where. The use to which the articles are devoted is to wear them with the silk wound in a knot about them, as ornaments for the button-hole or cap. Altogether, the custom has only the merit of quaintness, and, even if not more honored in the breach than the observance might, without loss to anybody, be discontinued."

A singular illustration has lately been furnished of the pertinacity with which Englishmen are wont to maintain what they conceive to be their rights. Two gentlemen were summoned during the same week to answer for refusing to allow their railway tickets to be punched at the entrance to trains. In each case the defendant seems to have been under the apprehension that the ticket was his own private property until he had completed his journey, and that although he could be called upon to show it, he yet could not be legally asked to hand it over that it might be punched and handed back to him. One of the two defendants, who is stated to be a barrister, argued this point with considerable persistence, but failed to satisfy the Lord Mayor, who gave a rough and ready judgment that there could be no reasonable objection to the punching of a ticket, and that the defendant had no right to resist such a regulation and to assault the railway officials who were charged in carrying it out.

PUBLIC OPINION.

Nobody wants the continuance of the National banks to stand in the way of better institutions. They are wanted now because they are the best the country has ever known.—[Philadelphia Inquirer (Rep.)

A few very stalwart Stalwarts have had a dinner together in Albany. This species is rapidly drifting toward extinction in this country, and the public will be glad to know that these specimens were well fed.—[Buffalo Express (Rep.)

The Democrats, having lost control of Congress and all hope of regaining it, are now proposing measures to reduce the salaries of Congressmen and officers of Congress, as well as of other Government officials.—[Cleveland Leader (Rep.)

NECESSARY INSCRIPTION FOR THAT MEDAL.

From The Cincinnati Commercial

The medal of the Grant Guard should contain, in some form, the useful information that only ten per cent of the "306" were from Republican districts, and that the rest represented such Republican possibilities as Missouri, Mississippi, Arkansas, Alabama, Kentucky and the Democratic districts of Pennsylvania and New-York.

HOME AT LAST.

From The Philadelphia Record (Ind.)

The Democratic party as a sound money party seems to have gone to the devil. When that unripe product of Kansas, Mr. Plumb, finally got his amended amendment to the Sherman Funding bill into such shape that it was a bald proposition to keep only 30 cents in the Treasury to redeem each dollar of outstanding demand notes in the hands of the people, there were twenty-nine Democratic Senators who voted in favor of the proposition and only two against it—Mr. McPherson, of New-Jersey, and Mr. Jones, of Florida. It is bad enough that the rascally legal-tenders must be shoved out again as fast as they are redeemed, but it is scandalous that the gold reserved behind them should be drawn upon for any other purpose than to pay them off. It is a sad day for the country when a party which has reasonable aspirations to succeed to the control of affairs can through its representatives in the United States Senate commit itself to such a folly. To all believers in sound methods of finance the vote on this Plumb amendment will give a renewed warning of the danger hanging over us in the shape of Government demand notes liable in any emergency to swamp the Treasury.

THE DEMOCRACY'S STRONG POINT.

From The Albany Evening Journal, (Rep.)

There are Democrats who have a correct appreciation of the chronic defects of their party, and who find encouragement in what to others only foreshadows disaster. One of these Mark Tapley gentlemen is reported as saying: "The deadlock may be discreditable to our party, but it is not the worst thing that could befall us. The mischief will come from the blunders sure to follow an organization." The past history of the Democratic party justifies this humiliating estimate of its incapacity. It is only harmless when it is idle. The moment it attempts to do anything it is sure to do mischief.

MIDNIGHT WEATHER REPORT.

GOVERNMENT INDICATIONS.

Synopsis for the past 24 hours.

WASHINGTON, Feb. 3, 1 a. m.—The barometer is highest in the South Atlantic States and lowest in the St. Lawrence Valley. Occasional snow has fallen in the Upper Lake region and general rains in Texas. Westerly winds prevail in the Northern States, and easterly in the Gulf States. The temperature has fallen in the Lake Superior region; elsewhere there has been a general rise.

Indications for to-day.

For the Middle Atlantic States, fair weather, warm southwest veering to colder northwest winds, higher pressure.

For New-England, fair weather, warm southwest veering to cold northwest winds, falling followed by rising barometer.

Indications for to-morrow.

Rain is indicated for Saturday in the East Gulf and South Atlantic States, Tennessee, the Ohio Valley and Middle States.

TRIBUNE LOCAL OBSERVATIONS.

The diagram shows the barometrical variations in this city by tenths of inches. The heavy perpendicular lines give divisions of time for the 24 hours preceding midnight. The irregular white line represents the oscillations by the mercury during those hours. The broken red line represents the variations in temperature, as indicated by the thermometer at Badcock's Pharmacy, 218 Broadway.

TRIBUNE OFFICE, Feb. 3, 1 a. m.—The movement in the barometer is again downward. Clear and fair weather prevailed yesterday. The temperature ranged between 23° and 40°, the average (33⅞) being 27⅛° higher than on the corresponding day last year and 2⅛° higher than on Wednesday.

Clear or fair weather, with lower temperatures at night, may be expected to-day in this city and vicinity.

SAID TO BE MISSING.

Inquiry was made late last night at one of the police stations for William H. Keane, of No. 129 First-st., Hoboken, it was said, by his brother. It was reported that Keane was a printer employed by *The Scottish American* and that he had not been seen since the fire in the Potter Building. Keane's name does not appear on the list of the employes of that paper, but it was suggested that he was acting as a substitute for one of the regular employes, a common practice among printers. A TRIBUNE reporter called on James Keane, the brother mentioned, and learned that William was thirty years old, and a widower with one child. He was in Hoboken on Sunday, and said that he was employed in Park-place in a printing office, but that he was idle half of the time. He has not been seen since Sunday. The brother said he had made no inquiry, and did not think William was lost.

MEETING OF THE NEW-YORK YACHT CLUB.

The annual meeting of the New-York Yacht Club was held last evening at the rooms of the Club, Madison-ave. and Twenty-seventh-st. After a protracted session, a resolution accepting the "American Cup," under the conditions set forth by the giver, George L. Schuyler, was passed. It was decided to hold the annual regatta on June 15, to have the annual dinner at Delmonico's on February 21 and to compete for the Goelet cups at Newport in August. The following officers were elected: James D. Smith, commodore; Anson Phelps Stokes, vice-commodore; Edward M. Brown, rear-commodore; Charles A. Minton, secretary; James O. Proudfit, treasurer; A. M. Fisher, fleet-surgeon; A. Cary Smith, measurer; Gilbert L. Haight, Chester Griswold and John H. Bird, regatta committee.

A NOTABLE ARSON CASE.

[BY TELEGRAPH TO THE TRIBUNE.]

NEWPORT, Feb. 2.—Dr. William H. Bowen, one of the leading citizens of the State, who has always borne an unblemished character, was placed on trial today in the Court of Common Pleas on a charge of arson. He pleaded not guilty. The indictment found at this term and substituted for two previously found comprises five counts, of which the first charges that the defendant on August 9 last, at Scituate, burned his dwelling-house with the intention thereby to injure the Pawtucket Mutual Fire Insurance Company. The second count charges him with burning of the household furniture, wearing apparel, books, silverware, etc., contained in his house, intending thereby to injure the Exchange Fire Insurance Company, of New-York. The third charges him with attempting to burn the barn on the same premises, to injure the underwriters of the Pawtucket Mutual Life Insurance Company. The fourth count charges him with an attempt to burn the sleigh, carriages, harness, etc., contained in the barn, thereby intending to injure the Union Insurance Company of Philadelphia. The fifth count charges that certain persons, to the Grand Jurors unknown, feloniously and willfully attempted to burn the property with the intent to defraud the Pawtucket Mutual Fire Insurance Company, and that the defendant hired the unknown persons for this purpose. The plaintiff was out of town at the time of the fire, which broke out after his family had retired. His wife and three children, his father and a lady friend of his wife, were in the house and narrowly escaped with their lives. It was shown that the fire had been started in both house and stable by infernal machines, which were arranged with clock-work and which were operated by electricity. Eminent counsel are engaged on both sides. The defence claim that it is a conspiracy, the defendant having been prominent in bringing liquor dealers to trial, who annoyed him in every conceivable manner prior to the fire. It will be a protracted and celebrated case in view of the social prominence of the defendant, who is on bail.

TWO VETERANS OF 1812 DEAD.

PLANO, Ill., Feb. 2.—Isaac Hatch, sr., died here yesterday. He served in the New-York State Militia during the War of 1812.

BUFFALO, Feb. 2.—Peyton Harris, colored, a veteran of the War of 1812, died to-day at the age of ninety years.

DOCTORS AND PLUMBING.

POINTS AFFECTING PUBLIC HEALTH.

MEETING OF THE ACADEMY OF MEDICINE—INTERESTING ADDRESSES AND EXPERIMENTS.

An especially interesting meeting of the New-York Academy of Medicine was held at No. 12 West Thirty-first-st. last night. The paper of the evening was on "Practical Points in Plumbing," by Charles F. Wingate, and sanitary evils were discussed by the President, Dr. Fordyce Barker, and by Professor Doremus and others. Among the physicians present were Dr. F. H. Hamilton, Dr. Willard Parker, Dr. H. A. Vanderpoel, Dr. Edward Janeway, and Dr. Austin Flint, jr. The meeting was called to order at 8 p. m., and after the corresponding secretary had read the necrological list of foreign members, and after the reports of the various sections of the society had been made, Dr. Barker presented a letter of regret from Professor Chandler, of the Board of Health.

DR. BARKER'S REMARKS.

Dr. Barker then read an address, which was as follows:

FELLOWS OF THE ACADEMY: One of the avowed objects of this Academy, as expressed in its constitution, is the promotion of the public health. Strictly speaking, all of our scientific work is in this direction, but this meeting is in a larger sense devoted specifically to this object. There is not a physician in this city engaged in active practice who is not frequently called upon to see disease of various degrees of severity often resulting in death, which has been caused by a poison. If we can see our patients early enough, we can successfully meet such poisons as arsenic, as corrosive sublimate, as aconite, and all of this class, because we have antidotes which will prevent their effects. But where the poison is introduced into the system so insidiously that the subject is unconscious of its absorption until its effects are produced, then it is not a question of antidotes; but the problem is, How shall we counteract its consequences, and how shall we keep our patients alive until the life-destroying agents have ceased to put in jeopardy the vital powers?

The special poisons to which I now refer are the gases resulting from defective plumbing, to which all classes—the poor occupants of tenement houses, those who are able to command the necessaries and many of the luxuries of life, and those who live in the most expensive houses and whose riches can buy everything but health—are alike exposed. None but physicians can know how general this poison is, and how positively it explains much of the disease that they are called upon to treat, and of the many sad deaths which follow.

When I assert that it is a daily experience with me to see persons whose general health is suffering from this poison, as manifested by malaise, loss of appetite and strength, slight febrile symptoms, diarrhœa, physical and mental depression; and that I have seen infants, children and adults suffering from diphtheria, scarlet fever and a bald type complicated with this disease and destroying life; those in vigorous health, students in colleges, ambitious and active young men in the professions or in the commercial or financial world, stricken down by typhoid fever, some struggling through the disease and others dying; and that the cause has been demonstrated to be this poison, I only state facts which are common in the experience of all physicians in this city. In some cases this has been the result of ignorance of the very unsanitary conditions which environed them. For example, two young men were stricken down with typhoid fever, one of whom died. They were not acquaintances, but occupied offices in the same building, in the vicinity of Wall-st. On investigation it was found that there was not a trap in the whole building. In a house, in which but a few months before several hundred dollars had been expended to put the plumbing in perfect condition, a young man died of typhoid fever and others of the family became ill, when it was found that a defective waste pipe was saturating the house with poisonous gas. But such facts as these are so common and so well known to the profession that I need not dwell upon them.

It is the custom of many in this city, whose means will permit them to do so, to take their families for health and pleasure to various summer resorts, at the seaside, the mountains and other attractive country hotels; but every year for some time past, some of these places have proved fatal to health and often to life by typhoid fever; so that now it seems to be the plain duty of every physician to warn such families as hold him responsible for their health of the danger of every resort that does not give them the evidence of a competent sanitary expert that their house is safe from all such dangers. None but physicians are alive to the fact that many of these living in beautiful and expensive houses in this city are like the inhabitants who dwell at the base of Mount Vesuvius, in a soft, balmy, voluptuous atmosphere, surrounded by vineyards and gardens luxuriant with the olive and the fig and the orange trees, which mask and hide the danger and desolation of the lava and ashes of disease. It is absurd to suppose that those who find pleasure in expending many thousands in luxury and art to embellish their homes will not gladly expend the insignificant sum necessary to make their homes healthy for their families and themselves.

The physician should never be an alarmist—he never can hoist the signal of danger, except when he sees the forewarning signs of an impending storm. Unfortunately he never can see the danger from this position, until its effects are already beginning to develop as shown by disease. Then again he labors under the difficulty of being unable to demonstrate or even suggest where the poison originates. He can only say that science has established the fact that certain symptoms are due to certain causes. It seems to me that it is the duty of the profession to educate itself up to the point of being able to demonstrate intelligently to their patients how the danger from these poisons may originate. I now have the pleasure of introducing Mr. Charles F. Wingate, who will read the paper of the evening. [Applause.]

THE ADDRESS OF C. F. WINGATE.

The address of Mr. Wingate was substantially as follows:

For a layman to venture to address such an audience as that before me upon a sanitary subject seems the height of presumption, when one reflects how vast a debt sanitary science owes to the medical profession. Founded by physicians, its growth has been mainly due to their voluntary and disinterested labors, often at great personal and pecuniary sacrifice.

It therefore seems like carrying coals to Newcastle to offer advice to medical men regarding sanitation. Yet as the old derisive proverb has been set at naught by "the whirligig of time," so it has strangely come to pass that the sanitary engineer can now assume to instruct his betters and even show physicians their omissions in matters properly within their province.

I shall not, however, discuss general sanitation, but limit my remarks to the practical points relating to plumbing and kindred subjects which have a direct relation to the physician's efforts to overcome disease. When so much sickness can be traced to unsanitary conditions due in the main to preventible causes, it is desirable that the family physician should be able to point out such conditions, and in a general way suggest the proper remedies for them. When, also, so much foolish fear prevails regarding the risks to health from so-called modern improvements, the physician should be able not only to assure but to convince his patients that plumbing properly executed with good materials, and upon scientific principles, is absolutely safe and is decidedly to be approved rather than abolished. It is idle to talk of returning to the primitive discomforts and abominations of our forefathers in this line. Modern improvements are improvements. The world does not move backward nor readily abandon anything which conduces to comfort and health. Plumbing appliances are hence no more deserving to be done away with than are gas or electricity, the railway or the newspaper, each of which is also open to serious objections.

ADDITIONAL DUTIES FOR DOCTORS.

Of course the physician cannot perform the sanitary engineer's work in detail, but he can at least point out the necessity of watching house plumbing and indicate, in a general way, what steps are necessary to correct defects when they are discovered. Successful practice of medicine depends upon relieving pain and checking or eradicating disease. This, I presume, no one will deny as a general proposition. How, then, can the physician gain these practical ends unless he can point out the causes of disease and how to remove them? The greatest skill in diagnosis or mastery of therapeutics will be vain, so long as the patient's surroundings are lowering his vitality or poisoning his blood. If the physician can detect these ill conditions, and promptly correct them, will not he receive due credit from his patients and their friends? If the conditions are beyond immediate correction, and the patient is ordered to leave the house, the physician is entitled to just as much credit as he justly claims when an invalid returns from a sea voyage or sojourn in Florida or Colorado, at his instigation, with health restored.

The true function of the physician is being understood. Intelligent patients recognize that there is no magic about medicine, and that disease is not removed by incantation or sleight of hand. Every high-minded physician also scorns to rely upon mystery, delusion or pretence. Whenever sickness, such as is usually traceable to defective plumbing or drainage, prevails in a house and no sufficient cause for its existence is apparent, the physician should not be content until an examination has been made by a health officer or other competent person, to make sure that the house is free from sanitary defects. Nothing should be taken for granted in such matters, and no evidence accepted regarding the safety of hidden plumbing work, as underground drains, cesspool traps, etc., except to have them open to view and their real condition proved beyond a doubt. Every physician should warn his patients not to lease or buy any dwelling, whether old or new, without having the premises thoroughly examined, and obtaining a certificate of their healthfulness; not the ordinary landlord's or agent's verbal statement that everything is lovely, etc., but a legal document that will hold good in the courts, and be a ground for obtaining damages in case the house should prove to be unsanitary, and sickness result in consequence. This wise precaution is now being taken by many persons. The examination, however, must be thorough, or it will be useless, as a false sense of security, based upon an incomplete examination, is worse than absolute ignorance.

A NEW LITERATURE NEEDED.

There is another circumstance which has made it necessary for specialists to take up household sanitation, viz., that much of the literature of the subject has been written by European authors, and is adapted for climatic conditions and social habits and customs different from our own. Hence an original science of domestic sanitary engineering has had to be developed within a very short time to meet American needs. It is a significant fact that many of the worst hygienic conditions are found in doctors' dwellings. This is especially so in the case of those who have only a smattering of information on sanitary subjects. In plumbing, as in medicine, a little knowledge is a dangerous thing. Hence, most plumber complains that physicians are over confident and among the most wrongheaded customers. I may commend to the profession the frank confession and counsel of Dr. Pridgen Teale, in his illustrated book on dangerous houses.

Any one having opportunities for seeing sanitary defects in the vast majority of city houses, whether occupied by millionaires or mechanics, and whether situated on Murray Hill or Avenue-B, can feel little surprise at the statistics of increasing mortality in New-York. The constant demand for the doctor's services in so many houses in their normally bad state, and the fact that the doctor's services are no longer in demand when they have been put in sanitary condition, tells its own lesson.

I will devote the rest of my time to the details of what I find in New-York, Brooklyn, Boston and smaller cities in New-England and in New-Jersey. We build houses involving the labor of scores of mechanics, and leave them, with no one to take care of them, to go to rack and ruin. Some one must supplement the work of the builder, and so the sanitary engineer has often to do much inconsistent work beside correcting sanitary details.

HOW TO EXAMINE A HOUSE.

The first point is how to examine a house. Every part of the plumbing must be exposed to view or tested, and things are usually found different from what they have been represented. The peppermint test is one of the first. An ounce of oil of peppermint in a pail of water is poured into the openings of the plumbing fixtures at the upper part of the house. If the smell of peppermint escapes by a leak this shows that sewer gas would also escape. A second point is the quality of the details of the plumbing work. A single portion of the work, one joint of a pipe, will tell a practised plumber the capacity of the workman. If a house is deficient in its minor details, it will be found generally bad. A direct leak from a pipe will be shown by holding a candle near it. The practised nose can tell a leak in a short time, and by the density of the smell from a roof pipe it can be learned whether there is a trap in the pipe to the sewer. The sanitary engineer goes first to the cellar and looks at the sources of damp. These are manifold both in the city and country; rain and snow blow in; there is leakage from the water pipes and areas, and there is the refrigerator waste. I visited a house in Boston where all the rain water and refrigerator waste were soaking into the soil, and the house, in addition, was on low made-ground on the Back Bay. I saw here a novel phenomenon; the ground was so damp that the whole of the yard was covered with a fine moss. Dangerous as this dampness was, it was hard to convince the occupant, because there had been no sickness in the house, and the owner considered me an impostor.

Another source of danger is from broken or leaky underground drains. Most houses have underground drains which are made of tiles laid by ignorant workmen, and I have seldom or never found a drain which was not in a defective condition. Even in Memphis the new drains were not absolutely tight, on account of the extra pitch in some cases, and of breaks. Then the soil becomes saturated with the worst kind of sewerage. In Boston I have found many drain-pipes without the proper pitch or flush. Some pitched toward the houses instead of the sewers; others were choked with grease or there was no sewer connections at all. The plumber sometimes ran the drain over a rock, up and down, or ended it on one side, continuing on the other, or connected two sections of six-inch pipe by a four-inch pipe. A break or stoppage means such a deadly deposit of sewerage as accumulated under a house I examined near Murray Hill. It was taken by a family last spring who in a few months nearly all got sick. The gentleman said that on opening the register in his bedroom he was almost choked by a peculiar ammoniacal smell. He obtained a certificate from Dr. Loomis of the presence of malarial fever, and from the Board of Health of the bad sanitary condition of the house, as well as one from myself. I found one drain for two houses which was open at every joint and ran near the furnace, so that all the air in the house was poisoned with sewer gas, and in addition the refrigerators communicated with the sewer. A legal question arose when the gentleman refused to live longer in the house under any circumstances. The agent claimed $3,000 as damages, but the matter was finally compromised and the occupant paid $1,000. This introduces an important question as to claims for damages from sickness, and the courts have lately decided that if the landlord is cognizant of sanitary defects he is liable for resulting injuries. Nothing but iron pipes with lead joints properly coupled, and carried along the cellars in sight, or in trenches easily accessible should be used.

Another source of danger is from the enormous quantity of made land, especially near Central Park. [Here the lecturer referred to General Viele's sanitary map of the city.] Much of this is filled with broken rocks, which give an area for foul air, leakage and soakage. There are houses on marshes where water can be found by digging a few inches. The Board of Health states that ten years are necessary to thoroughly purify made land. Many downtown buildings, especially the new Fulton Market, are erected fairly in the water. Old plumbers used to say that the cellars were made like the bottoms of ships and the houses might be said to float.

DEVELOPMENT OF PLUMBING.

It is constantly asked, Why is it that we have only lately heard of the serious consequences of bad plumbing, and why is it that sewer gas was so little known in the past? To answer this it is necessary to sketch briefly the historical development of plumbing. One hundred years ago there was little, if any, plumbing in ordinary American dwellings. The usual sanitary arrangement consisted of a well, a cesspool and a cistern for holding rain water. Later on kitchen sinks and old-fashioned boilers were introduced and finally baths and water closets came into vogue. It was not until the introduction of Croton water in New-York in 1842 that even this state of development was reached. Prior to that date plumbing was confined mainly to ships. It was often elaborate, the plumbing bill for the fitted steamer Arctic amounting to $1,200. The work however was simple in houses, as in ships, and traps, vent pipes, siphonage and sewer gas were unknown and unmeaning terms. As population increased and dwellings thickened the effect of massing people in close quarters made itself felt. The old cesspools, which were roomy and had ample ventilation, were replaced by smaller receptacles, which in time were tightly sealed up, with the ostrich-like idea that if hidden below the ground their contents could not do harm. It was also found less convenient to empty and clean these receptacles, and so they were frequently neglected.

Public sewers were slowly introduced. In 1849 there were only seventy-two miles laid in New-York against 341 miles now. Many of the first sewers were only sewers in name, having been laid to carry off kitchen waste alone. They were merely rough stone drains uncovered and open, so that when used to receive sewage they rapidly polluted the soil and became simple storehouses of sewerage. Down to a very late date many of the sewers of New-York were constructed of inferior material and imperfectly laid. Badly burned bricks, bogus cement and sand that was half loam were used in making them, while, especially under Ring rule, the contractors who laid them executed their work in the cheapest and most culpable manner. Few of the best sewers are really tight, while the majority leak at every joint, and thus the whole system is an enormous source of soil pollution. From the lack of a comprehensive plan in the beginning and of competent supervision during their construction many of the sewers have little or not enough grade, and are not easily flushed. They become, especially by when tide-locked, elongated cesspools and mere gasometers for creating evil. Their lack of ventilation leaves small chance for the sewer gases to find vent excepting through the house drains, and the average plumbing affords no barrier against their free diffusion throughout living and sleeping rooms. And here it should be remarked that sewer gas is created not only in the sewers alone, but every inch of waste pipe in a house, even though used to convey nothing but soapy water or the waste of melted ice from a refrigerator, can and commonly does produce foul gases. The worst odors are from just such sources, and they are certainly unwholesome. There are many broken gas-mains. The soil can hardly be dug up without encountering the smell of gas. The gas companies are aware of the loss and make it up in their bills. Professor Chandler says that ninety per cent of the cellars in New-York are bad, and I should say ninety-five per cent are either originally dangerous or made so by neglect. The relations of soil moisture to disease have been shown by Dr. Griscom in the statistics of sickness among the colored population living in cellars in the time of cholera.

SOURCES OF FOUL AIR.

There are several sources of foul air in houses. The air supplied to the furnace is often taken from the cellar, or the cold air-boxes are made of unseasoned wood, and in them rats, cats and chickens seek shelter. In one house two chickens and a cat were found roasted in the brick work near the furnace, and in another the cold air-box had settled to admit the air near the servants' closets, a foul refrigerators and a receptacle for soapfat. The refrigerator should have no connection with the drains as they are built in most houses, nor should the refrigerator waste run into the soil. Garbage and dust from wet and coal in cellars cause foul air, which is drawn up into the living rooms by the suction of hot air if not through the dumb-waiters. It is desirable to have the kitchens and laundry separate from the house, as was the case with the cottage at Elberon occupied by President Garfield. The gas lights should be ventilated, and the servants' accommodations carefully looked to; for if they have poor rooms and no bathing accommodations they are naturally careless in their household duties. It would be desirable to have all boxing around kitchen plumbing, sinks, etc., removed. Servants should not sleep on the ground floor, especially near closets. Hard floors are an improvement, but there is too much upholstery in houses and there should be fewer curtains, which retain the dust. The plumbing ought to be isolated as far as possible, and the Board of Health recommends a shaft for the purpose running through the house. It is bad to have inside bath rooms opening into sleeping rooms. There must be an ample water supply, and I am glad that Ericsson's caloric engine is being used to pump water. There is especial danger in sleeping in rooms opening into closets.

Most soil pipes are too large, as the one in the Rockwell house in Brooklyn, which was filled only one-fifth by water. Dangers from sewer gas are largely due to job-building, the employment of poor, cheap plumbers and the ignorance of architects. There is probably only one in the city competent to execute the specifications for the plumbing of large houses.

Dr. Wingate deprecated the cheapening of plumbers' work, as they could not always tell its cost any more than a physician could tell the cost of taking a patient through typhoid fever. He referred to the follies of amateur sanitarians, approved the recommendation of the Board of Health of a trap between the house and the sewer, and closed by expressing a hope for the enforcement of sanitary laws by public opinion, the increase of the water supply, and education in plumbing, architecture and hygiene. He also approved the movement of cooperative building, saying that people joined together in this way would see that their houses were well built.

THE EXPERIMENTS.

Professor Doremus was then called upon, and he spoke about as follows:

MR. PRESIDENT AND GENTLEMEN: At the request of your illustrious President, whose suggestion is always a mandate to me, and with whom I have been associated in medical colleges for a third of a century, I have the honor of appearing before you to-night to exhibit a few experiments, which will demonstrate how readily gas passes through porous media. I had the honor to be instructed in this by that distinguished man, the late Professor John W. Draper, about forty years ago. In 1867, at my last interview with Professor Liebig, he said to me, "Don't leave Munich without visiting Voigt & Pettenhoffer's laboratory, and I saw there what I shall now present to you.

On the table in front of the President, was a block of brown sandstone, twelve inches by fifteen inches long and four and three-fourths in thickness. On each side of this, a depression, a quarter of an inch in depth, had been made. Iron plates had been inserted in them and attached by clamps. To each iron plate an iron tube was fixed. The whole surface of the stone, except that covered by the iron, had been coated with many layers of varnish. Professor Doremus fastened a flexible tube to a gas jet at one end, and, at the other, to one of the iron tubes, the other extremity of which, as has been explained, rested against the sandstone. After waiting a minute or two he applied a lighted taper to the end of the other iron tube connecting with the sandstone, and a small flame sprang up, showing that the gas had passed through the solid stone. Professor Doremus then took a block of brickwork eight inches in thickness, made of Philadelphia brick, with plates and tubes attached in the same manner as to the sandstone. By blowing through one of the tubes, a candle-light placed at the end of the other was deflected. And this deflection lasted for some time after the blowing had ceased, showing that it took some time for the air to go through the brick. Professor Doremus said that he told Judge Brady how this experiment was performed. The Judge listened to him attentively, and then remarked, "Tell me the trick, Professor."

Professor Doremus added that hydrogen or street gas could be passed through stone in the same way, and that the pressure necessary to accomplish it was very small. He then made one or two more experiments to show how readily some gases passed through water, and continued as follows:

What must we do, if we have the gases in our sewers? If these are cut off from our houses by water-traps, it does no good; the gases will pass through the water. We must have chemicals in the trap that will decompose the gases. Chlorine is the great agent, the "ring breaker," that will decompose hydrogen gas and every form of poison. Suppose there is a case of scarlet fever in a house, and the walls become impregnated with the poison. Chlorine or some other gas should be generated that will decompose the poison on the wall. In 1865, the ship Atlanta arrived at this port with a number of cholera patients. Sixty of her passengers had already died. At the request of the Health Physician of the city, and by the authority of Mayor Gunther and Dr. Swinburne, the Health Officer, the Atlanta and all other vessels entering the Narrows were treated with chlorine, bromine and other active agents. This was so effective that not a single case of cholera occurred in New-York or its vicinity.

Dr. Agnew has informed me that about thirty years ago the North wing of the old New-York Hospital became unfit for use, in consequence of its walls having become saturated with disease through the reception of a large number of ship fever patients. Ventilation was tried, but in vain. The walls were scraped, but many of the workmen sickened, and one at least died. At the Lincoln County Hospital in England, the walls became magazines of disease in the same way. They were gutted and replastered, but it did no good. They then were treated according to the Hebraic system, and torn down to the very foundation. A few years ago, certain wards in Bellevue Hospital were found impure, causing pyæmia. At the request of the Commissioners of Charity and Correction I attempted to purify them by the use of coloring gas. I generated nearly three tons of this in these wards during many weeks. Every few months now the chlorine treatment, in a less vigorous form is employed.

Dr. James R. Wood stated, three years after the commencement of this treatment, that no case of pyæmia had originated in the wards since it had been adopted. I think that we are warranted in saying that owing to the porous character of all walls and the decomposing power of certain gases, we can purify not only the walls but the very stones of any edifice, if only the treatment is heroic. I speak on this subject with a good deal of feeling. On December 1, last I was to deliver a lecture, illustrated by experiments in which my son, fourteen years old, was to assist. The day before, he died from the evil effects of sewer gas. Another son is just now recovering from the effects of an illness due to the same cause. As I said to the President here to-night, I would rather have given my son the deadliest poison in my laboratory, and have trusted to the antidotes, than to have had him inhale this sewer gas for the deadly effects of which we have no remedy.

WHAT WILLARD PARKER SAID.

President Barker then said that he would call next upon an ex-President of the Academy, and one whom those present knew was well acquainted with the subject, Dr. Willard Parker, who spoke briefly as follows:

I think this is a subject of the greatest importance, and one which it is our duty to be interested in. In 1846, perhaps some of you remember, the ship fever which was so dreadful. I never really dreaded any disease, I think, but that. There were many cases of this disease then at Bellevue Hospital, which was crowded to its utmost, patients being stretched everywhere on the floor. In the morning they used to go through the wards and pick up a dozen or more dead persons. Yet those had all been cared for as well as it was possible. The patients finally came in such numbers that tents had to be erected in the yard under the trees. And nearly all those who were thus exposed to the air recovered. I suppose that many of you know the history of the Arabe, which was driven upon the shore at Perth Amboy. She had had many cases of ship fever on board, and while these patients were confined to the ship they nearly all died. When the ship went ashore the patients were taken out and placed under hastily improvised canvas covers; and not one of them died. These cases only show the great importance of air.

We are living in the wrong kind of buildings, and everything is wrong. Previous to the introduction of Croton water in this city, I don't remember a single case of diphtheria. There were numerous cases of croup, and some which resembled diphtheria, now and then. It is a disease which depends on malaria, or bad air. It attacks families and goes through all the members. I had a friend, a physician, who depended on his cellar for all the air for his furnace. His six children were all stricken with this disease, and all of them died. And there are cases of that description everywhere. I say that if we have diphtheria, there is something wrong about our sewers. If I were to build a house, I would not have it connected in any way with a sewer. I should construct a sort of annex, where I should have all the sewers, closets, and all the pipes of the houses. I suppose most of you would object to having a vault filled with dead bodies a few yards from your house, and connected with it by a pipe. Yet this is practically what we do with our sewers. Water is no protection from them—from the germs of poison which generate and live in the foul air. This matter demands our most earnest attention, for we are in a very critical and unhealthy condition.

OTHER REMARKS.

Dr. Barker then referred to the presence of two physicians who had been members of the Board of Health, and said he would call upon them in the order of their seniority. In response, Dr. Vanderpoel said in part:

It is time for physicians to know not only the elements of their profession and two or three natural sciences; but they must know the principles of plumbing and the sanitary construction of houses, so as to point out their defects, as it is impossible to trust mere mechanics. One defect not pointed out is that there is no soil drainage proper in New-York, and although there are sewers connecting with every house, there is no chance for the moisture of the soil to escape. Phthisis has been shown here and in England to be induced by this character of the soil, although in England the use of proper drains has diminished disease. There is much filled soil here and no provision has been made for the release of the water contained in it.

While it is advisable to have soil pipes exposed to view it is practically impossible, as they would disfigure elegant dwellings, and in small houses space is too valuable. At the joints of the pipes there should be careful caulking with tow, lead and sulphur. But when the pipe is set in a slit in the wall only half can be reached, and the caulking is consequently often done only half way around, the remainder of the joint being left untouched. The sanitary engineer is assuming an important place in the professions and every house should be inspected.

Dr. Janeway then said in part:

It is hard to distinguish between sickness from sewer gas and sickness caused by noxious disease germs, conveyed in the sewers. Smallpox may come from germs in the sewers, but no one would attribute it to sewer gas. In regard to diphtheria, however, it is less plain. The portability of diphtheretic poison is greater than is supposed. In my own practice a case occurred where it was carried from Brooklyn to Florida in a trunk. A child had died from diphtheria in a fine house in Brooklyn, and the parents with two others went south. At Palatka, the trunks were unpacked, and a toy rabbit was taken out for a child which the dead child had used for a plaything. In three days the child was taken with diphtheria, of which there were no other cases there, and in five was dead; and the other child a few weeks later succumbed to the disease at a place in the interior of Florida where diphtheria had been unknown. The germs were conveyed by the rabbit and in clothing. We should be careful in always attributing diseases to sewer gas.

Another point is the possibility that much of the typhoid fever does not come from breathing sewer gas, but from drinking water containing the germs of disease, which have been drawn up into the water pipes and are taken into the alimentary canal. In a case under my observation, several children were sick in a large house. I turned the water on below, and then turning it on above, the air was sucked into the pipes below. These faucets were over some drain-pipes connecting with closets where diphtheritic stools had been deposited, and the water above, which was subsequently drank, was thus tainted. This occurs also where there is no trap, or where there is no direct communication with the sewer. In one institution over seventy children were taken with typhoid fever from this cause.

Dr. Janeway closed by explaining some tests of tainted water with chlorate of lithium. A few other remarks were made upon sanitary subjects, and the meeting adjourned after passing a vote of thanks to Mr. Wingate.

SOCIETY NEWS IN BRIEF.

Mrs. T. M. Wheeler and Miss Dora Wheeler entertained their friends at a reception yesterday afternoon at the Strathmore. Many artists and literary people were present.

Mrs. Edward Anthon and her daughters, Mrs. Alfred Renshaw Jones and Miss Madeleine Anthon, held a reception yesterday.

Mrs. Frederick Gross and the Misses Gross gave a reception, at which there was dancing, last evening.

Mr. and Mrs. F. W. Von Stade, Mr. and Mrs. Franklyn Ryder, Miss Roosevelt, Mr. and Mrs. de Navarro, the Misses Taylor, of West Twenty-third-st., and Mrs. S. U. Caldwell held large receptions yesterday.

The Fortnightly Dancing Class held one of its meetings last evening at the house of Mrs. W. W. Shippen in Second-ave.

Mrs. Kissam, of First-place, Brooklyn, gave a large dinner-party last evening, at which Bernstein furnished the music.

A GERMAN AT BAYARD CLARKE'S.

Bayard Clarke gave a german in honor of Miss Florence Clarke last evening at his house in East Thirtieth-st. Lander's orchestra played. Pinard was the caterer. The party was mostly of young people, the entertainment being one of a series of meetings of the Cotillion Club. George Henry Warren, jr., led the german, dancing with Miss Clark. The company consisted, in part, of Delancey Kane, S. Nicholson Kane, F. Ogden, Gouverneur Ogden, T. J. Oakley Rhinelander, Lispenard Stewart, Benjamin Welles, Heyward H. McAllister, Creighton Webb, Miss Daisy Stevens, Miss Fanny Stevens, Miss May Stevens, Miss Tooker, Miss Louise McAllister, Miss Warren, Miss Schermerhorn, Miss Mattie Beekman, Miss Belle Wilson, the Misses Rhinelander, Miss Glover and Miss Newbold.

OFFICIAL RECEPTIONS AT WASHINGTON.

[BY TELEGRAPH TO THE TRIBUNE.]

WASHINGTON, Feb. 2.—The French Minister, M. Outrey, and Madame Outrey, gave an elegant dinner this evening at their residence on Connecticut-ave. The guests were the Secretary of State, Mrs. and Miss Frelinghuysen, Senator and Mrs. Hale, the Italian Minister, Baron De Fara and the Baroness De Fara, the Belgian Minister, Bounder de Melsbroeck, Count von Bueste, of the German Legation, Mr. and Mrs. Henry Adams, Miss Loring, daughter of Commissioner Loring, Miss Dulany, Miss McLane, Captain de Lachere, Military Attache of the French Legation, and John A. King, of New-York. Madame Outrey's toilet was black, as she has very recently been in mourning.

Representative and Mrs. Hiscock entertained John McCullough last evening in their private parlors at the Arlington, after the theatre, having witnessed that actor's representation of *Jack Cade*. The other guests were Mr. and Mrs. Camp, of New-York; Mrs. and Miss Farrell, of Illinois, and their guest Miss Gardner and General McCook.

Cabinet receptions yesterday were very brilliant, the bright sunshine following the snow storm of Tuesday bringing out a large number of visitors. The parlors of the Secretary of State were crowded with visitors during the three hours given to receiving, and there was a bl