

apparatus, which has received the trade name of "The Arktos," consists, roughly speaking, of a tube bent  $\cap$ -shaped, at the end of one limb being a reservoir which contains strong liquor ammonia. This ammonia should be as strong as possible; although that so well known among photographers as 880 will do, yet Mr. Loftus Perkins, the inventor of the apparatus, informs us that he prefers it much stronger, say 875, a strength he certainly manages to obtain. This bent tube has its air abstracted and is hermetically sealed, and heat is applied to the ammonia reservoir, by which the ammonia liquid parts with its gas. When the source of heat is removed and the gas re-enters the water, the cold is produced at the farther limb of the apparatus in a degree of such intensity as to cause a deposition of the moisture in the atmosphere in the form of dry snow. So great is the cold produced that, as previously hinted, we have seen, and

that too, in a warm room, the solidification of mercury in the vessel into which the end of the tube was dipped. One end of this tube may be called the boiler, and the other the refrigerator, and a condition of success is that the connecting pipe between the two shall be kept cooled while the boiler is being heated, so that all gas passing to the refrigerator may enter it in a comparatively cool state. When this is used on a large scale, it suffices that a fire be applied for two or three hours once a day, by which the refrigeration is rendered singularly perfect. There are minor mechanical details connected with this apparatus, but the general principle is as above stated.

Thus is solved the problem of a process for attaining cold and ice without mechanical aid, and, as the inventor says, "Its abounding efficacy is made evident in its freezing of mercury in the open air."—*British Journal of Photography*.

## POLITICS AND SCHOOLS.

A NEW illustration of the need for dealing with the political problem in its bearing on our schools is offered by the defeat of Dr. E. E. White, of Cincinnati, one of the ablest school superintendents in the country. We suggest this as a subject for discussion at the State and National Association meetings, to devise ways and means to rid our school systems of this incubus. In the face of all the evidence that may be collected to show what a great evil this is, it seems a proper subject. Political influence is everywhere felt from the smallest rural school-house to the high school and college. Merit is nothing when weighed against influence. The places where this is most felt are in cities where there is an aggregation of politi-

cal influence which exists simply as a stumbling block to all progress and reform. No illustrations are needed to attest this fact. The sooner the people will recognize it and make up their minds to put the schools beyond its reach, the better it will be for all concerned. This is the problem of the hour for the public to solve. The corruption of politics must not get into the schools. Our common schools must be directed by educators and not by politicians. It is demonstrated beyond a doubt that politicians do not direct the schools for the benefit of the schools but for themselves. Now, if the schools are to be carried on according to rational methods and in spirit with the progress of the time, they must be given