four elements were known, while now we recognize nearly eighty distinct elementary forms of matter. Germany had not produced any chemists of the first rank until Liebig, whose early instruction was received in the laboratory of a French chemist, Gay-Lussac. By the '30's he was at the height of his fame and had devised the method at present in use for determining the composition of "organic" sub-At this time Wöhler showed by his synthesis of stances. urea---a substance hitherto considered as purely the result of vital action-that organic chemistry must be regarded as the chemistry of compound radicals-while in mineral or inorganic chemistry these radicals were the simple elements. Dumas and Liebig announced their adhesion to this doctrine in their paper before the Académie des

Sciènces, remarking "voila toute la différènce." The old system of formulæ based on Dalton's Atomic Hypothesis came in for reconstruction about the middle of the century. Gerhardt, (1843) was the first to seriously discuss the question, closely followed by Williamson, (1850). It was some time, however, before the system of formulæ deduced from their views was generally accepted.

Hofmann, (1861) was the first to adopt the new system in his lectures, and in 1864 Dr. Odling, the Presi-dent of the Chemical Section of the British Association, congratulated the Section on the agreement now arrived at amongst chemists as to the combining proportions of the elements and the molecular weights of their compounds.

Observations of the natural families into which the elements grouped themselves led to the enunciation of what is now known as the "Periodic Law." In 1864 Newlands showed that when the elements were arranged in the order of the numerical value of their atomic weights their properties, physical and chemical, varied in a recurrent or periodic manner. Though Newlands' theory was laughed at in a way at first the Royal Society some twenty years later awarded him the Davy medal for his discovery ! In 1869, Mendeléeff contributed further facts regarding this "periodic" arrangement of the elements, and their study at the present day is based on that now fully recognized system of classification. By its means the existence of elements yet undiscovered, and of their properties, has been predicted. When Gallium, Scandium and Germanium were isolated they were found to correspond in physical and chemical properties to the elements predicted by Mendeléeff, and to which he had assigned the names "eka-boron," "eka-aluminium" and "ekasilicon."

Perhaps the branch of chemistry in which the greatest strides have been made is Organic Chemistry or as Schorlemmer called it the "Chemistry of the Hydrocarbons and their Derivatives." From the synthesis of urea in 1828 by Wöhler and of acetic acid by Kolbe in 1845 down to the present day when dyes of every shade and tint, drugs, explosives of all kinds, even sugar and indigo can be built up by artificial processes, the development of this branch of the subject has been phenomenal. One has only to glance at any work on organic chemistry to realize this fact.

Consideration of the linking of atoms and groups in homogeneous bodies has occupied the time of many chemists, the phenomena exhibited by substances in their action on polarized light has led to the development of ideas regarding the arrangement of the atoms in space, while the study of solutions of salts has provided the chemist with a means of determining molecular weights. The behavior of substances in solution with regard to their passage through extremely thin porous membranes has shown that there exists the closest possible analogy between the state of substances in solution and the same in the gaseous condition.

The last decade of the century has been fruitful in many developments and discoveries. Chemistry and Physics have become more closely allied, and Physico-Chemical investigation is occupying the time and attention of many workers. All substances usually found in the state of gas have been made to assume the liquid form. To Cailletet and Pictet, Linde, Hampson, Dewar and others is due the credit of these achievements; Hydrogen itself has succumbed, and can even be obtained as a snowwhite solid !

The discovery of argon as a constituent of the atmosphere by Rayleigh and Ramsay led to a further research into certain minerals which, when treated with dilute acid, evolved a gas which was supposed to be nitrogen. It proved, however, to be another new element previously indicated as being present in the sun's atmosphere by Lockyer and named by him Helium. These discoveries did not, however, end here, as Ramsay and Travers in experimenting with liquid air as a convenient source of argon discovered three new gases which they named Krypton (hidden), Neon (new) and Metargon.

So far I have endeavored to show in as few words as possible the enormous progress made during the past hundred years in scientific chemistry. The important field of industrial chemistry I have not touched upon owing to its magnitude. As examples might be mentioned the paraffin industry, both petroleum refining and the distillation of shales by the Scottish oil companies. The extraction of gold from its ores is no longer carried out solely by the rough and ready mechanical means by which our forefathers washed the sand of gold-bearing streams or subjected crushed auriferous quartz to the process of Plant for chemically separating the amalgamation. precious metal by means of chlorine or of potassium cyanide is now found all over the world, and the so-called "tailings" left by amalgamation processes have proved a fruitful source of "the root of all evil" when subjected to modern chemical treatment. Similar progress has been made in all other departments of metallurgy, and in the other great fields of chemical industry.

THE CALENDAR.

Thursday, January 17th.—

4 p.m.—Philosophical Society.

5 p.m.—Y.M.C.A.

- 8 p.m.-Inter-College Club-Y.M.C.A. building.
- Friday, January 18th.-4 p.m.—Lecture by Sir Jno. Bourinot—Room 2. 8 p.m.—Lit.

Sunday, January 20th.—

3.30 p.m.-Sermon by Dr. Milligan-Students' Union. Monday, January 21st.-

4.10 p.m.-Lecture by A. T. DeLury-Chemical Amphitheatre.

Dear Actors all-now that our task is done

Accept my gratitude for victory won.

None better knows how faithfully you worked --How hard you tried-how much you might have shirked.

Thanks for the helping hand, the cheery heart, The willingness with which each did his part. Such earnestness to work true pleasure lends, Bless you for all, but most, that we are friends.

M. H. B.

Note.-Bear in mind Sir Jno. Bourinot's lecture, Friday, January 18th, 4 p.m., Room 2.