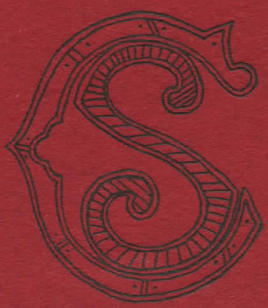
The School Magazine

OF THE

McCABE COMMERCIAL SCHOOL

MAIDSTONE



Vol. 3. No. 8.

McCABE COMMERCIAL SCHOOL MAGAZINE.

VOL. 3. NO. 8. APRIL, 1933.

SCHOOL HISTORY.

The following is the School Calendar :—

Wednesday, 3rd May.—Summer Term begins.
Friday, 5th May.—Old Boys' meeting.
Tuesday, 30th May.—Old Boys' meeting.
Monday, 5th June.—Whit Monday.
Monday, 19th June.—Half-term.
Tuesday, 27th June.—Old Boys' meeting.
Wednesday, 5th July.—Sports Day (provisional date).
Tuesday, 25th July.—Old Boys' meeting.
Wednesday, 2nd August.—End of Term.
Wednesday, 20th September.—Christmas Term begins.

Boys are asked to take particular notice of these dates and to inform their parents, as this will assist them when holiday arrangements are being made.

* * * *

The following are the new boys for the term :—

No. 104.—J. H. Stockbridge, Prep. (St. Augustine's).
No. 105.—H. G. F. Hogg, V (St. Augustine's).
No. 106.—R. May, Prep. (School).
No. 107.—A. J. Taylor, Prep. (St. Peter's).
No. 108.—R. Farrant, Prep. (School).
No. 109.—J. Hooker, IV (School).
No. 110.—C. J. Beale, Prep. (St. Peter's).
No. 111.—K. P. Froud, IV (St. Peter's).

* * * *

This term the following boys left school :—P. E. Hinton, who has had 5 years at this School, has joined the R.A.F. R. J. Harle, after 4 years at School, has gone into business earlier than anticipated owing to the death of his father. He has obtained a post with the Globe Wallpaper Co., Ltd. S. Beale, after 8 years at School, has entered his father's business. F. H. Tolputt has obtained a post with Messrs. Taylor & Co., Agricultural Merchants. The majority of these posts have been found by the School.

Congratulations to J. Elbourn upon passing his elementary typewriting examination.

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On the 10th of March a party visited the Corn Exchange and saw the film organized for the Dr. Barnardo's Homes. Details of other School outings will be found elsewhere in the Magazine.

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The total weight of tin-foil collected last term reached the record weight of just 20 lbs. This is handed over to the Ophthalmic Hospital. The box for the Royal West Kent Hospital was opened at the end of December and of March. The two totals amounted to 9s. 8d. altogether. The R.S.P.C.A. box contained 4s. 11d. If every boy in the School put one penny every month in one of the boxes we should be able to raise nearly £4 a year for these deserving funds. Surely this can be afforded by each boy, especially when we see so many pennies go to the sweet-shops and cinemas.

* * * *

The School Librarian, J. Elbourn, reports a satisfactory term. We have a good collection of books suitable for boys, and an average of about 20 books are out each week. Thanks are due to the following donors of fresh volumes :—

N. Ashton, E. Rowcroft, C. Jessup, J. Beale, Mr. H. Piper, K. Whibley, C. Beale, E. Knott.

* * * *

A portion of the courtyard has been roofed over in order to provide shelter for cycles. This is a great convenience in wet weather.

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Next term circulars will be sent round asking for support for the second annual School Sports. Last year proved a great success, and we hope to adopt a similar organization again this year. We have provisionally reserved Wednesday, 5th July, and in the event of this date proving impossible, due notice will be given. We trust we shall see a large gathering on that occasion. Old Boys are especially asked to endeavour to come along to the Athletic Ground.

* * * *

Nearly 20 boys attended a lecture organized by the League of Nations in the Corn Exchange, and had the privilege of hearing an address on "The Events of 1931," by that eminent scholar, Prof. Gilbert Murray.

In future School examinations will be held in July and December. The class positions in the Easter Term are assessed solely on the class marks. This gives an opportunity for the plodders to gain high positions.

UPPER SCHOOL NOTES.

The ground work put in last year with regard to foreign languages is now producing good results. *La France* is bought and read by all the French students, and an occasional copy of the *Nieuve Londoner Zeitung* materially helps the German class.

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Economics are now being taken by one or two boys, who find this subject of absorbing interest. In Civil Service Examinations this subject carries double the marks of any other.

The last period on Friday afternoon is devoted to Chess for those boys who care to play. This pastime acts as a mental stimulus besides providing a fascinating game. House tournaments are being arranged.

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From a composition on the Boat Race : " At last the great day has come ; ' Oxford via Cambridge.' "

* * * *

Preparations are now being made for those taking public examinations in December, 1933, using the term's work as a basis for selection.

* * * *

It has been possible this term to study extracts from general literature. Dickins, Longfellow, Shakespeare, Mark Twain and De Quincey have provided some of the material. These have been much appreciated.

HOUSE NOTES.

The first complete year of the House Competition resulted as follows :—

	Football.	Cricket.	Sports.	Work.	Total.
1.—School	40	20	17	32	109
2.—St. Peter's ...	0	40	20	31	91
3.—St. Augustine's ..	20	0	13	37	70
	60	60	50	100	270

The Challenge Cup for the House Competition is a new one, presented by the Principal and suitably engraved. It

was presented to D. Potts, as Captain of School House, on Prize Day.

* * * *

School House also claimed the Football Challenge Cup, formerly known as the Town *v* Country Cup, while St. Peter's hold the Cricket Cup, a new one purchased by the boys from the profits of a social evening last winter.

* * * *

School House has chosen as its motto, " Play the Game," and the Captain, D. Potts, and Vice-Captain, F. Tolputt, report that they have high hopes of retaining both challenge cups again in 1933. They hope to do so if each boy will do his share. With the loss of S. Beale (goalkeeper) and F. Tolputt (centre-half) the football team will be considerably weakened, but it will give an opportunity for other boys to display their keenness. K. Morgan and L. Beale put up creditable performances in the boxing competition. It is noticed that the younger boys are very keen on house matters, and most of them turn up regularly to practices and meetings.

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St. Peter's House has chosen as its motto, " One for all and all for one." The Captain, R. Bodiam, and Vice-Captain, R. Harle, report as follows :—"The members of St. Peter's have caught the 'House Spirit' and have pulled together remarkably well. J. Elbourn, G. Stone and R. Harle, of the Upper School, have secured valuable work points for being top in class, and their example has been ably copied by several boys in the Lower School. The House has shown great sporting aptitude, playing good games at cricket and football, and in boxing, victories and 'lickings' have been taken with splendid goodwill. G. Goodchild has shone at boxing, while K. Froud and J. Beale have distinguished themselves at football."

* * * *

St. Augustine's House has chosen as its motto, "Not for myself alone." A. Baxter, who has succeeded P. Hinton as Captain, and the Vice-Captain, G. Haywood, report that their followers are now beginning to get the team spirit of pulling together, though there are one or two who are not yet pulling their full weight. The boxing showed some good sportsmen, especially C. Jessup, B. Joyce, E. Rowcroft and A. Croucher. The team drew their only football match played to date. H. Hogg is a promising player.

Results.

The football matches to date are :—St. Peter's drew with St. Augustine's 3—3 ; School beat St. Peter's 6—2.

The boxing aroused much general interest and the bouts were a credit to winners and losers alike. All who have taken part in the "noble art" have benefited, not only in learning self-defence, but in learning to keep their tempers.

The 4-round junior contests were : — Stone (P) beat Croucher (A) 7—5 ; Jessup (A) beat Goodchild (P) $6\frac{1}{2}$—$5\frac{1}{2}$; Rowcroft (A) beat J. Beale (P) 5—4 ; Joyce (A) beat Whibley (S) $7\frac{1}{2}$—$4\frac{1}{2}$; L. Beale (S) beat Rowcroft (A) $6\frac{1}{2}$—$5\frac{1}{2}$; and K. Morgan (S) beat Stone (P) 8—4.

The senior contest (8 rounds) took place on 3rd March, between R. Bodiam and A. Baxter, in the presence of the Principal and a considerable number of boys. Mr. Williams acted as referee. Both champions, who were loudly applauded, were well matched. The first three rounds were not productive of much excitement, but the fight livened up in rounds 4 and 5. Round 6 was definitely Bodiam's, but his terrific punches seem to have tired him, and Baxter was the more aggressive for the rest of the fight.

Baxter, $13\frac{1}{2}$ points ; Bodiam, $10\frac{1}{2}$.

The House points were :—St. Augustine's, 43 ; St. Peter's, 29 ; School, 19.

THE PRIZE GIVING AND CONCERT.

This event took place on Wednesday, 21st December, 1932, at the Hollingworth Hall. Mr. Piper, who was supported by the whole-time and the visiting staff, in presenting the report for the year, said that the increase in numbers showed that the School still retained the confidence of the district. Satisfactory progress was being made from the Matriculation Class down to the Preparatory Department. He welcomed Mr. Bettle on the Staff, and congratulated Mrs. Stanford on her recent marriage. The tone was good, and friendly competition was encouraged by the House system. The Principal had presented a Champion House Cup, bringing the total number of various challenge cups up to five.

Suitable reference was made to the sporting activities and the great success of the re-formed Old Boys' Association. Special mention was made of the extraordinarily fine achievement of P. E. Hinton in obtaining third place in the whole country in open competition out of nearly 400 candidates for the Civil Service Aircraft Apprentices' Examination. R. Bodiam was 80th on the list.

Referring to the success of the School in obtaining posts for those leaving, Mr. Piper said that of all those who had left School during the last seven terms, he did not know of one who was out of employment.

The Rev. C. W. Martyn referred to the reputation of the School, and said that in Mr. Piper they had young blood and refreshing enthusiasm. The School had extended in numbers and the system of education had been modernized. He was sure that the pupils would receive a good all-round education in academic and commercial subjects.

Mrs. Piper then distributed the prizes.

Honours List.

Civil Service.—P. E. Hinton, R. Bodiam (particulars above).

London Chamber of Commerce.—S. Reynolds.

Pitman's Shorthand (3rd Class).—B. W. Finn, H. Philpott, J. Elbourn.

Typewriting (2nd Class).—T. C. George, H. Philpott; (*1st Class*) F. Harman.

London Trinity College of Music (1st steps).—J. H. E. Piper (honours); (Initial exam.) E. C. Locke (honours).

Prize List.

Form VI and Evening Students.—T. C. George (typewriting), F. Harman (typewriting), S. Reynolds (top Easter Term), H. Philpott (commercial subjects), J. Elbourn (commercial subjects), B. W. Finn (shorthand), P. Hinton (top Summer and Christmas), F. Tolputt (mathematics), P. Hinton (English and mapping), D. Potts (Matriculation work).

Form V.—R. Harle (languages), F. Vidler (commercial subjects), S. Beale (good work).

Form IVa.—K. Whibley (top Easter), G. Goodchild (top Summer and Christmas), E. Shaw (English), G. Haywood (mapping), J. Piper (mathematics).

Form IVb.—R. W. Randall (top Easter), L. Beale (top Summer), F. Youens (top Christmas), E. Austin (drawing), E. Locke (music).

Form III.—L. Morgan (top Easter and Summer), D. Reynolds (top Christmas), R. Corke (good work), E. Haywood (mapping), A. Wheeler (mapping).

Preparatory.—B. Westover (top Easter), R. Westbrook (top Summer), R. Webb (English), B. Reynolds (English), P. Fulljames (history), D. Colinese (spelling), E. Knott (drill), D. Jones, D. Winder, E. Skinner, G. Griffen, R. Relfe, and R. Croucher (good work).

Meccano Exhibition.—P. Hinton (senior), J. H. Piper (junior), M. Higgins (good attempt).

Certificates for General Improvement.

Form VI.—P. E. Hinton, J. Elbourn.

Form V.—W. G. Apps, S. Beale, A. G. Baxter.

Form IVa.—G. H. Stone, A. S. Croucher, K. H. Whibley.

Form IVb.—J. W. Beale, R. W. Randall, F. E. M. Betts.

Form III.—D. A. Reynolds, C. R. Jessup, F. P. Youens, M. G. Higgins, R. S. Brett.

Preparatory.—D. C. Colinese, J. N. Marshall, R. J. Webb.

Challenge Cups.

House Cup.—School House. D. Potts (Captain).

Football Cup.—School House. D. Potts (Captain).

Cricket Cup.—St. Peter's House. R. A. Bodiam (Captain).

Captain's Challenge Cup and Medal.—P. E. Hinton.

Sports Cup (already awarded).—H. T. Pearce.

The concert was thoroughly appreciated by the crowded attendance, and all the items were well applauded. The Preparatory Boys presented "Edgar's Dream," the cast including:—E. Knott, R. Webb, B. Reynolds, R. Westbrook, G. Griffen, B. Ball, D. Winder, E. Skinner, R. Relfe, D. Colinese, P. Fulljames, and Mrs. Stanford.

The Middle School gave a popular version of "St. George and the Dragon," those taking part being E. C. Rowcroft, J. H. Piper, D. A. Reynolds, K. Morgan, A. Croucher, C. Jessup, P. Randall, F. Betts, J. Beale, W. Jones, M. Higgins, R. Wood, L. Noakes, D. Noakes, B. Ball, I. Thorpe, R. Brett, R. Corke, J. Barker and R. J. Randall.

The principal item was the Dotheboys Hall scene from Dickens and the various characters were admirably sustained by R. W. Bodiam, F. Vidler, F. Tolputt, R. Harle, B. Joyce, E. Rowcroft, G. Stone, A. Seymour, K. Bonner, J. Marshall, B. Westover and L. Morgan.

Individual items were rendered by Mrs. H. Piper (pianoforte solo), J. H. Piper (pianoforte solo), Mr. E. G. Bettle (songs), Mr. A. M. Williams (monologue), R. Harle (violin), and S. Reynolds (piano). The Old Boys' Orchestra played selections during the evening, and P. Hinton and A. Baxter acted as stage managers.

SECRETS OF SCOTLAND YARD.

A special publication called *The Police Gazette* is printed daily at Scotland Yard and privately circulated to police officials throughout the country.

Glasgow police headquarters, the Scottish Scotland Yard, can throw a police net right round Glasgow within twenty minutes by a special signal-box system.

New Scotland Yard contains the fingerprints of more than five million known criminals.

When the C.I.D. was created, its staff consisted of 12 detectives, 9 sergeants, and 3 inspectors. Now there are more than 800 'tecs and fully 20,000 constables.

B. BALL.

THE PLACE OF ECONOMICS IN THE SCHOOL CURRICULUM.

A casual glance at many of the Public Examination syllabuses will reveal the word economics. In colleges and evening schools, students of all types are now studying this absorbing subject. It may be therefore of interest to parents and scholars to discuss briefly the merits and attraction of this branch of science. It must be recognized that economics is a study for older pupils, for the would-be economist will find it difficult to follow unless he (or she) has a good grounding in History and regional Geography.

Economics is simply a study of man's business life, singly and collectively. It is therefore a study of man and of welfare, of man's conditions as they are. Economics seeks to explain the present commercial system, not necessarily to justify it, hence it differs from ethics. To achieve this explanation, economics discusses the nature of wealth, its production, and distribution, the system of banking and taxation, of wages and profit. It embraces the heated questions of tariffs and international trade, of the gold standard currency and foreign exchange. Not least it relates the organization of industry and markets. These are some of the main problems dealt with by economics. It is not surprising then that State and municipal bodies, bankers and accountants, to mention a few authorities, place a considerable stress on the importance of this vital subject. But there is even a more essential need for the teaching of economics to-day. Never before has the ordinary citizen been called upon to pass judgment on such momentous issues. It is only by wise and well informed public that popular democracy can be saved from the various forms of dictatorship now raging over Europe.

WILLIAM THE SILENT.

MAKING DAME NATURE SHED HER SECRETS.

The Chemist in Industry.

CHEMISTRY is the science of the elements and the laws which regulate their combination and behaviour under various conditions.

Elements, to the chemist, consist of certain well defined classes of substances, and the purpose of his science is to study their reactions one upon another. And the value of his work in our daily lives is that the fruit of his studies may be to save us from dangerous errors in making the things that we need, and also occasionally to indicate new and simpler ways of making them. In this way the work of the chemist is continually giving us new powers over nature, new capacities to supply new needs.

Chemistry in the Past.

Chemists, and indeed scientists generally, must regard themselves as fortunate in being born into this comparatively enlightened age. Not only has the chemist of to-day an enormous storehouse of knowledge on which to draw, but he is free from that "tyranny of ignorance" to which the scientists of an earlier age were subjected.

The Middle Ages were particularly subject to this form of tyranny, the people of that period having a most profound distrust for the scientific investigator in any sphere. Numerous must have been the earnest enquirers into the conundrums of life and the universe who found themselves clapped into jail as either heretics or witches, and possibly ended by a worse fate still. The story of Galileo is known to every reader. He contended that the earth moved round the sun. This conflicted with the previously held theory that the earth was the centre of the universe. Galileo was required by the Inquisition to retract his public statement. Torture, death, and the ruin of his life work awaited him if he did not do so. He consented to make a formal recantation, and publicly, in the presence of the Inquisitors, to contradict his previous theories. Galileo made the required denial, and at

the end of it inserted in an undertone the remark, "Eppur si muove" ("All the same, it *does* move"). As the common herd treated Galileo, so did they treat the first chemists, with persecution, suspicion and disbelief.

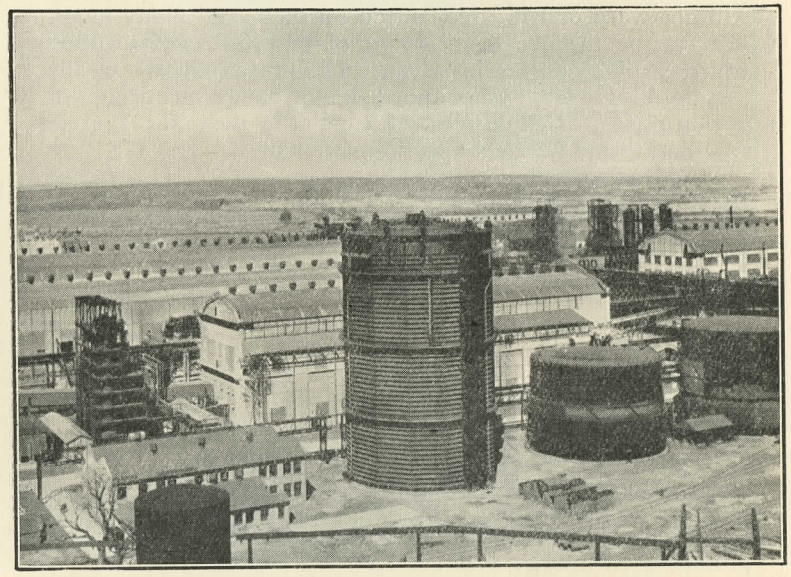
And indeed, one can almost find it in one to forgive them, for assuredly the first chemists were queer people. They were at the very beginning of science, and human thought had not yet trained itself to clear away preconceived ideas, to seek out facts, and only to enunciate theories based on facts, and responding to the test of facts. Theories, often of the wildest kind, ran riot, and the earlier chemists spent themselves in vain searches for an elixir which would give eternal life, for a philosopher's stone which would change base metal to gold, and the like absurdities. Possibly as an effect of the suspicion with which they were regarded, they clothed themselves in weird garments, lived secluded lives among the alembics and crucibles of their laboratories, and generally assumed the air of wizards and necromancers.

It was the Arabs, whose part in world civilization is often under-estimated, who gave science its start. Chemistry, alembic, and many other scientific and mathematical terms are Arabic in origin. But as far as Western Europe is concerned, it was the seventeenth and eighteenth centuries which gave chemistry its true position of importance. In the thirteenth century, otherwise an enlightened and intellectually active period, Roger Bacon, the discoverer of gunpowder, was severely disciplined by his superiors of the Dominican Order of Friars for indulging in chemical research. It was not until the Renaissance and Reformation set free the enquiring and testing faculty in mankind that people began to investigate the problems of chemistry and physics, and it was some centuries before chemistry became founded on a scientific basis. For many years the mind of man turned to theology and philosophy first and foremost, and not until the cult of the human reason, developed by such philosophers as Descartes, Spinoza and Locke, reached its climax in the eighteenth century, did chemistry really begin to flourish.

The great names of chemistry—Henry Cavendish, Humphrey Davy, William Lyon Playfair and many others, are known to many readers. Nor does one wish to take up space by recapitulating that which you learn in your science lessons about the principles and progress of chemical science. It is now linked up with physics, mathematics, and medicine. It enters into almost every human activity. Every commodity on the market depends to some extent upon chemical knowledge, either for its very existence or for its perfection.

The Practical Uses of Chemistry.

To some this may seem rather a far-fetched statement. "Of course," they will say, "we owe to the chemist the gas which is sold to us for lighting and cooking purposes. We owe to the chemist that the petrol we use in our car is refined from the crude natural petroleum. But are there not commodities on the market which mankind has always produced, which were bought and sold long before chemical science or chemists were heard of, such as bread, meat, wine, beer, bricks and stone and wood for buildings, and so forth? Where does your chemist come in here?"



[*Photo by S. Boyle, F.R.P.S.*

General view of a chemical factory. Sulphate plant buildings are immediately behind the large gasholder. A synthesis plant can be seen beyond the pipebridge on the extreme right.

Where does your bread come from? From wheat, you answer, wheat, that is grown in the earth. In that case, you will have heard the phrase, "to make two ears of corn grow where one grew before." That, and more than that, is what the chemist can do and does. The land, like the human body, can get tired, and refuse to grow more wheat until it has had a rest. The agriculture of earlier ages was limited by the necessity of letting the land have a rest periodically.

To-day, the knowledge of the chemist tells him what constituents of the soil are absorbed by the process of growing wheat, and what fertilizers are necessary to replace them and keep the land continually in use. In the same way he can tell us what treatment should be given to land designed for pasture, so that animals feeding on it will grow strong and healthy, and also what should be the composition of their other food. He can tell us what grapes to cultivate to produce given kinds of wine, and how to treat them. He can tell us what clay produces the best bricks, what should be mixed with it, and how it should be baked. He can tell us what building stones will stand damp, what a smoky atmosphere, what dry heat. He can tell us how to treat wood so that it will not warp or rot. He can do all these and many more, and can be the greatest servant of that future civilization which shall be as far in advance of ours as we are of the Middle Ages. Or, by his knowledge of dangerous drugs, of poison gases, of explosives, he can arm men for mutual destruction and wreck the world as we know it.

His Work in Industry.

Generally speaking, it may be said that he applies his knowledge in the following ways :—

1.—As an analytical chemist, his duties being to examine and test for purity raw materials, finished products and by-products.

2.—As a research chemist, investigating problems arising in connection with the operation of manufacture, devising new methods and introducing new products.

3.—As a control chemist, to devise, direct and supervise processes on a large scale.

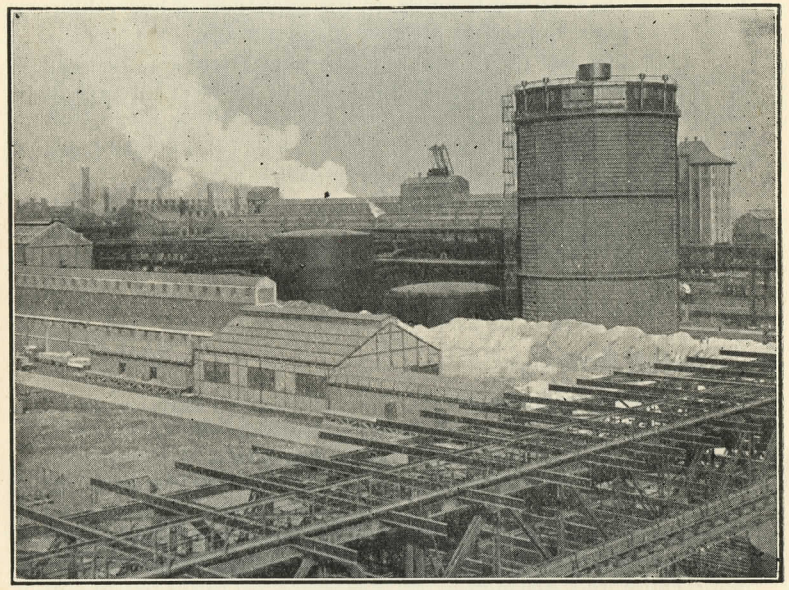
4.—As a consulting chemist, and chemical engineer, with experience in technology, to advise periodically on the general progress of the work, on the development of new projects, and the design and erection of new plant.

Among the industries that employ him are :—Gas, Oil, Dyes, Textiles, Metals, Paints, Indiarubber, Leather, Sugar, Fertilizers, Brewing, Foods, Photographic Materials, Candles. It will be seen that Industrial Chemistry covers a wide range of subjects, and it need not be said that it is usual to specialize in some particular branch.

The Boy that is Wanted.

Industrial Chemistry requires a very large measure of patience. Chemistry is one of the "exact" sciences, and the boy who allows himself to develop a slipshod, "anything will do" habit during his school days should choose another profession.

During the first few years in the laboratory a large amount of dull routine work will have to be done. The same tests may have to be made on many thousands of minerals, or whatever the chemist is paid to analyse. This will be found very tedious after the variety of work that is to be met with



[*Photo by S. Boyle, F.R.P.S.*

An electrical power station (top left) and water gas plant (top middle) from Nitrates Avenue pipebridge. Agricultural chalk can be seen in front of the gasholder.

during the period of training. Dogged perseverance will be necessary to carry the chemist through these years.

It is a mistake to assume that the boy who delights in making experiments in his study at home, or takes a keen interest in the science lessons at school, is necessarily fitted to become an Industrial Chemist. He may be. Such enthusiasm, however, without the ability to visualize the vast potentialities of his science, and to use his imagination constructively, will not suffice to keep him out of the rut.

Success in Industrial Chemistry, as in most of the professions, requires as well, patience, perseverance, and a careful use of the imaginative faculty.

School Days.

Whatever profession a boy decides to adopt, he should bear in mind that a good *general* education is the first essential. All the subjects that he learns at school play their part in developing the intellect and forming the character. In every profession one comes into contact with cultivated men and women; and to have packed the mind with those facts which bear only on one's work, to the exclusion of everything else, is to place oneself at a grave disadvantage.

This does not mean that the boy who intends to become an Industrial Chemist should not take the keenest interest in scientific subjects during his school days. It does mean that he would be extremely unwise to do so to the exclusion of, shall we say, French, History, Literature.

A sound knowledge of mathematics should be acquired. The many valuable contributions of German and French chemists to scientific research make a knowledge of these languages important to the student who wishes to keep abreast of modern developments.

Technical Training.

A system of technical training intended to make a sound foundation on which the student can base his subsequent experience has been developed by the Institute of Chemistry. The object of this Institute has been to set the standard of qualifications desirable for the successful practice of chemistry. To do this, it holds examinations for students in all branches of the science, and those who pass successfully may claim the distinction of Associate of the Institute of Chemistry (A.I.C.). To obtain employment as an Industrial Chemist it is not essential to become an Associate of the Institute. It is, however, obvious that to do so will greatly increase the student's chances of obtaining a good appointment.

For the Associateship the Institute prescribes a minimum of four years' systematic training at a recognized institution, though two years' experience under a Fellow of the Institute in an approved laboratory would be reckoned as equivalent to one year at an institution. There are seventeen universities and over 250 technical colleges in Great Britain and Ireland providing courses in chemistry and allied subjects; in many of the colleges courses are provided for the preparation of students for degrees in science. The would-be chemist should decide in which town he wishes to undergo a course of studies, and should then write to the Education Officer for that district. In the letter it should be clearly stated what branch of chemistry the writer wishes to study.

There will always be a certain number of boys desirous of becoming chemists, whose parents cannot afford university or technical college fees. For such students the Council has made special provision. They will consider applications for admission to the examinations for the Associateship from those who have (1) passed an approved preliminary examination (*e.g.*, London Matriculation) in subjects of general education, (2) received systematic instruction satisfactory to the Council, by day or evening classes, in the prescribed subjects, and have passed approved examinations therein, (3) been engaged in the study and practice of Chemistry for at least ten years, and (4) had their cases recommended for special consideration by a Fellow of the Institute who is personally acquainted with their work.

By these means the student may earn his living during the day at some approved laboratory, and acquire the requisite theoretical training by attending evening classes.

The Cost.

The cost of training varies considerably, both at the universities and at the technical colleges. At some of the principal colleges in London the fees amount to £65 per annum, but they are less at others, especially at some of the provincial universities and colleges. Full information as to fees should be obtained directly from the Secretaries or Registrars of the Universities and Colleges. It should be noted by those fortunate enough to pass on from school to a university that the Institute accepts degrees in science as evidence of training.

Next to those who are able to afford a full university or college training will come those who can give the requisite time to their studies but are unable to afford heavy fees. Such students will have to enrol as " day boys " at one of the Technical Institutes under the control of the Ministry of Education. Such an Institute is the Chelsea Polytechnic which specializes in this subject. The fees are as follows :—

£12 per session for 10 hours per week.
£15 ,, ,, ,, 15 ,, ,, ,,
£18 ,, ,, ,, 20 ,, ,, ,,
£21 ,, ,, ,, 30 ,, ,, ,,

Then will come the student who will have to earn his living during the day and acquire technical knowledge by attending evening classes. Here the fee per session will depend on how many evenings per week are devoted to study. The fee will work out at approximately 20/- per session for one evening per week with an addition of 10/- for each additional evening.

Remuneration and Prospects.

In 1931 the Institute of Chemistry published some interesting figures relating to the remuneration enjoyed by Fellows and Associates of the Institute both at home and abroad.

As these figures give a very good picture of the salary position, we have grouped them together as follows :—

	Fellows		Associates	
	At home.	Abroad.	At home.	Abroad.
Between £150-250	7	—	171	9
,, £250-500	161	4	1,321	72
,, £500-1,000	439	69	524	163
,, £1,000-1,500	141	55	65	39
Over £1,500 or in Private Practice	192	65	50	18

At the time the census was taken there were 5,800 members of the Institute; since 3,828 replied to the questionnaire, the above figures should be helpful in determining what remuneration may be anticipated provided the requisite qualifications have been obtained.

A recent estimate of the number of qualified chemists unemployed gives a figure of approximately 200.

Some Useful Publications.

Regulations for the Admission of Students, Associates, and Fellows (Institute of Chemistry, 30, Russell Square, London, W.C.1, gratis).

The Profession of Chemistry, by Richard B. Pilcher, O.B.E.

What Industry Owes to Chemical Science, by Richard B. Pilcher, O.B.E., and Frank Butler-Jones, B.A., A.I.C. (Constable & Co., Ltd.).

INDUSTRIAL GEOGRAPHY.

Five visits have been made this term, as follows :—The Automatic Telephone Exchange, The Holborough Cement Works at Snodland, Messrs. Foster Clark's factory, and Messrs. Short Bros. at Rochester, and to Messrs. Anstey's Motor Show.

The first held a great fascination for all. The intricate working of the automatic telephone was fully described, our guides explaining and demonstrating each step. The marvellous and yet simple way in which the required number is obtained through electrical impulses being sent through special "selectors," each selecting one figure of the required number, fully engrossed our attention. We were also shown the error of dialling too quickly and thus not giving the required impulses. The operating room proved a source of great interest, and we saw the operators at their work of putting through trunk and sundry calls.

We finished the visit by seeing the power plant and batteries for ringing bells, and alarm gongs, giving the various " tones," and for numerous other purposes.

The visit to Foster Clark's impressed itself upon us by its clean and orderly appearance. The firm prints its own bills, wrappers, and boxes with its own printing machines. Where colouring is needed a different machine is used for printing each colour. The process of making jellies proved very interesting, the large sum of 113,000 table jellies being produced per day.

Even the making of the paper bags and the lids of the tins is carried out on the premises. The making of the soups, lemonade cubes, the canning of fruit, the preparation of custard powders and milk pudding powders form a few of the numerous activities of this well-known factory.

The next visit was to the Holborough Cement works. On approaching the premises we noticed that the houses in the immediate vicinity were covered with a thin coating of white. The "Marle," one of the constituents of the cement, is obtained from a quarry which covers 300 acres. The mixture which is known as "Slurry" has to pass through a kiln 200 feet long and 10 feet wide at one end, tapering down to 9 feet. This kiln revolves, and the "Slurry" gradually works down the kiln. Then to the grinding mills, where the material is ground upon lead balls. At the end of these processes the cement has to pass through a seive, which has 24,000 holes to the square inch. If it will not pass, then the cement is of no

use. The bags in which the cement is stored are sewn up before the cement is put in, with the exception of one corner, which is tucked in, so forming a valve. Combined with the weight of the cement it seals the bag. The visit concluded with a pleasant surprise, the firm supplying the party with an excellent tea.

Then to the premises of Messrs. Short Bros., Rochester. We were amazed at their extensive buildings, the workshops alone taking up a tremendous space. Seeing the floats of the seaplanes being riveted, combined with the explanations of our guide proved interesting. We were then taken into an enormous workshop where the largest flying boat ever built in this country was being repaired. One could hardly realize that such a gigantic monster could take the air. Then we were shown the large tank—over 100 yards long, on which models of floats are tested, so as to cut down air and water resistance to a minimum. A large structure for the conveyance of the experimenter is built over the tank on rails, along which it is driven by an electric motor at varying speeds for different floats. We also saw the "Short Mussel" in which Mr. Short died last year. The bus section was also interesting, and here we saw buses in different stages of construction. The tanks in which the metal is hardened and made to resist sea-water were also shown us. The visit proved a source of much interest.

The last visit of all was to Messrs. Anstey's Motor Show. This was very interesting because our guide explained everything in detail. We were shown the principles and working of the " fluid flywheel," " self-changing gear box," dipping headlamps, and numerous other fascinating mechanisms.

The Olympic Model on show gave one the idea of ideal workmanship, the chromium plating, which shone as silver, giving it a rich appearance. Our guide explained and demonstrated the error of allowing a small defect to go unattended. We were shown part sections of dynamos, carburettors, dipping headlamps, a car battery that had not been kept properly, showing the corroded and crumbling plates. It was explained to us how it is possible for a car fitted with a self-changing gear box and fluid flywheel to be travelling along a road at 50 m.p.h. to be changed by the driver directly into reverse gear. The car will gradually slow down and then reverse, without any damage being done. To conclude, we were shown some of the up-to-date sports and saloon cars.

Thus finished our industrial visits in a very interesting manner.

F. VIDLER.

OLD BOYS' NOTES.

The re-formed Association has now been in existence exactly a year, and during that time we can truthfully say that its progress has been phenominal. Twelve meetings have been held in addition to the social and athletic activities. Nearly 40 members attended the Annual Dinner at the Cannon Restaurant. Between 70 and 80 attended both of the social evenings at the Central Café, and over 100 were present at the Old Palace on the 30th March for the annual dance and whist drive. An entry was made in the Mayor's Carnival procession during Cricket Week and a visit was paid with the school to the Automatic Telephone Exchange. In addition to this, football, cricket, and swimming teams have been organized and several enjoyable games have been played. All of these activities are still being carried on and a special appeal is made for all Old Boys to support some section or another. We are also organizing a Harriers' Club for such members as are interested, and an orchestra has been started for those who are musically inclined.

Old Boys are invited to call at school on the last Tuesday evening of each month during term, when the Association holds its business and social gatherings. The committee meet at 7 p.m., and at 7.30 a short general meeting is held if necessary; the evening concludes with refreshments and games and gives an opportunity for all members to become better acquainted and to enjoy a friendly chat.

The officers of the Association are as follows :—President : Mr. H. J. Piper. Vice-Presidents : all present and past members of the staff and the family of the late Mr. McCabe. Chairman : Mr. W. C. Beale. Vice-Chairmen : Mr. P. C. Allen and Mr. R. A. Woollard. Treasurer : Mr. K. J. Fowles. Joint Secretaries : Mr. A. M. Williams and Mr. J. W. Solman.

The annual subscription which is now due is 2/6, reduced to 1/- for those who have recently left school.

The annual balance sheet was presented at the meeting on 28th March, and a summary is appended.

REVENUE ACCOUNT FOR YEAR.

EXPENDITURE.	£	s.	d.	INCOME.	£	s.	d.
Printing	2	1	8	Old Association	3	16	0
Hire of room ...	1	0	0	Subscriptions and donations	4	10	0
Carnival expenses ...	1	16	0				
Loss on dinner		13	6	Profit on socials ...		4	6
Balance	12	17	0	Christmas "competition"	9	17	8
	£18	8	2		£18	8	2

Balance Sheet at 1st March, 1933.

Liabilities.	£	s.	d.	Assets.	£	s.	d.
Hire of room	1	0	0	Cash at bank	8	19	10
Subscription in advance...		2	6	Cash in hand	1	3	8
Balance, revenue account	12	17	0	Old Association	3	16	0
	£13	19	6		£13	19	6

Treasurer: J. K. Fowles.

Signed as correct,
H. J. Piper, *President.*
W. C. Beale, *Chairman.*

Thanks are due to Mr. Birchall and Mr. Williams for their work on the social committee, to Mr. C. Smith for football, to Mr. T. C. George for cricket, to Mr. J. Whibley for the orchestra, and to many others who have given valuable assistance in several ways, including those who have presented prizes at some of the social functions.

The official O.B. tie and muffler can be obtained at 74, Bank Street. A blazer badge is being made and will be available almost immediately. All old boys of the school are entitled to wear these colours.

Hearty congratulations to K. J. Fowles upon his success in passing the Intermediate Examination of the Society of Incorporated Accountants and Auditors; also to T. C. George upon passing the Intermediate Examination of the Chartered Institute of Secretaries.

We were very pleased to hear that J. Birchall escaped all personal injury in his recent adventure while motoring.

All Old Boys are requested to read the notice at the end of the magazine. News of Old Boys will be welcomed at School for insertion in this section of the magazine.

SCHOOL ROLL. (*Continued*).

Admission No.	Name.	Last known address.	Date of Admission
161	Placé, René	France	May, 1911
162	Lyons, Leslie Asher	3 Albany Terrace, Chatham	Sept., 1911
163	Edwards, Frank James ...	"Kirton," Tovil Road	,, ,,
164	Paffard, Ronald Wilson ...	" Glenboyne," Bower Mount Road ...	,, ,,
165	Williams, Clem.	Linton	,, ,,
166	Williams, Stanley	Linton	Jan., 1912
167	Bailey, Frank	43 Sheals Crescent ...	,, ,,
168	Ives, Leslie	18 Cornwallis Road ...	,, ,,
169	Hilder, Charles Hamilton ...	" Fifield," Bower Mount Road ...	,, ,,
170	Epps, Ronald	Cornwallis Road ...	,, ,,
171	Fairburn, Reginald George...	105 King Edward Road	Jan., 1912
172	Manas, Harry	Germany	,, ,,
173	Cording, Leslie Frederick...	30 Curzon Road ...	May, 1912
174	Woollard, Ewart Frederick...	4 St. Luke's Avenue ...	,, ,,
175	Woollard, Reginald Arthur...	4 St. Luke's Avenue ...	,, ,,
176	Boulden, David	Boughton Monchelsea	,, ,,
177	Thomson, Douglas	"Westfield," Addington	,, ,,
178	Plant, George Cecil Ronald...	1 Tonbridge Road ...	July, 1912
179	Cordingley, Sidney	7 Perry Street ...	Sept. 1912
180	Barling, Percival	Hollingbourne ...	,, ,,
181	Newman, Rodney	35 College Road ...	,, ,,
182	Martin, Marjorie	36 Bower Mount Road	,, ,,
183	Jones, Leslie	44 Royal Road, Ramsgate	,, ,,
184	Veitch, Douglas William ...	"Wickhurst," Lamberhurst	,, ,,
185	Veitch, Alexander William...	" Cossington," Aylesford	,, ,,
186	Telford, William	Deceased, 29th June, 1916	Oct., 1912
187	Boyd, Thomas	"The Manor," Lenham	Jan., 1913
188	Borer, James	6 Douglas Road ...	,, ,,
189	Leach, Cyril Arthur ...	Bromley, Kent ...	,, ,,
190	Brooker, Thomas	" Westlawn," Loose...	,, ,,
191	Gascoine, Stuart Arthur ...	62 Hastings Road ...	,, ,,
192	Thorne, Clarence Sutton ...	49 St. Luke's Road ...	,, ,,
193	Griffiths, George	9 Shepherd Street, St. Leonard's	,, ,,
194	Osborne, Sidney	St. Luke's Road ...	,, ,,
195	Kemp, Charles	1 Mill Street	Mar., 1913
196	Austin, Bertie Jack	105a Upper Fant Road	May, 1913
197	Whibley, Harold George ...	'Addington," Hayle Road	,, ,,
198	Boulden, John	Boughton, Monchelsea	,, ,,
199	Fife, James	" West Taldham," Kemsing	,, ,,
200	Ansett, Ferdinand	19 St. Luke's Road ...	Sept., 1913

SCHOOL EXHIBITION.

On Wednesday, 29th March, an exhibition of Meccano and similar models was held in the schoolroom, when nearly 40 boys exhibited models of every type and also hand-work by the Preparatory. A good number of visitors called during the afternoon and evening, and the judges had a difficult task in assessing the respective merits, but finally decided that the best piece of work was a passenger-cargo boat, three feet in length and including technical details, well thought out and planned to scale, exhibited by E. A. Austin, a boy who shows much mechanical promise.

B. Westover won the junior prize for a paddle-boat, and L. Morgan for assembly of a model private car.

The drawings and plans exhibited great merit, and K. Whibley secured the first prize with a drawing of a railway

engine. Mr. J. E. Barker who kindly acted as judge, assisted by Mr. B. Barton, presented a special prize of a slide rule to F. Vidler for his detailed drawing of an aeroplane, complete with dimensions and specifications.

The preparatory hand-work was judged by Mrs. Piper and resulted in prizes being awarded to E. Knott and E. Skinner. Models of outstanding merit were exhibited by M. Betts, wire covering machine; J. Piper, motor round-about; P. Randall, windmill; M. Higgins, tug; J. Elbourn, lorry; F. Youens, crane, and several others.

JOTTINGS.

Paper was originally made from rag, but now wood pulp is chiefly used. Ordinary common " News " is all wood. In the first case the wood is torn into small shreds between spiked rollers and made into pulp. Unless chemically treated, the paper made from " Mechanical Pulp " turns brown quickly, to stop this the pulp is treated with " Sulphite " and becomes " Chemical Pulp," the paper retains its colour when exposed to the light. Esparto Grass is grown in Africa and is added to give the paper toughness. Various things such as size and thickness is obtained by rolling the paper with big rollers. Different gradations of surface are to be had, by rolling with hot or cold rollers.

There are 2,750,000 motor-cycles in the world. Eighty-five per of them are in Europe. Germany leads with 750,000.

A compass needle does not point to the North Pole, but to the Magnetic North, which lies 1,500 miles west of the true North Pole.

We see with our brain, not with our eyes. We see through our eyes, but the image is on the brain.

LEON NOAKES.

THE CASE OF J.B.

Taking a hurried glance round the little station at New Hythe, one could hardly imagine anyone of the travellers pacing up and down its platform entering upon such tragic circumstances as befell the " J.B.'s " that very day. Well! It fell out like this (notice I said *it* fell out, not one of the " J.B.'s ") that Mr. Jemson Bowsowell, and the Very Rev. Jebudiah Blessum, were for once in their lives (and for only a short while) of the same mind, in that they were travelling to the same place—London. Do not think that this was their last journey together, for had it been so they could not have been heading for the same destination (unless one had taken the wrong turning), for Mr. Jemson Bowsowell was an actor—greatly gifted—in fact he lived by gifts, the gifts which he received; and the Very Rev. Jebudiah Blessum was a bishop, also greatly gifted, he lived by the gifts he gave, and, of course, slightly by those he received.

Nevertheless, the two gentlemen accidentally got into the same compartment, the bishop sat in one corner, and the actor in another. The former put his attaché case—bearing the initals " J.B."—on the rack, and the latter did likewise. Each began to ponder over his special work for the evening, as the actor was taking the part of the Devil in " Faust," and the bishop was to address a large congregation on " The Devil Within."

Each attaché case was a faithful servant to its master, and carried the necessary clothes for his rôle.

Well! It fell off. One of those cases landed itself with a thud at the Bishop's feet.

" I do, most sincerely, and most humbly crave your pardon for the atrocious conduct of my case," said the actor, " and I trust you will extend to me an expression of your entire forgiveness."

" Granted all that," said the Bishop, " shake and let us be friends." (But they shook more later on).

* * * *

" Victoria, Victoria " (piano), " *Victoria*! " (forte), " VICTORIA!! " (fortissimo), chanted the porter—for it sounded like chanting to the Bishop. Whereupon he, and his travelling companion each took a case, nodded " Good-day," said they had been pleased to make each other's acquaintance and left the train.

That evening (it must have been at 7 o'clock, for there's a turn in every seven) found the Bishop confronted with a garb, that would make him appear a practical illustration of the object on which he was about to speak. What should he do? Better alter his text to " The Devil in our Midst." And the actor, what of him? Oh! He merely announced from the stage that some other infernal creature had his clothes, and could not take his part!

J. B.

EXTRACTS FROM OUR MODERN WRITERS.

A ZEPPELIN.

A long, gleaming cigar-like shape, with many protrusions, and with various gondolas hanging below, upon which gleaming propellers whirl. Its sides are decorated with large Black Crosses, and with many numbers. At the rear two

stabilizing fins, and a rudder which waggles as she glides about. Her whole hull seems to be enveloped in a roar of sound from her engines. R. BODIAM.

A RAG AND BONE MAN.

Always trudging along pushing the same old barrow, always wearing the same old shabby suit which he has worn for years. His face is old and wrinkled, showing that it has seen better times. The soles of his shoes are almost worn through to his feet, on which are no socks. But for all his hardships he is always jolly. H. T. JOYCE.

A CITY BY NIGHT.

A vision of the city's gay sect of society who derive most of their pleasure by attending theatres, dances, and other such frivolities, when day has ceased. Then, to its best advantage, can be seen the flash, and glitter of jewels; the elaborate dress of women; the sweet aroma of perfume, and above all the glare of the city lights. It is this picture that throws into relief the one of loneliness, poverty, squalor and slum life of a great city. How many poor creatures, alas! regard the night as their enemy, for they have no shelter save the darkness itself. To such people the illuminations or advertisement hoardings, houses, palaces and hotels must seem a mockery in its attempt to shut out the inevitable night. J. PIPER.

JACOBS ISLAND.

Jacobs Island; ramshackle building, in a way picturesque, but by no means fit for living. This Island is divided from the mainland by a muddy ditch, which, when the tide is out, emits awful smells. The houses overhang the water, their windows are shattered and broken, and the walls are crumbling, it is a wonder the houses stand. The streets are narrow and of cobble stones; rubbish and litter is thrown over them. You must look where you walk, because of the large holes in the road where the cobbles have been torn up at some time, probably in a street fight. Truly a quarter for down-and-outs is Jacobs Island. A. BAXTER.

IMPORTANT NOTICE.—We are anxious to increase the circulation of this Magazine, especially among the Old Boys. All Old Boys are urged to request that their names be placed on the list of regular subscribers. The cost is 2/6 for the three issues during the year. All you need to do is to send a postcard or a telephone message (No. 2623), and the matter can be settled immediately.

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