

this purpose, it is well to connect it with some form (preferably that known as E. P. S.) of storage battery or accumulator. The chlorine is disengaged very simply from hydrochloric acid and manganese, and a necessary part of the apparatus is a small gas-holder, conveniently constructed of drain-pipes covered with pitch. All the gas apparatus is worked on the displacement principle, chlorine being nearly  $2\frac{1}{2}$  times as heavy as air. The apparatus necessary to establish a small installation of 15 to 18 ten-candle power lamps costs about \$250. The commonest sheet zinc may be used, and the corrosive action is very slow, and remarkably regular.

At a recent conference at the Colonial exhibition, a paper was read by Mr. Sievwright on Colonial telegraphs, in which warm tributes were paid to the early labors, 1<sup>o</sup>, of Dr. (now Sir Wm.) O'Shaughnessy in India, who in 1839 and following years carried out experiments on the transmission of telegraphic signals by 'galvanism;' and 2<sup>o</sup>, of Mr. T. R. Crampton, the engineer who in 1851 laid the first submarine cable across the English Channel, and whose pluck and energy found, in addition, nearly the whole of the money necessary for the undertaking. Mr. Crampton was present, and made an interesting speech in the discussion which followed, in the course of which, also, the need of a submarine cable from the Atlantic to the Australian continent was alluded to.

The newly organized gunpowder factory at Chilworth was recently inspected by a party of scientific men, where, under Herr Hiedemann's direction, the new brown or 'cocoa' powder is being produced. Wood charcoal is replaced by another form, and the proportions of sulphur and nitre have been so changed that but little smoke is produced. Except in a gun-chamber, the firing of the powder is very slow, and a new departure in the history of artillery has taken place.

Dr. C. R. Drysdale, senior physician of the Metropolitan free hospital, is one of the most recent distinguished converts to Pasteurism. Having visited Paris, and investigated 740 cases treated in the Rue Vauquelin, in which there was no doubt of the madness of the dog, he gives the death-rate as 0.75 per cent, while under other treatments, the death-rate is 16 per cent. Hence he considers that the value of M. Pasteur's treatment is 25 times as great as that of all the other treatments.

The use of petroleum as fuel was the subject of a paper by Colonel Stewart at the United service institution recently, and a warm discussion followed. The Russians have now applied liquid fuel in various ways to 200 steamers, 700 or 800

locomotives, and probably 1,000 stationary engines. In England the use of liquid fuel is still only in an experimental stage, whereas in Russia the labors of Urquhart, Lentz, and other sound practical engineers, have made it as familiar as constant practice can make anything. A suggestion was made that English ship-owners should send one of their staff to Baku to examine the various systems in use. Two pioneer steamers are now being fitted out on this principle in West Hartlepool, one of which, the *Glückauf*, is to be engaged in carrying oil from the United States. She is of steel, to carry 3,000 tons dead weight, fitted with triple-expansion engines, with cylinders of 22, 35, and 58 inches diameter. Two single-ended steel boilers, with two furnaces in each, are expected to develop 1,000 horse-power. W.

London, July 13.

#### NOTES AND NEWS.

THE local committee of the American association announces that the arrangements for a successful meeting are fairly completed. A misstatement was made in the first circular regarding telegraph dispatches. The Western union telegraph company has consented to accept for free transmission over its lines only the *official* telegrams of the association, and will charge one-half of the regular rates to members who have their messages stamped by the local secretary. The American express company, the United States express company, and the National express company will ship packages over their own lines free of charge to Buffalo providing, such packages, 1<sup>o</sup>, contain specimens, etc., to be used during the meeting; 2<sup>o</sup>, do not exceed twenty-five pounds in weight; 3<sup>o</sup>, are shipped at owner's risk and are addressed to the American association, care of the local secretary at the High school in Buffalo. The following programme has been arranged by the local committee: Thursday, afternoon, excursion down the Niagara River to Grand Island; evening, the Botanical club of Buffalo will receive the Botanical club of the association, at the residence of Hon. David F. Day; the Entomological club of Buffalo will receive the Entomological club of the association at the rooms of the Society of natural sciences. Friday, afternoon, Mrs. Bronson C. Rumsey will receive the association at a lawn party at her residence on Delaware Avenue from 4 to 6 o'clock; evening, illustrated lecture by Prof. C. A. Ashburner, on 'the Geology of oil and gas.' Two excursions will be given to the members of the association on Saturday, one to Niagara Falls, the other to Chautauqua Lake. Monday, afternoon, excursion of the Botanical

club of the association to Point Abino in company of the Botanical club of Buffalo; and excursion of the Entomological club of the association to Ebenezer in company of the home club; evening, receptions at different places. As another large convention is held in Buffalo during the same week, it will add greatly to the comfort of the members to have the necessary rooms engaged prior to their arrival, and notices to that effect should be sent as soon as possible to the local secretary.

— The Pilot chart for August, just issued by the Hydrographic office, contains information appropriate to the season: The tracks of tropical hurricanes on their curved course into the temperate zone drawn for eleven examples recorded in previous years. It is also announced that the charts for the months of August, September, and October will contain brief accounts of the form and motions of the tropical cyclones that characterize this season, and the signs of their approach; of the principles on which the rules for their avoidance are based; and of points that need additional information. The first of these papers is printed on the current chart. The slow progress made by a wreck east of the Gulf Stream off Charleston is of interest; as is also the curious direct and retrograde course of the bark Rowland Hill in mid-ocean. The following tells a sad story: "Captain Maddox of the British steamer Norseman reports passing close to a raft and a heavy stick of timber, on July 13, in latitude 42° 49' north, longitude 66° 0' west. The raft, about twenty feet square, was strongly built of heavy square timbers, stoutly lashed and wedged, and had evidently been used by a shipwrecked crew."

— The U. S. coast survey has recently issued a chart of the approaches to New York showing remarkable features of much interest to navigators. Among them is a mud gorge which appears to have been formerly an extension or continuation of the bed of the Hudson. It extends from Sandy Hook out to the ocean basin, through a sea-bed of sand. The earlier surveys showed a number of mud holes off the entrance to New York harbor, and these, from their depth and the peculiar characteristics of the bottom, have long served in some degree as guides to the mariner. The recent re-survey of this locality with improved facilities has developed the fact that instead of detached holes there is a continuous gully. Ensigns Henry E. Parmenter and Walter O. Hulme have been ordered to the *Palinurus* at Stamford, Conn. Ensigns I. K. Seymour, C. M. Fahs, and H. P. Jones have all been ordered to the *Endeavor* to work on the re-survey of New York harbor.

Naval Cadet R. Welles and Ensign A. W. Dodd, the latter having been detached from the *Gedney*, have been ordered to the *Arago* at her new station on the Long Island coast. Ensign C. S. Williams has been assigned to the *Eagre* for duty in Long Island sound. Lieut. Commander Brownson, chief hydrographic inspector, will inspect next week the work and vessels engaged in the survey of Long Island Sound. Lieut. F. H. Crosley, commanding the steamer *Gedney*, has been granted two weeks' leave of absence; Ensign J. S. Watters will be in charge of the work. Lieut. J. E. Pillsbury, in command of the coast survey steamer *Blake*, has been conducting an interesting series of experiments in the Gulf of Mexico, measuring by the aid of an instrument of his own invention, the depth and velocity of sub-ocean currents. Lieut. E. D. Taussig of the coast survey, who has been conducting work off Cape Mendocino, California, has been detached and ordered home to await orders. The coast survey operations of the steamer *Hassler* in that vicinity have been attended with considerable difficulty not to say danger, on account of the high seas in that locality. Lieut. Commander W. N. Brownson, U. S. N., hydrographic inspector, of the U. S. coast survey, leaves Washington this week to inspect the work of the survey on Long Island Sound.

— The Senate has passed the bill for the relief of the party composing the Greeley Arctic expedition. It appropriates \$703.75 in lieu of computations for fuel and quarters and extra duty pay to each of the nineteen persons composing the party. It also provides that if any of the nineteen persons shall have died prior to July 1, 1884, the allowance is to be computed to date of death and the money paid to their families.

— The history of the past two years seems about to be re-enacted in Italy. Cholera has appeared at Latiano, Francavilla, Venice, and Ferrara. Fiume in Austria is also infected.

— In the suit brought by the Society for the prevention of cruelty to animals in Jersey City against Dr. Beriah A. Watson to recover penalties for cruelty to dogs in experimental surgery, Justice Lane gave judgment against the doctor. The case will be appealed.

— Prof. William A. Rogers of the Harvard college observatory has been chosen to fill the chair of physics at Colby university, Waterville, Me.

— The U. S. S. *Dispatch* was ordered to sea recently to find and sink four wrecks that have been derelict for a long time and now reported

to be somewhere in the bight of sea between Cape Barnegat and Fire Island light.

— Dr. Rufus Haymond, a well-known student of vertebrate zoölogy, and one of the pioneer naturalists of the Ohio valley, died at Brookville, Ind., July 29, at the age of 81 years. He was a native of Virginia, and came to Indiana in 1826.

— Mr. B. W. Evermann, late of Indiana university, has been elected to the chair of natural sciences at the State normal school, Terre Haute, Ind.

— Mr. George H. Boehmer of the Smithsonian institution leaves Washington during the present month on a European mission, as agent for the library of congress and the Smithsonian, in perfecting a more systematic and satisfactory method for the international exchange of public documents published by each country.

— Mr. Nathaniel H. R. Dawson of Selma, Alabama, has been nominated by the President for the position of commissioner of education.

— Rev. Charles Henry Appleton Dall, father of Dr. Wm. H. Dall, the conchologist, died at Darjiling, India, on July 18. He had been for more than thirty years in the missionary service.

— Spirits of turpentine will remove unpleasant odors from the hands when all other deodorants fail.

#### LETTERS TO THE EDITOR.

*\*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.*

#### Feline telepathy.

IN the issue of your admirable journal for July 31, 1885, the then editor, my esteemed friend Prof. S. H. Scudder, a distinguished histologist of special eminence in entomology, does me the honor to notice my censorship of the American society for psychical research, and passes the compliment of calling me 'the well-known ghost-smeller,' perhaps with some 'occult' reference to my psychical researches.

Neither affirming nor denying this hard impeachment, I beg to cite Professor Scudder himself in connection with the interesting and instructive psychic researches now in progress concerning telepathy. I submit that the eminent entomologist is in his own person a demonstration of telepathy; and no false delicacy should make him shrink from offering himself as a good subject for telepathic experimentation on the part of the members of the American society for psychical research.

No one more than myself, among Professor Scudder's friends, sincerely deplores the painful affection of the respiratory passages from which he suffers when brought within a certain radius of a cat. It may be some mental consolation, if no alleviation of the difficulty of breathing, for the professor to reflect that his case is an interesting and valuable one for

the purposes of psychic research, since it is able thus to offer an important contribution to the science of telepathy.

If I am correctly informed, Professor Scudder does not require to see the cat, or hear the cat, or smell the cat, or taste the cat, or touch the cat, in order to become painfully alive to the proximity of the animal, in the way above said. None of his physical senses is concerned in the psychic cognition of the cat and its painful bodily result. This is telepathy, namely, thought-transfer without any known or recognized physical or mechanical means of communication. Professor Scudder is evidently telepathic with cats, as a psychist would express it. What subtle connection there is between the anthropoid and the aeluroid organisms in this case, resulting in such violent antipathy and respiratory derangement on the one hand and such complacent sympathy or entire apathy on the other, is hard to say; though it may be suggested that asthmatic breathing resembles purring in some audible respects. Whether any real mind-reading is here involved is doubtful, because it is impossible to say what cats think of Professor Scudder; though what this amiable gentleman thinks of cats, while under the shock of the feline telepathic impact, and also subsequently, is well known to the large circle of his friends.

When I was appointed by the Theosophical society its official censor of the American society for psychical research — a delicate and difficult office, which I reluctantly accepted about a year ago in the interests of psychic science — it became incumbent upon me to explain to the psychical society any fact in psychic science which they might succeed in establishing.

I cannot admit that the said society has established this case of telepathy, considering that I have been obliged to do so for them. But since one of their members has been the unwitting means of demonstrating feline telepathy, I pass the credit of the discovery over to the psychical society, with the compliments of the Theosophical society, and offer my explanation of the matter. It is the same 'Explanation of telepathy' which was printed in the *New York Nation* of Jan. 15, 1885, after Professor Scudder, with tender regard for my reputation as a scientist, had declined to publish it in *Science*, of which he was then editor.

All animals, plants, and minerals disengage from their bodies a substance variously called 'biogen,' 'od,' 'akasa,' etc., this aura or ultra sensible emanation having certain modes of motion which are the direct means of 'phenomenalizing' or making apparent to the natural senses those effects known as 'mesmeric,' 'magnetic,' 'nervauric,' 'telepathic,' 'spiritistic,' etc. Professor Scudder happens to be so constituted, in relation to cats, that the feline biogen, impinging upon the Scudderian, immediately makes him think of cats, transfers his thought from all other objects of interest to cats, fixes his mind upon cats, excites a violent 'psychic storm,' or emotional disturbance, and results in the painful physical derangement above noted.

It would interest any student of psychics to ascertain whether the eminent entomologist who furnishes this case does not suffer in much the same way from various other animals, as horses and cows. I venture to surmise that such will be found to be the case.

Any other explanation than I have given does not occur to me as probable. A physicist or biologist,