio Retailing*, and former Federal Radio Commissioner, expressed in Philadelphia in addressing the Institute of Radio Engineers.

"Such higher powers are coming," he said. "Already experimentation has been successfully carried out with 250,000 watts, and now a 400,000-watt experimental station is under construction and will soon be ready for test. And this is not the end. The next step ahead will be the 'million-watt broadcaster'—the 1,000-kilowatt unit. One thousand kilowatts, or thirteen hundred horsepower, does not seem like a prodigious amount of power in ordinary everyday life. Among engineers today such powers are quite commonplace. Soon, indeed, such 'million-watt' broadcasting plants will be a regular thing. Already we have single radio tubes capable of delivering 200,000 watts, so it is not a far cry to grouping together the necessary number to develop 1,000,000 watts."

Such high power stations are needed to give adequate service to all parts of the country, he said.

"We cannot depend upon little 500-watt broadcasting stations that use barely as much power as the electric toaster on one's breakfast table to render radio service over more than a few miles' radius," he continued. "And, since we can satisfactorily operate only three such 500-watt stations on the same wavelength in the entire United States without mutual interference, it is evi-

dent that any wavelength carrying such a group of little stations is a wavelength virtually wasted."

"But as power is increased on any such wavelength, the radio waves reach out and rise above static, interference and electrical noises, and so serve increasing millions of population. A 50,000-watt station, centrally located, will on good winter nights lay down a fair signal in nearly every state from the Rockies to the Atlantic. Higher power in the same position would serve even more people, and serve them more clearly and better."

*Science News Letter, November 29, 1930*

ASTRONOMY

## Meteor Display This Month Arouses Hope for Big Shower

**H**OPES of astronomers for a brilliant shower of shooting stars, or meteors, of the Leonid group, in November in the next few years, are aroused by reports of an unusually good display this month. (See *SCIENCE NEWS LETTER*, November 8, 1930, page 294). Unfortunately, widespread cloudy weather around the time of the maximum display, November 15 and 16, prevented extensive observations.

Dr. C. C. Wylie, professor of astronomy at the University of Iowa, reported to Science Service that he observed unusually large numbers of Leonids November 17. Watching at Iowa City from midnight to dawn, Professor Wylie saw Leonid meteors at



### WORLD'S BIGGEST RADIO TUBE

*This giant 200,000 watt broadcasting tube was built for the new Westinghouse station KDKA, and has its grid water cooled as well as its plate water. Five tons of cooling water are required hourly. O. H. Caldwell, former Federal Radio Commissioner, who urges higher powers to overcome static and bring radio to more people living far from the cities, is standing.*

the rate of a hundred and twenty an hour at one time.

About fifteen reports from volunteer observers had reached Prof. Charles P. Olivier, director of the Flower Observatory of the University of Pennsylvania and leading meteor authority.

"It is clear now," said Dr. Olivier to Science Service, "that the maximum for the United States occurred on the early morning of November 17, hence a day later than expected. The hourly rate of the meteors was at least two or three times what we expected, and many of the meteors were fireballs with long enduring trains."

It appears that the display this year was the best since 1901.

*Science News Letter, November 29, 1930*