

SCIENTIFIC DEPARTMENT.

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In this department it will be our endeavor to give monthly a concise account of Scientific progress as far as it comes within the scope of an Educational Journal, with reviews of scientific works bearing on education, as they issue from the press. We shall devote attention to the discussion of Sanitary Science and Hygiene in their relation to schools and educational institutions generally. The columns of the *Record* will be open for the discussion of scientific subjects bearing upon education, and we ask the cooperation of our readers, to assist us in accomplishing these objects.

Much interest is at present excited in Chemical circles by what is called Luminous Paint. This paint possesses the property of absorbing light during the daytime which it will emit in the dark. It is proposed to use this substance as a covering for watch-dials by which means they will be luminous at night. It will undoubtedly be employed to advantage for other purposes such as for the lighting of buoys, and for signaling on railways. This paint is very easily prepared, the following being an excellent method. Burn oyster shells for half an hour in a clear fire, pack the burnt shells in a crucible, or similar vessel, with alternate layers of sulphur. Heat the whole at a red heat for an hour. When this operation is completed, select the whitest pieces of shell, pack them in a clear glass bottle, which if exposed to sunlight in the daytime, will give out a pale light in the dark.

The late colliery disaster near Stellarton, N. S., has brought sorrow and suffering to many a home. The immediate cause of the explosion is not certainly known. We are informed that many of the deaths were caused by the choke damp which is always produced by explosion in coal mines. Quite recently a young marine officer, Fleuss by name, has invented an apparatus by means of which one can breathe under water, or in an atmosphere of noxious gases. The dress for diving consist of a waterproof coat and helmet together with a vessel of compressed oxygen and one of caustic soda. As the oxygen of the air, originally in the head-dress, passes through the lungs it is converted into Carbonic acid which is greedily absorbed by the soda. A little oxygen is thus allowed to escape from the reservoir of this gas, and mingling with the nitrogen, originally present, forms ordinary air. When this air is deprived of its oxygen, another supply is obtained. By this means the length of time during which it is possible to remain under water is determined by the amount of oxygen carried down. The inventor states that he "has gone through fire damp and choke damp and could exist in the charged retort of a gas factory." Could not a number of these appliances be kept in the parts of a mine, where works is going on? If this be impracticable an appliance of this kind would be of the greatest service in making