

PRACTICAL PAPERS.

DANGEROUS PAPER HANGINGS.

The members of our classes in chemistry can bear witness that we have frequently and faithfully warned them of the danger attending the use of certain substances dyed with arsenical compounds. There is reason to fear that from the increased demand for these articles, in consequence of their cheapness and the brilliancy of the colors which some of them present, that the danger is increasing. We give additional facts:

The sanitary chemist of Breslau, Dr. Franz Hulwa, reports that he has frequently found not inconsiderable quantities of arsenic in tapestries and hangings sent to him for examination. It was not alone in the well known bright green paper that arsenic was found, but also in bluish green, gray, brown, and red patterns, corresponding to similar results in other places.

In most cases it was not due to the direct use of arsenical pigments like Scheele's green, Paris green, Braunschweig or Brunswick greens, orpiment, royal yellow, etc., but the arsenical reaction was so strong that it ought not to be passed over in silence. The presence of arsenic was attributable in some cases to impurities or adulterations; sometimes it was referred to additions made to brighten the shades of colour. Not infrequently suspiciously bright green paper was printed over with harmless dull green to make it more saleable. Such hangings must be the more dangerous because people are deceived in regard to their poisonous characters. In one such case, a dull bluish green pattern was found to contain a surprisingly large amount of arsenic. In another beautiful green and very elegant velvet paper, the arsenic was evidently added to increase the brilliancy of the colours. The amount of arsenic on 1,000 square feet of surface of this paper, enough for a large room, was about two grammes or thirty grains.

Lakes which are precipitates from alkaline solutions of organic coloring matter by means of alum or chloride of tin, frequently have arsenic added to them to make them brighter and more pleasing. These lakes were made of madder, cochineal, and sandal wood; but the brightest and most beautiful are the lakes made with aniline colors with the addition of arsenic. In the lakes we meet with a series of dangerous colors previously but little noticed; these colors must now all be suspected of containing arsenic. Reichardt, of Jena, found from 1.96 to 3.49 per cent. of arsenious acid in such lakes which were designated as free from arsenic. Hallwachs, of Darmstadt, found an enormous quantity of arsenic in a very popular Pompeian red paper hanging. In one French paper, printed with dark red velvet flowers on a gold ground, arsenic was distinctly proven by the Reinsch, Bettendorf, and Marsh tests, and with Fleck's silver solution.

Arsenic is least suspected in the dull gray or brown hangings. These indefinite mixed colors are frequently made from the residues of different dye pots and contain arsenic, partially for this reason, and partially because of the greater or less contamination of the raw materials used in dyeing with this poisonous substance. These phases of the case were observed both in a yellowish gray paper with gold figures and one of light and dark pattern; the brown contained 2.1 grammes on a surface of 1,000 square feet. Although these figures are relatively small as compared with those of Sonnenschein, where green papers contained 1.8 to 4.4 grammes of arsenic in a square foot of surface, yet in general the injuriousness of arsenical hangings has been established. Gmelin first proved that living in rooms covered with arsenical paint or paper was very destructive to health; and these facts were substantiated by Oppenheim, Bunsen, Von Fabian, Kletzinski, Phillips, and others. Beside the above mentioned investigators, the following chemists have examined this subject, namely, Gintl, Wittstein, Halley, Williams, Basedow, Vohl, Kirchgaser, Hager, Hamberg, and others. Recently Fleck has furnished the most striking proofs, by his very interesting and rationally conducted experiments, that not only does breathing the arsenical dust loosened from the walls and hangings injure the health, but, that, by the action of moisture and adhesive organic substances, like glue, paste, and gum, the arsenical pigments evolve that terribly poisonous arseniuretted hydrogen gas, which is diffused through the room and may be the cause of dangerous illness. It is desirable, says

Hulwa, to direct public attention to the use of arsenical colors in clothing, artificial flowers, toys, window and lamp shades, wafers, and other articles. The public must be continually taught that arsenical colors have already done much harm and are capable of seriously injuring the health, and ought, as much as possible, to be excluded from common use. The sanitary police of Breslau, acting on Hulwa's suggestion, have passed an ordinance forbidding the sale of goods colored with arsenical dyes or pigments.

SMOKING IN PUBLIC.

Nothing has become more painfully noticeable of late than the increase of smoking, not only among young men, but among mere boys. No sooner has a lad left school and been placed in a shop or office, than he invests in a meerschaum, arms himself with a cigar case, and struggles, through much nausea and many headaches, into something like a relish for birdseye and a "weed." Germany, the paradise of smokers, where smoking has grown to be almost a trait of national character, is beginning to lay strong hand upon juvenile devotees of the pipe. In several cities of the Fatherland the police have received strict orders to stop all smoking by boys under sixteen. These youthful smokers are threatened with fines, and even imprisonment. The reason given for this summary treatment of young smokers is essentially based on physiological considerations. Every German must be a soldier, and as tobacco is declared to be injurious to health, its use, at least during youth, has been forbidden. The State and military grounds for the present action against the boy-smokers of Germany, whilst the immediate causes for the adoption of repressive measures as regards smoking, rest, therefore, upon medical testimony. We are just now inclined to adopt everything of Teutonic origin, and our English lads who think their young nerves require the aid of nicotine to enable them to get through the troubles incidental to the early stages of business life, may be before long tapped on the shoulder by the policeman. Already the action of Germany has produced an interesting correspondence in the leading journals concerning the evils, physical and mental, personal and social, which follow the use of tobacco. Among others, Dr. Drysdale, the Senior Physician to the Metropolitan Free Hospital, in a calm but forcible letter, denounces smoking as a practice "deleterious to health and vitality." Smokers and chewers of tobacco are, he affirms, "subject to most annoying palpitations of the heart, to hoarseness, to blackening of the teeth and swelling of the gums, to weakness of sight, going on to blindness, and to various forms of dyspepsia, with or without diarrhoea." A form of cancer is also caused, he remarks, by the irritation of tobacco on the tongue and of pipes on the lips. His own experience, he adds, makes him "put down the causation of quite a host of ailments to the use of tobacco in some form." The statistics given by Dr. Drysdale, both in reference to the amount of tobacco consumed and the number of diseases and deaths caused by it, are full of warning. In the adverse judgment upon smoking Dr. Drysdale is sustained by many of the most eminent of medical men, living and dead. The "Times" has thought the subject of sufficient importance to devote a leading article to it, commenting more especially upon the selfishness and general want of consideration for others, which smoking engenders. Whatever value may be attached to the medical opinions we have referred to, all must admit that the smoker is a social nuisance. In the streets we are condemned to inhale the rejected smoke from his mouth; and even in our churches and houses we are not free from the lingering smell of his unsavory pipe. Many other are the objections which might be urged to the practice of smoking. How many are the fires it has caused, and how closely associated is it with drinking and kindred vices! But if our youth can be impressed with the fact that it is destructive of all that is essential to true manhood, we may hope that the debasing habit will have received its death-blow. —*London Christian World.*

THE ELECTRIC LIGHT IN PARIS.

Several of the wider streets and squares, and about forty workshops in and about Paris, are now regularly lighted by electricity. The avenue leading from the Grand Opera House is lighted throughout its entire length, and presents a good example of street lighting. The lamps are placed on posts, precisely like the gas lamps, except that the posts are taller and wider apart. The lamps are inclosed in large opal glass

globes, and beyond this do not differ externally from the gas lamps. As the daylight fades away, there comes, without warning, a sudden flash, and every light in the street is burning with an intense white glare. The effect is like daylight, except in intensity. Every part of the street, the immense traffic in the roadway and the people on the walks, every architectural detail of the buildings to the top of the roofs, every object however minute in the windows, the flowers on the balconies, are plainly visible and in their natural colors. The actinic effect is the same as by day, and all colors, both real and artificial, take their true shades. Every sign on wall or omnibus, the minutest patterns in fabrics and the finest print can plainly be seen. People seated before the cafés read their papers by the aid of lights on the opposite side of the way, and yet the most delicate complexions and softest tints in fabrics do not suffer in the white glare of the lamps. Every stone in the road is plainly visible, and the horses move swiftly along as if confident of their footing. Such illumination is the perfection of street lighting. Neighboring streets, though more brilliantly lighted with gas than any American streets, appear dark and gloomy by contrast. Besides the Avenue de l'Opéra there are a number of theatres, halls and public buildings and shops, lighted without and within, and in each case the electric light has superseded gas or it is used where gas would be too expensive. The appearance of the lamps used in Paris is peculiar. The entire globe seems to be filled with light,—no flame or point of light being visible. The color is intense white, occasionally changing to blue or deep yellow for an instant. In some few cases the light is naked, or is placed in clear glass lamps. In whatever manner used it is impossible to look at the light for more than a few seconds. This intensity, and the occasional flickering of the light, are raised as objections to the electric light. On the other hand, why should any one look at the lamps any more than at the sun, and when not looking directly at the light the flickering is hardly noticeable. In halls and shops the lamps may be placed next the ceiling, or behind screens, so that only the reflected light can be seen, and out-of-doors the lamps may be placed overhead out of the range of the eyes. The flickering comes from a variety of causes, and it is doubtful if it can ever be wholly overcome. The points to secure are a steady motive power (a turbine being best), and good carbons in the lamps. Another objection has been found in the deep shadows cast by opaque objects when lighted by electricity. Careful observations both here and in Paris, in halls, shops and streets, failed to show that this is a serious objection where two or more lamps are used. —*Scribner for November.*

WHAT SHALL WE TEACH OUR GIRLS.

Give your daughters a thorough education. Teach them to prepare a nourishing diet. Teach them to wash, to iron, to darn stockings, to sew on buttons, to make their own dresses. Teach them to bake bread and that a good kitchen lessens the apothecary's account. Teach them that one dollar is one hundred cents, that one only lays up money whose expenses are less than his income, and that all grow poor who have to spend more than they receive. Teach them that a calico dress paid for, fits better than a silken one unpaid for. Teach them that a full healthy face displays a greater lustre than fifty consumptive beauties. Teach them to wear strong shoes. Teach them to purchase, and to see that the account corresponds with the purchase. Teach them that they ruin God's images by wearing strong bodies. Teach them good common sense, self-trust, self-help, and industry. Teach them that an honest mechanic in his working dress is a better object of our esteem than a dozen haughty, finely dressed idlers. Teach them gardening and the pleasures of nature. Teach them, if you can afford it, music, painting, and all other arts, but consider these as secondary objects only. Teach them that a walk is more salutary than a ride in a carriage; and that wild flowers are a worthy object of admiration. Teach them to reject with disdain all appearances, and to use only yes or no in good earnest. Teach them that the happiness of matrimony depends neither on external appearance nor on wealth, but on character and grace. Teach them that it is a thousand times better to pass through life solitary and companionless, than to be a discontented partner in a union unblest by love, and not lightened by God's grace. Above all, teach them that matrimony is not woman's only mission, that she has her duty and her place in life, independent of it. —*Chicago Pilot.*