

We have no data as to the effects of rolling and pitching, but excessive vibration at high speed apparently produced no bad effect on the instruments, and we believe the working of the system would be very little affected by the motion of the ship. The accuracy is good within the working ranges. Cipher and important signals may be repeated back to the sending station, if necessary, to insure absolute accuracy. When ships are close together (less than 400 yards) adjustments easily made of the instruments are necessary. The greatest distance that messages were exchanged with the station at Navesink was 16.5 miles. This distance was exceeded considerably during the yacht races, when a more efficient set of instruments was installed there. The best location of instruments would be below, well protected, in easy communication with the commanding officer. The spark of the sending coil or of a considerable leak, due to faulty insulation of the sending wire, would be sufficient to ignite an inflammable mixture of gas or other easily lighted matter, but with the direct lead (through air space, if possible) and the high insulation necessary for good work, no danger of fire need be apprehended.

When two transmitters are sending at the same time, all the receiving wires within range receive the impulses from transmitters, and the tapes, although unreadable, show unmistakably that such double sending is taking place. In every case, under a great number of varied conditions, the attempted interference was complete. Mr. Marconi, although he stated to the Board before these attempts were made that he could prevent interference, never explained how nor made any attempt to demonstrate that it could be done. Between large ships (heights of masts 130 and 140 feet) and a torpedo boat (height of mast 45 feet), across open water, signals can be read up to seven miles on the torpedo boat and eighty-five miles on the ship. Communication might be interrupted altogether when tall buildings of iron framing intervene. The rapidity is not greater than twelve words per minute for skilled operators. The shock from the sending coil of wire may be quite severe and even dangerous to a person with a weak heart. No fatal accidents have been re-

corded. The liability to accident from lightning has not been ascertained. The sending apparatus and wire would injuriously affect the compass if placed near it. The exact distance is not known and should be determined by experiment. The system is adapted for use on all vessels of the navy, including torpedo boats and small vessels, as patrols, scouts and despatch boats, but it is impracticable in a small boat. For landing parties the only feasible method of use would be to erect a pole on shore and then communicate with the ship. The system could be adapted to the telegraphic determination of differences of longitude in surveying. The Board respectfully recommends that the system be given a trial in the navy.

SCIENTIFIC NOTES AND NEWS.

WE record with much regret the death of Dr. Elliott Coues, the eminent naturalist, on December 25th, in his 57th year.

A MEMORIAL meeting in honor of the late Daniel G. Brinton will be held in Philadelphia on January 16th, under the auspices of the American Philosophical Society, and with the coöperation of some twenty-four societies. A portrait of Dr. Brinton, a memorial medal and a set of his works will be presented to the Philosophical Society.

PROFESSOR E. B. WILSON, of Columbia University, has been elected president of the American Society of Naturalists, in succession to Professor W. G. Farlow, of Harvard University.

DR. WILLIAM MCMURTRIE, of New York City, has been elected president of the American Chemical Society, in succession to Professor Edward W. Morley.

THE New Year's honors annually conferred in Great Britain include a peerage for Sir John Lubbock, a knighthood for Dr. T. Lauder Brunton, the physiologist, and a K. C. B. for Captain W. de W. Abney, the physicist, assistant Secretary of the Science and Art Department.

A MOVEMENT has been started in Baltimore to pay some special tribute to President Daniel Coit Gilman of Johns Hopkins University, in

honor of the twenty-fifth anniversary of his connection with the University, which occurred on December 31st.

PROFESSOR C. H. EIGENMANN, director of the Indiana University Biological Station, since its establishment, has severed his connection with the Station, and Dr. R. E. Lyons, professor of chemistry, has been appointed as his successor.

PROFESSOR R. W. WOOD of the University of Wisconsin, has accepted an invitation to lecture before the Royal Photographic Society, London, and will leave New York early in January to be absent about six weeks.

PROFESSOR WILLIAM JAMES, of Harvard University, and Professor G. T. Ladd, of Yale University, have been elected delegates from the American Psychological Association to the International Congress of Psychology meeting next year at Paris.

DR. J. W. GREGORY, of the Natural History Museum, South Kensington, has been appointed to the chair of geology in the University of Melbourne, vacant by the death of Sir. J. M'Coy. It is an open secret that Dr. Gregory applied for the post because the trustees of the British Museum refused to recommend him for the position of a first-class assistant, while they at the same time checked the flow of promotion by retaining Henry Woodward as head of the Geological Section of the Museum after the time for his retirement under the age limit. Dr. Gregory will receive four times the salary at Melbourne that he has been receiving at the British Museum, and will have excellent opportunities for research in Victoria. It appears, however, that the trustees of the British Museum have made a serious mistake in refusing to promote from a second-class assistantship a naturalist whose work as explorer and scientific investigator has already won him distinction, and whose services to the Museum during the past twelve years have been most important.

MR. JAMES LYMAN WHITNEY, who for over thirty years has been connected with the Boston Public Library, has been elected librarian in the place made vacant by the removal of Mr. Herbert Putnam to the National Library, Washington. Mr. Whitney is a brother of the late Josiah D. Whitney, professor of geology at

Harvard University, and of the late William Dwight Whitney, of Yale University.

A CABLEGRAM from London announces the death of Sir James Paget, the distinguished surgeon. He was born at Great Yarmouth, January 11, 1814, being the son of a merchant of that city. In 1836 he became a member of the Royal College of Surgeons, and seven years later, after he had made a reputation by some novel and brilliant operations, he was made an Honorary Fellow of the Institution. Among his works are the 'Pathological Catalogue of the Museum of the College of Surgeons,' 'Report of the Results of the Use of the Microscope,' published in 1842, and 'Lectures on Surgical Pathology,' published in 1853, 1863 and 1868. He was also an extensive contributor to the 'Transactions' of the Royal Society, of which he was a Fellow. In 1875 he was elected President of the Royal College of Surgeons, and from 1884 to 1895 he was Vice-Chancellor of the University of London. He was created a Baronet in August, 1871.

THE following have been elected officers of the Society for Plant Morphology and Physiology for the coming year: *President*, Dr. D. P. Penhallow, McGill University, Montreal; *First Vice-President*, Dr. Roland Thaxter, Harvard; *Second Vice-President*, Dr. Erwin F. Smith, Washington, D. C.; *Secretary*, Dr. W. F. Ganong, Northampton, Mass.

THE officers of the American Psychological Association for the ensuing year are: *President*, Professor Joseph Jastrow of the University of Wisconsin; *Secretary*, Dr. Livingston Farrand of Columbia University; *Council*, Professors Ladd, Bryan, Gardiner, Cattell, Delabarre and Kirschmann.

THE members of the American Society of Naturalists voted to invite the members of the American Society, at present in session at Chicago, to constitute the Western branch of the American Society of Naturalists.

THE Society of Gymnasium directors, which met in New Haven last week, will hereafter be affiliated with the societies meeting with the Naturalists. The question of uniting with the Anthropological Section of the American Association was referred to a committee.

A JOINT meeting of the Philadelphia County Medical Society, and the Pennsylvania Society for the Prevention of Tuberculosis will be held at the New Century Club on Wednesday, January 10th. Prominent speakers, both medical and lay, will take part in the discussion. Among the speakers are Dr. Otis, of Boston, Dr. Osler, of Baltimore, and Judge Ashman, of Philadelphia.

THE post of assistant physician in the government Hospital for the Insane with a salary of \$1200 will be filled by Civil Service examination on February 6th and 7th.

THE Göttingen Academy of Sciences offers a prize of 1000 Marks for a mathematical paper to be submitted before the first of February 1901. The details can be obtained by addressing the Secretary.

THE world at large, and even many of those who are interested in the history of mechanical engineering, says the *Scientific American*, do not know that the body of the great engineer, Robert Fulton, lies in Trinity churchyard in New York City, being interred in the Livingston family vault. There is no mark or inscription to indicate its resting place. In view of the epoch making character of the work of Fulton, and of his eminence as an engineer, and of his indomitable perseverance in the development of steam navigation in the face of the greatest obstacles, it has been deemed desirable that his tomb should be marked by a suitable monument. The Council of the American Society of Mechanical Engineers had the matter brought to its attention at the Washington meeting last May. The idea was warmly welcomed, and a committee was appointed to investigate the proper method of accomplishing the suitable marking of the grave. The committee has found its efforts heartily met both by the Trinity corporation and by members of the Fulton family. The Society has been assured that a suitable place will be provided in Trinity churchyard for such a monument as may be erected, and that the remains of Fulton will be removed to such a place when the monument is ready. The Society possesses a number of memorials of Robert Fulton, including furniture, his portrait by his own hand, draw-

ings, autograph letters, and other personal relics. Indeed, it may be said that the Society is Fulton's literary heir. In view of this fact, the action of the Society is most dignified and fitting. A subscription is now being raised by it, and there is little question but that sufficient funds will be obtained to erect a most admirable memorial to mark the place where lies the body of one of the earliest and greatest of American engineers.

It is poetic justice that Fulton should continue to rest in the spot where he was interred. At the front of the quaint old burying ground run the cable cars, at the rear the electric cars and the elevated road, and at the foot of Rector Street, the other boundary, two of the fastest vessels on the bay make their landings. Almost across the street is one of the tallest buildings which has ever been erected, and Wall Street commences directly in front of the burying ground. What more fitting spot could be obtained for the resting place of one whose activities contributed in so large a degree to the progress which is so much in evidence immediately around the historic old church?

UNIVERSITY AND EDUCATIONAL NEWS.

THE University of Pennsylvania has received a gift of \$250,000 from the estate of the late H. H. Houston, formerly a trustee and a generous benefactor of the University. Fifty thousand dollars is to be used for the dormitory system; the remaining \$200,000 for such purposes as the trustees may desire.

PLANS have been filed for a new building for the Horace Mann School, the model school of Teachers College, Columbia University. The estimated cost is \$350,000; the building will occupy the block on Broadway between 120th and 121st Street, adjoining the College.

O. H. INGHAM, of La Crosse, Wis., has given \$15,000 toward the building of a new school of science for Ripon (Wis.) College.

THE new laboratories for bacteriology and pathological research at Mason University College, Birmingham, were opened on Wednesday, December 6th. Dr. E. Rickards gave £1,000 toward the equipment.