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## **Record and review of the State Schools Exhibition : held at the Exhibition Building, Melbourne, September 5th to 22nd, 1906**

AUTHOR(S)

Charles Long, State Schools Exhibition (1906 : Melbourne, Vic.)

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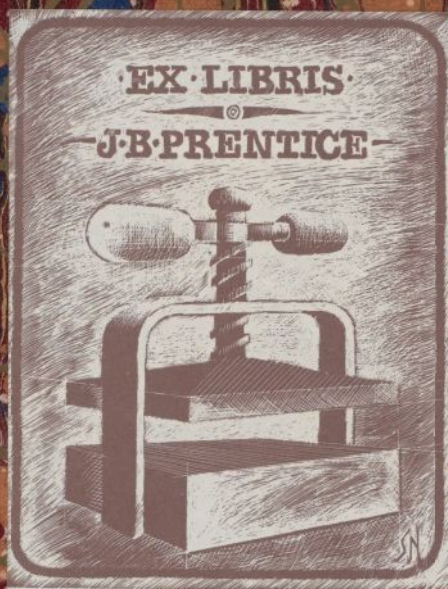
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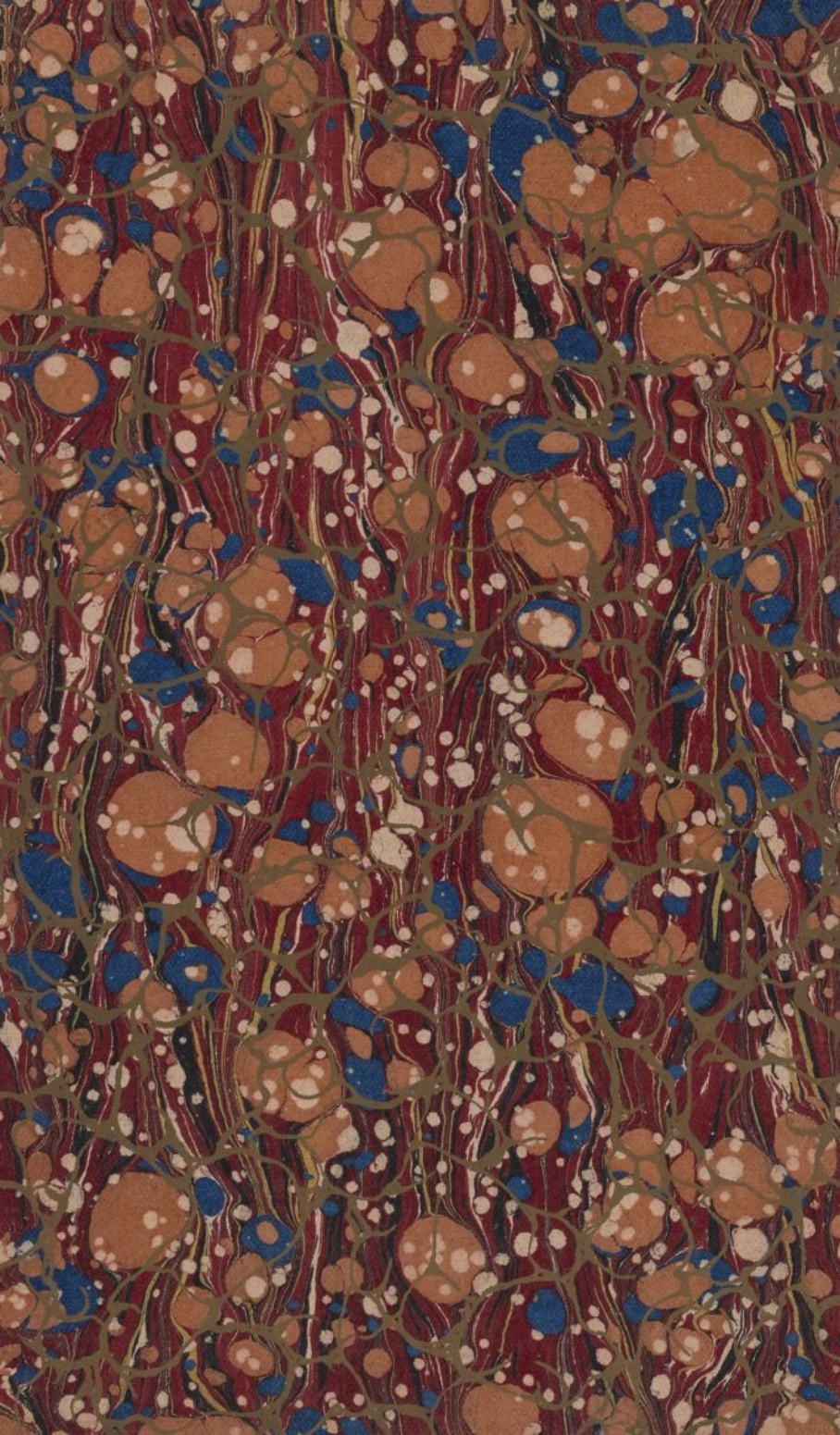
RECORD AND REVIEW  
OF THE  
STATE SCHOOLS EXHIBITION,  
SEPTEMBER 1906.













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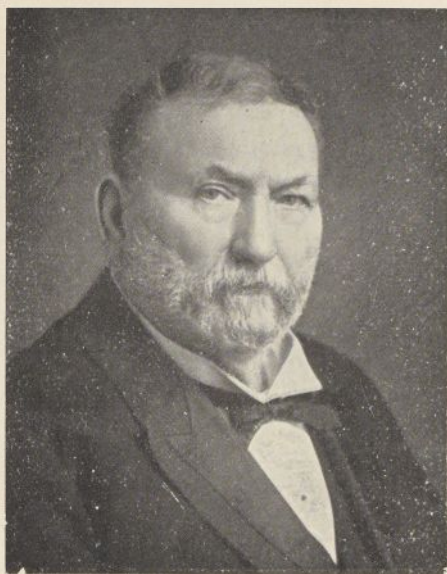
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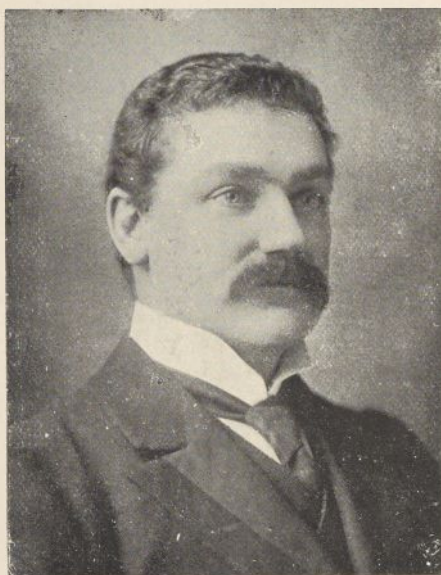








**The Hon. Thomas Bent, M.L.A.,**  
*Premier, Treasurer, and Minister of Railways.*



**The Hon. A. O. Sachse, M.L.C.,**  
*Minister of Public Instruction.*

RECORD AND REVIEW

OF THE

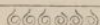
State Schools Exhibition

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HELD AT THE

EXHIBITION BUILDING, MELBOURNE,

SEPTEMBER 5th to 22nd, 1906.



EDITED BY

CHARLES R. LONG, M.A.,

Inspector of Schools, and Editor of the *School Paper* and the  
*Education Gazette and Teachers' Aid*.

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BY AUTHORITY:

J. KEMP, Government Printer, Melbourne.

1908.





## PREFATORY NOTE.

Shortly after the closing of the Exhibition, the following expression of thanks appeared in the *Education Gazette and Teachers' Aid*:—

“The Exhibition was a great success, and the Hon. the Minister of Public Instruction and the Director of Education tender their hearty thanks to the members of the Executive Committee, the teachers, and the children who contributed their aid to secure such a result.”

The Minister also gave instructions that an illustrated report of the Exhibition should be prepared and printed, and that a copy should be sent to each school.





## THANKS OF THE EXECUTIVE COMMITTEE.

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Shortly after the closing of the Exhibition, the following expression of thanks appeared in the *Education Gazette and Teachers' Aid*:—

The members of the Executive Committee desire to convey their best thanks to all who have assisted in making the Exhibition such an unqualified success—to the children throughout the State who prepared such excellent work in all subjects, and thus rendered the Exhibition so attractive; to those who took part in the various concerts for their highly meritorious singing and displays, and for the splendid discipline maintained throughout; to the parents who so ably seconded the efforts of the teachers, and spared neither pains nor expense in preparing their children for the entertainments; to the teachers who worked with such wonderful unanimity of aim, and, with their district inspectors, carried out so thoroughly the desires of the promoters of the Exhibition; to the district inspectors who threw themselves so heartily into the work, and organised so many excellent local exhibitions in preparation for the central one; and to the other officers of the Department, the Director, and the Minister, who gave their ready and sympathetic support to the whole work.

On behalf of the Executive Committee,

L. K. McNAB, *President*.

GEO. H. CARTER, *Organizing Secretary*.



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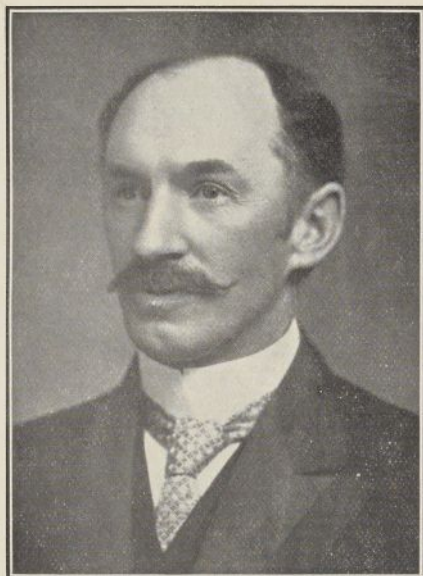
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## Architect :

MR. G. B. H. AUSTIN.





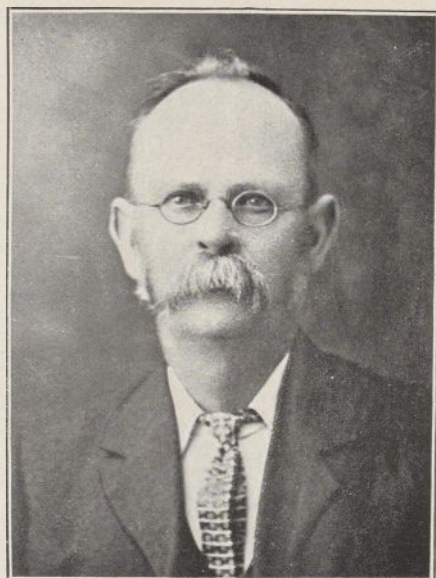
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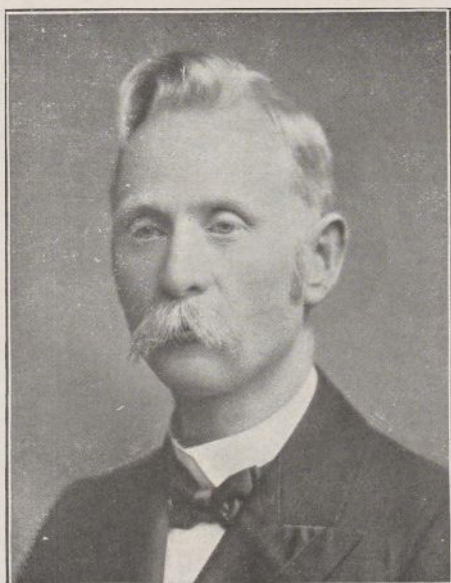


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*Architect.*



**Mr. Charles R. Long, M.A.,**  
*Editor of the "Souvenir Book."*





# THE STATE SCHOOLS EXHIBITION, MELBOURNE.

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## ITS INCEPTION.

In response to the request of the Director of Education (Mr. Frank Tate) there was formed early in 1904, from the various teachers' associations, a committee to consult with the Department on matters of school organization, particularly in reference to the work of the infant-room. It consisted of the following ladies and gentlemen:—From the Head Teachers' Association, Messrs. Carter, L. K. McNab, S. McNab, R. W. Smith, and S. Trend; from the Teachers' Union, Messrs. A. T. Abercrombie, J. T. Raw, and Misses Robertson and Raw; from the Male Assistants' Association, Messrs. J. W. Anderson, B. Ramsay, and C. Searby; and from the Lady Teachers' Association, Misses Douglas, Weeks, and Young.

This committee met from time to time, and, in November, 1904, Mr. Tate, during an interview with its secretary (Mr. G. H. Carter), intimated the wish of the Minister of Public Instruction (Hon. A. O. Sachse) and of himself that an exhibition of State-school work on a large scale should be held, and asked that the matter might be brought before the committee for consideration. Mr. Carter accordingly called the members together, and they very readily agreed to put forward their best efforts to carry out the idea; and it was decided at a meeting held in the Minister's room, on the 1st July, 1905, to hold the Exhibition during the following year.

The committee was enlarged by the addition of Messrs. J. Byatt, P. M. Carew-Smyth, and J. Hocking to represent the Education Department, by Dr. Smyth of the Training College, by the inspectors of schools, and by the following teachers:—Messrs. T. R. L. Austin, W. Bilson, F. M. Bradhurst, W. H. Collens, F. Collins, R. Craig, G. Dean, W. Field, J. W. Gray, C. Halkyard, H. Hanna, A. J. Hart, J. Healy, E. Lees, G. Mackay, P. McGregor, W. R. McNicol, F. H. Rennick, J. Robertson, H. T. Sebire, J. Sheehan, C. Storey, A. H. Williams, W. Dawson, E. J. M. Hamilton, R. Skewes, and Misses Hambleton, Hyem, and Pye. Mr. L. K. McNab was

elected chairman, Mr. John Byatt, treasurer, and Mr. G. H. Carter, organizing secretary. Various sub-committees were appointed to work in conjunction with the general committee; and the inspectors of schools were requested to form in their centres committees who would arrange for local displays as a preparation for the Exhibition in Melbourne.

It was decided that exhibits would be received only from schools directly connected with the Education Department, or with other Education Departments; and, very soon, work for the State Schools Exhibition was being energetically prepared throughout the State, although no prizes were to be offered for competition.

In addition to the exhibits of the productions of pupils and of apparatus, &c., used by teachers, arrangements were made for evening entertainments by the children of the metropolitan and other schools, a sports meeting under the direction of the State Schools' Amateur Athletic Association of Victoria, a cookery class at work, and a publishers' exhibit of books and teaching aids.

As the exhibits were in excess of the space available—immense as it appeared to be—in which to display them, an allotment was made on a basis of the average attendance of each inspectorial district.

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### THE OPENING CEREMONY.

After many months of preparation, the opening day, the 5th September, arrived. Between nine and ten thousand people—adults and children—were present in the main hall of the Exhibition Building to witness the opening ceremony, which the State Governor, Sir Reginald Talbot, had kindly consented to perform. At 2 o'clock, His Excellency arrived, and was received by a guard of honour consisting of the Seventh Battalion of Cadets under Major Eddy.

On the platform were the Minister of Public Instruction (Hon. A. O. Sachse), who presided, the Premier (Hon. T. Bent), the Minister of Water Supply (Hon. G. Swinburne), the President of the Legislative Council (Sir Henry Wrixon), the Speaker of the Legislative Assembly (Hon. F. Madden), the Lord Mayor of Melbourne (Cr. Weedon), Mr. Prendergast, M.L.A., and several other members of the Commonwealth and State Parliaments, Archbishop Clarke and other heads of churches, professors of the Melbourne University, principals of colleges, and officers of the Education Department. Mr. Dawson, Chief Inspector of Schools in New South Wales, was present to represent that State.

A choir of from 1,500 to 2,000 children drawn from the metropolitan schools sang the National Anthem as the Governor entered.

Mr. Sachse, Minister of Public Instruction, in opening the proceedings, said that, about three years ago, some samples of children's work were sent down to the Training College from one or two country schools. These were seen by himself, the Director of Education, and others, and the idea occurred to them that an exhibition of work





His Excellency the Governor of Victoria (Sir Reginald Talbot) declaring the Exhibition open.





from all the schools in the State—nearly 2,000 in number—might be held to show the public what was being done under the revised programme of education. From this beginning had developed the present Exhibition. The 5,000 teachers of the State had thrown themselves heartily into the enterprise, with the result that they had produced an Exhibition unique in the Southern Hemisphere. It would enable the teachers and, to a considerable extent, the children also throughout the State to fraternize, and would produce a healthy spirit of emulation between the schools. The object of his Department was to give each child, whatever its circumstances, a good opportunity for all-round development, and to see that it received a sound English education. This Exhibition would show that the statement made in some quarters that the children were not being grounded in the “three R’s” was baseless. The standard of his Department in this respect was as high as that of any country in the world. But, while utilitarian knowledge was inculcated, the artistic, musical, and physical development of the child and the cultivation of the reasoning faculty claimed, and justly so, a large share of attention. He believed that their nature-study courses followed up by agricultural schools would go far to solve the problem of keeping a proper proportion of the population on the land. The Minister concluded by thanking the committee, and especially its secretary (Mr. Carter), for the way in which they had organized the Exhibition.

The choir sang the Australian Anthem, “Maker of Earth and Sea.” The rendering was reported as being “simply magnificent, and the patriotic ardour of the audience was roused by the lines so clearly enunciated by the young songsters:—

‘Let us united stand,  
One great Australian band,  
Heart to heart, hand in hand,  
Heart and hand Thine.’”

Mr. Tate, Director of Education, who was received with applause, said that, in several respects, the Exhibition which was being opened that day was unique, but his thoughts turned specially to one feature of it—its non-competitive character. There were no prizes offered; and, still, nearly a quarter of a million of teachers and their pupils had been strenuously at work for months in preparation for it. He doubted whether one could find anywhere a better realization of the conditions under which, according to Kipling, the best work is always done:—

“And only the Master shall praise us,  
And only the Master shall blame;  
And no one shall work for money,  
And no one shall work for fame,  
But each for the joy of the working.”

The Victorian school system aimed at developing a fine type of Australian—strong in body, strong in mind, and strong in soul. The

cry of "Australia for the Australians" was often heard, and, sometimes, it was a selfish cry. If they were to hold Australia, they must be worthy to hold it, and he would replace or supplement that watchword by another, perhaps a little harder to realize, "Fit, well-developed Australians for Australia." It was idle to talk of the future greatness of Australia, unless the school life and the family life of Australia were doing their part to produce finely-developed Australians. If the typical Australian was a strong man, strong-bodied, strong-minded, strong-souled, the future greatness of Australia was assured. This country—any country, in fact—needed strong-bodied men and women, able to do a man's work or a woman's work in the world. It needed men and women with well-developed minds, keen, alert, resourceful, able to do their own thinking; and, above all, it needed high-minded men and women, trained in right-doing, loving justice and fair dealing, reverencing all that was pure and lovely and of good report. If the school life and the family life of Victoria were healthy, it was well for Victoria, if not, it was not well. The Exhibition was an attempt to bring together, on the one hand, the home life and the school life, and, on the other hand, to bring the community face to face with what the teachers were doing for the benefit of the children. Our teachers, our law-makers, the public, would never do the best for education if they had "no vision amazing of the goodly house they are raising." Everything that hindered true physical development was wrong educationally; everything that imposed mental work by methods contrary to the laws of healthy mind-action was wrong educationally; everything that set up ignoble ideals of life and dishonest ideals of work was wrong educationally. The essential difference in modern methods, as contrasted with older methods, lay in the great saying: "Education is not a preparation for life merely, it is life here and now." This idea had changed school practice. For proof of this let them look round the Exhibition. There, too, they would see a sufficient answer to the stupid criticisms that nowadays the "three R's" were not given sufficient attention. Victoria should be proud of the unselfish spirit displayed. There were practically no schools in the State not represented. The far-off Mallee school, the log school in the fern scrub of Gippsland, the little lonely places perched among inaccessible hills, or set out on dreary wind-swept plains, had all sent their exhibits to be shown alongside the works of the towns and cities, and how well the country held its own. The children who had done the work, had, many of them, never travelled five miles from home, they had never seen even a shop, a train, the sea, a two-story house. They worked hard before and after school on the farms and in the milking shed. They walked miles to school over bad roads, across flooded creeks, and through forest paths, and yet their work compared well with that of the town children. This justified the boast of the Department that the strength of the system lay in the efficiency of its back-country schools. The teachers themselves were largely responsible for educa-





**The Minister, Director, and some of the Members of the General Committee.**

Misses Young (1), Robertson (2), Weekes (7), Hambleton (8), Douglas (14), Hon. A. O. Sachse (4), Messrs. Tate (5), McNab (3), Carter (6), Dr. Smyth (9), Messrs. Anderson (10), Skewes (11), Austin (12), Hamilton (13), Hocking (15), Long (16), Byatt (17), Dawson (18), Opie (19), Richards (20), Collins (21), Hanna (22), Drummond (23), Summons (24), Sheehan (25), Leach (26), Field (27), Sebire (28), Samuels (29), Rennick (30), Eddy (31), McGregor (32), Collens (33), Gamble (34), Carew-Smyth (35).



tional reform, and without their enthusiasm and loyalty we should have had but little improvement. They had attended training classes and summer schools in their holidays and on Saturdays. They had cheerfully travelled long distances, and done their best to equip themselves for their work. This Exhibition was a further proof of their good will to do their work. It was not put forward in any arrogant way as perfect work, but as an evidence of earnest striving and a promise of future improvement. Wise and prudent nations, such as the Swiss, the Swedes, and the Danes, and, to a great extent, in later days, the Americans, were seeing that it was wise economy to spend time, and thought, and money in developing the greatest natural resources of a country, the hand power, the mind power, and the heart power of its people. There was a popular delusion that, within the last five years in Victoria, the cost of education had gone up, whereas, in fact, it had gone down, except as regards the expenditure on buildings and equipment. Educational reform had been accomplished through the loyalty and enthusiasm of the teachers. The Exhibition was an example of their loyal efforts, and the Education Department was proud of its teachers.

“The Linden Tree” was sung by the choir.

Mr. Bent, Premier and Treasurer of Victoria, who was received with great cheering, referred to the work of the pioneers of education, and gave some personal reminiscences of the early days. He recollected the denominational system, when Scripture lessons formed a part of the work of every day, and the time when each child had to pay sixpence, or a shilling, or more, a week. He himself had to pay half-a-crown when he was 14 or 15 years of age. People, nowadays, looked to the Treasurer to find the money, but in those days, the mothers were the treasurers. In 1851, the total Government grant was £2,691 for salaries. For buildings, nothing was given. Last year, there were 1988 day State schools, on whose rolls were 229,000 children. There were 4,682 teachers, of whom 2,000 were ladies. In 771 private schools, there were, in addition, 46,000 children. The expenditure on education by the State was £724,000. The average cost per child was £4 6s. 0½d. From that tiny spring—less than £3,000—in 1851, the great stream of expenditure on education had never ceased to flow and to broaden, fertilizing every part of our national life. The Government was proud of its Director of Education, and of the work he was doing. It was, he felt assured, having its proper educational effect, producing a refined citizenship. In this respect, they were abreast of any other country that could be named. In fact, when the professors came here, a few months back, from all parts of the world, to the jubilee of the Melbourne University, they said that we stood higher than any other nation, and some of them prolonged their stay to pick up wrinkles. It was very satisfactory to find that the children were obtaining day by day, some knowledge of natural history and



the elements of agriculture. They were acquiring a proper insight into the things that lay around them, and were not becoming merely

“Bookful blockheads, ignorantly read,

• With loads of learned lumber in their head.”

The local chronicles compiled by teachers and pupils were a notable feature of the Exhibition. They were of such absorbing interest that he was going to ask that every one of them should be given to him to be printed. Mr. Bent concluded by reading from the preface of the *Souvenir Book*, Longfellow's fine verses commencing “Come to me, O ye children!”

His Excellency Sir Reginald Talbot, the State Governor, in declaring the Exhibition open, said he might go further than the Minister of Education, and say that the Exhibition was unique in the world's history. Never had children been gathered together from such distant parts to share in one united display. The idea of holding such an Exhibition was a great inspiration, and it had been magnificently realized. He hoped that this would prove the forerunner of many similar Exhibitions in the Southern Hemisphere. Not very long ago, a little writing, a little reading, and a smattering of arithmetic were considered sufficient for a primary education. It was recognised now, far and wide, that the “three R's” were not sufficient; that mind and body and heart must be trained together. He had found many things to admire in Victoria, but nothing had given him greater pleasure than the deep interest taken by all classes and all parties in the education of the children. Although, perhaps, Victoria had been a little slow in starting to put into practice modern theories of education, she had already reached a very high place. Everybody required encouragement—even Governors—and special encouragement was wanted for children in the schools, and for their teachers. This Exhibition would give them some. In the outlying parts of Victoria, he had frequently admired the energy and perseverance displayed by teachers, who, with little appreciation, continued to do their best to bring out all the latent good qualities of their pupils. It was with feelings of the greatest pleasure that he declared this State Schools Exhibition open.

The choir then sang “God save the King,” accompanied on the organ by Mr. Sachse; after which the audience dispersed, some to examine the exhibits, and others to witness the parade and sham fight of cadets in the Oval.

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## SYNOPSIS OF THE PRINCIPAL EVENTS.

September 5 (Wednesday)—

Formal opening by His Excellency the Governor of Victoria, Sir Reginald Talbot, at 2 p.m.—Songs given by the combined choir of Metropolitan District, No. 3—Parade of cadets—Sham fight—Concert and calisthenic display by 1,500 children of Metropolitan District, No. 4, at 8 p.m.



**Group of Professional Officers, Education Department, 1907.**

Mr. F. Tate (Director), (11); Dr. Smyth (Principal, Training College), (9); Messrs. Wm. Hamilton (Assistant Chief Inspector), (10); J. Hocking (Principal, Melbourne Continuation School), (22); P. M. Carew-Smyth (Inspector of Drawing), (17); J. Dennant (Inspector, Technical Schools), (14); J. Byatt (Inspector, Manual Training), (27); E. R. Davey (1); A. Hart (2); Wm. Park (3); J. C. Rowe (4); W. F. Gates (5); A. Dean (6); J. A. Leach (7); C. R. Long (8); J. Holland (12); W. M. Gamble (13); S. Ware (15); R. F. Russell (16); J. Cross (18); F. C. Eddy (19); A. Jackson (20); A. Fussell (21); T. W. Bothroyd (23); W. Henderson (24); J. T. Saxton (25); J. H. Betheras (26); C. Halkyard (28); J. Livingstone (29); S. Summons (30), (Inspectors of Schools).





*September 6—*

Concert and calisthenic display by the children of Metropolitan District, No. 2.

*September 7—*

Morning visit by Her Excellency Lady Talbot—Concert and calisthenic display by the children of Metropolitan District, No. 5.

*September 8—*

Exhibition inspected in the morning by Lady Talbot, Mr. A. Williams (Director of Education, South Australia), and nuns from the Roman Catholic schools—Concert and calisthenic display by the children of Metropolitan District, No. 3.

*September 10—*

Morning visit paid by Their Excellencies the Governor-General (Lord Northcote) and Lady Northcote, and Sir Harry Rawson (Governor of New South Wales)—Excursions from Bendigo, Sale, Bairnsdale, and other places—Concert and calisthenic display given by the children of Bendigo District at 2.30 p.m.—Concert and calisthenic display by the children of Metropolitan District, No. 6, at 8 p.m.

*September 11—*

Special trains from Ballarat, Cobram, and Leongatha—Concert at 2.30 p.m. consisting of items rendered by Ballarat and by Gippsland children—Concert and calisthenic display by children of Metropolitan District, No. 1, at 8 p.m.

*September 12—*

Sports meeting under the auspices of the Victorian State Schools Amateur Athletic Association, 3,000 competitors—Cinematograph entertainment—Display of fireworks—Special trains from Geelong and Beechworth.

*September 13—*

Meeting of teachers in connexion with superannuation scheme—Second visit of Her Excellency Lady Northcote—Visit of members of the State Parliament—Display by children of Metropolitan Districts, Nos. 1 and 3.

*September 14—*

Display by children of Metropolitan Districts, Nos. 2 and 4.

*September 15—*

Sports programme—Entertainment by children of Metropolitan Districts, Nos. 5 and 6.

*September 17—*

Lecturettes to teachers—Excursion from the schools of the Heathcote, Kilmore, and Wallan districts—Concert and calisthenic display by the children of Metropolitan District, No. 4.

*September 18—*

Lecturettes to teachers—Excursions from Swan Hill, Eaglehawk, Linton, Ballarat, Bacchus Marsh, and Port Fairy—Entertainment by the children of Metropolitan District, No. 2.

*September 19—*

Lecturettes to teachers—Excursions from Avoca, Maryborough, Wyche-proof, Boort, Warracknabeal, Casterton, Ararat, and Portland—Concert and calisthenic display by children of Metropolitan District, No. 5.

*September 20—*

Lecturettes to teachers—Visit by Premier and the Ministers of Public Instruction and Agriculture—Visit by children from the Ballarat Orphan Asylum—Excursions from Wodonga, Neerim, Echuca, and other places—Procession, through the city, of the 3,000 children taking part in the displays to be given on the Oval—Sports programme—Visit by their Excellencies Lord and Lady Northcote, Admiral Fawkes and Lady Fawkes—Entertainment by children of Metropolitan District, No. 3.

*September 21—*

Excursions from Donald and Mansfield—Display of fireworks.

*September 22—*

Naval displays—Demonstration of wireless telegraphy—Concert by children of Metropolitan District, No. 1.

## A GENERAL VIEW.

It is safe to say that every one was astonished at the extent and variety of the display, which took up all the available space throughout the vast building—ground floor and galleries.\* There were, at the time, 30 inspectorial districts in the State, six in the metropolitan area, and 24 in the country; and each had its court or group of courts filled with exhibits from the schools within its boundaries.

In one of the upstairs rooms, there was a decorated school-room, with wall black-boards and furniture. In it, drawing classes at free-arm work under skilled instructors were to be seen every day.

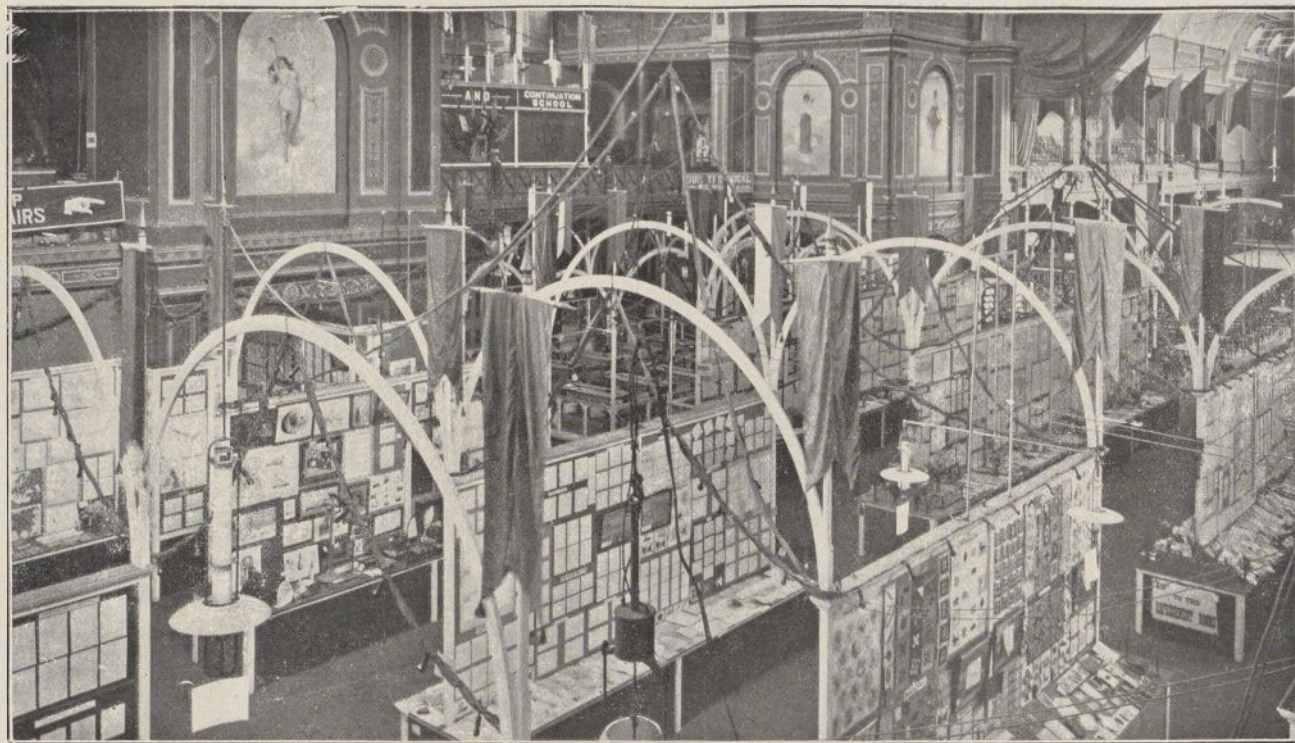
In a prominent position on the ground floor was an ideal equipment for a Sloyd woodwork centre, where groups of boys, drawn successively from different schools, were at work with rule, knife, saw, plane, &c.

In a room of the northern transept, classes of girls were daily busy over a line of gas stoves, preparing wholesome meals and baking dainty cakes, for which they had many customers.

The school garden (flower and vegetable) and the agricultural plots were successfully brought before the public by the heaps of

\* If placed end to end, the boards used for the screens would have reached a distance of 69 miles; the sateen used in covering them was 26,000 yds. The wall space covered by exhibits amounted in all to upwards of 100,000 sq. ft., and the table space to about 30,000 sq. ft. In addition, there were 15 large show-cases. The space occupied by the publishers was about 12 ft. wide by 600 ft. long.





Part of the Main Hall of the Exhibition.



potatoes, cabbages, and other vegetables, collections of cereals and fodder plants, and vases of flowers. Day by day, too, wild flowers were supplied with the names attached, one of many evidences of the new-born interest in nature-study.

Sham-fights by the cadets, and physical culture displays in the form of marching and running evolutions, calisthenic exercises, maypole dancing, &c., filled in many afternoons on the Oval.

Twice a day, concerts were given, the performers representing various inspectorial districts--the Metropolitan, Ballarat, Bendigo, and Geelong.

The exhibits that covered the screens and tables of the various courts were practically numberless. At first, an attempt was made to keep an inventory of them; but, when the numbers ran into tens of thousands, the task had to be abandoned. The brushwork of pupils of all classes brightened up the whole place, and, with the specimens of school work of all kinds, the neatly-executed arithmetical problems, the examples of penmanship and of drawing, the sloyd-workers' models, the collections, &c., made in the study of nature, the maps and the contour models in various materials, the geological collections, the charts (thermometric and barometric) of the weather, the calendars, the observation notes, the local chronicles, and the home-made apparatus, showed how many-sided and complete Victorian primary education had become.

The infant-room work was a highly creditable display. The designs pierced on card and outlined with coloured wool the mat plaiting, the clay-modelling, the drawings from nature with brush and crayon, and the many other forms of hand-and-eye training showed that the true spirit of infant-room teaching is in the schools.

A collection of articles and work produced by the aboriginal children of Lake Tyers naturally attracted special attention.

In the galleries, in addition to some primary-school courts, were located the school books and aids of many publishers and book-sellers, the exhibits of the Training College, the Melbourne Continuation School, the Technical Schools, and those of New South Wales, Tasmania, Ireland, and India.

Admirable as was the appearance of the display in the daytime, the suitability and elegance of the plan,\* devised by Mr. G. B. H. Austin (an architect of the Public Works Department), could be fully appreciated only at night. Gas was used for lighting up the exhibits and electricity for decoration purposes, with a result that was excellent.

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\* The work was carried out by the Metropolitan Gas Co. (represented by Mr. Lewis), and the Electric Supply Co. (represented by Mr. Arblaster).



## A VISITOR'S IMPRESSIONS.

By Wm. Gillies, M.A.

The first feeling upon entering the Exhibition Building is one of bewilderment. There is so much to see. There is a plan, indeed, shown at the door, but that is not what we are seeking. What we need is a clear statement of the ideals towards which—in all this multiplicity of objects—the teachers are working. And this statement we find in the director's paper on educational ideals in the *Souvenir Book* of the Exhibition. What, then, are Mr. Tate's ideals? He aims at developing all the resources of the self, so that the child may become fit in body, fit in mind, and fit in soul. He desires to make education not merely a preparation for life, but life itself; to take the child on the ground where he is, and lead him outward from that ground; to encourage him to examine for himself; to think for himself, and to express his own thoughts in his own way, however crude; to awaken in him love, wonder, and delight in whatever is fine in his daily life. With these ideals before us, we feel ready to understand and to judge the exhibits.

And the first thing that strikes us as we walk up the main hall is the delightful out-of-door freshness suggested by the freshly picked wild flowers. This is a pleasing introduction to the nature-study course, which trains the child, from the first day he enters the school, to use his eyes as he goes along the road. We are soon made to feel that this display of wild flowers is not a feature introduced for this occasion only, but one that symbolizes the attitude of the "new education." Already we begin to understand the new interest that draws the children with willing feet to school; and this understanding is deepened when we turn to the children's nature-study diaries, that form a feature of the show. With a little exercise of the imagination, we can see what these diaries mean in the daily lives of country children. As we read one of their *Observation Books*—sent in by a little forest school—we can see Tom, who has been helping with the cows since daylight, rushing down to the slip-rail to join Fred, who is in the same class. We see them stop to look at a new case-moth that hangs swinging in the wind from a top-rail, to note the long yellow spike of the first onion flower of the season, and a new patch of the "harbinger of spring," to watch a blue wren in its fresh spring-dress of blue black, to note that the robin has not yet left the open fields for the deep woods, to listen, as they cross the creek, to the delightful stammering song of a reed-warbler that has just come back from the north, to watch the woolly-bear caterpillar crawling across the path, to note that the swallows are flying in the upper-air, that the spiders have woven fresh webs in the hedge, and that the high white clouds speak of a day of fine weather. As we pass from school to school, and note the variety of subjects studied, we have at first the feeling that something is lost in not concentrating on fewer objects. But, as



Part of the Metropolitan No. 1 Court.



Part of the Metropolitan No. 2 Court.





we talk to the teachers, we begin to see that the phases of nature that challenge attention in one district are not always those that catch the eye in another district, and that it is wise to give to the teacher a wide field of choice. The personal tastes and attainments of the teacher have also to be considered; and it is well that a teacher whose hobby is bird life should make this a leading subject, and that the teacher who is an enthusiastic gardener should make much of plant life. Here, for example, is the attempt of a teacher with a taste for geology to connect his pet subject with the daily life of the children. The school is in a Gippsland dairying district. Starting with the fact that the cow turns grass into milk, the teacher gives a list of the constituents of milk, and shows where the grass gets these elements. This leads the child to think of the soil in which the grass grows, and of those elements in grass that are given by the soil. Then, by means of clear diagrams, the process by which the local soil was made is shown; the original strata of the neighbouring highlands, the same strata after upheaval, the strata after denudation, the various soil materials that settled in a lake; the gravel, the coarse sand, the fine sand, the clay, and the limestone, and other products of denudation. The earliest forms of plant life on the soil are then shown—lichen, moss, fern—leading up to the grass that now feeds the cow. Thus, the dairy work that goes on daily under the eyes of the children is connected, step by step, with the long history of the earth's crust. It will be seen, also, by this example, that the new methods, while making the work interesting, do not make it merely interesting, or too easy. In a neighbouring exhibit, the teacher of a school on an island in the Gippsland Lakes combines, with a study of the ways of fishes, a graphic description of the arts by which the island-fishers make their living. In another court, where exhibits from the Castlemaine district are shown, we hear how the fruit-growers near one school were led to change one of their customs in consequence of the observations made by the school children. The orchardists were in the habit of sweeping from the boughs of their trees the mud nests of the potter wasp. Examining these nests, the children found that in each case the wasp had provided food for her young by immuring one or two caterpillars. When this had been demonstrated to the fruit-growers, they saw that the wasp, in destroying caterpillars, was the orchardists' friend. We notice that most of the wild flowers of Australia are still without names that can be used in every-day talk; but, here and there, we come on local names, such as wax-flower, blue-bell, old man's blanket, trigger-plant, sneeze-weed, star-thistle. Out of these local names, by a process of natural selection—aided perhaps by Field Naturalist Societies—the best popular names will gradually be chosen. In this matter, however, we must hasten slowly; for the names, once chosen, are probably chosen for all time. If we can attach to our wayside flowers names that have something of the charm of "daisy," "primrose," "foxglove," "buttercup," we shall earn the thanks of

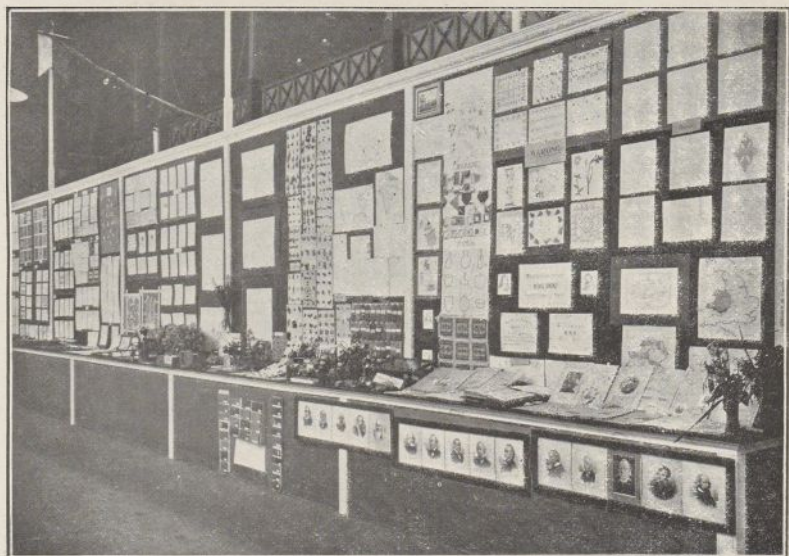
generations yet unborn. The ethical value of all this close personal converse with Nature must be great. Nature has no gifts for the lazy, the inaccurate, the untruthful. It is well that the child should learn this from his own experience, for most people start life with the vague idea that the universe is so loosely constructed that they can, if clever enough, get something for nothing. A teacher tells us that his boys now watch the ways of the birds, instead of shooting at them with a shanghai. In one of the nature diaries, a boy tells how he stopped to help a bee that had fallen—benumbed by a cold wind—into a waterhole. That boy is on the way to become a warm-hearted man, for it is in kindness to bird and beast that we get the natural training for kindness of heart. Nor are the gracious and softer influences of Nature on the grown-up man to be overlooked. How often, in moments of despondency and bitterness, the smell of a spring wood, the song of a bird, or the sudden vision of a wattle-grove in bloom, will break up the hard mood, and flood the heart with fresh hope and faith and tenderness! But this influence demands a preparation. It is to the man who has been drawn, when young, into the charmed circle of Nature's delights that these feelings are likely to come; and we wrong our children if we do not give them the key of the gate that leads to this garden of healing. In every attempt of the reformer to break away from outworn methods, the cry is "Back to Nature!" and, in the schools, this is shown, not alone in nature-study, but in the increased attention that is being given to manual work. When Nature, in the long upward road of evolution, had brought man to the stage of the human hand, she had put him in the way of developing, at a greatly accelerated rate, his power of thought. Nothing in the history of man is more certain than that the use of the hand has had much to do with the evolution of the human brain. Taking this hint, and recognising that the history of the race is repeated in each child, the modern teacher sets his boys to work at drawing, paper-work, cardboard modelling, wood-work, and his girls to learn also to sew and to cook. To neglect this way of development—Nature's way—is to fly in the face of Nature. One of the hardest and saddest of our problems is how to deal with those of our unemployed who, by reason of faulty training, are unemployable; and, in the education of the hand, and of the brain through the hand, we have one of the most promising ways of solving the problem. In one of the wards of New York, about a quarter of the applicants for poor relief consisted of college-bred men. What are we to think of the schools that trained these unfortunate men as if they were destined for the life of a mediæval scholar, rather than for the shop and the exchange, the farm and the factory?

To walk through the courts and look at the drawings, and especially at the brushwork—that most delicate of instruments for manual expression—is an exhilarating experience. Introduced primarily for its use in developing brain power, and giving to the





Her Excellency the Lady Northcote inspecting the Exhibits—  
Part of the Bendigo No. 1 Court.



Part of the Bendigo No. 2 Court.





child eyes to see the finest gradations of form, this training will have far-reaching influence on the æsthetic, and even on the ethical, development of the child. The cultivation of taste, and of the love of the beautiful in form and colour, will brighten the lives of the men and women of the next generation, and will help to cleanse their lives from the sordid and the ugly. When the children become strong enough for the woodwork course, their skill in drawing serves them at every turn. Drawing is made the basis of every bit of woodwork, and, before the bench work begins, every model is planned to scale, and a specification is made out. In districts where woodwork has not yet been provided, the cardboard modelling forms a substitute; and, here again, the children make a drawing of the intended model before proceeding to its construction. Even in the teaching of needlework, drawing is turned to account. A drawing, with coloured crayons, of some familiar and interesting object is placed before the class, and the child is soon eagerly engaged in trying, with coloured wools, to copy the object. When the boys who have enjoyed manual training become our workers, we shall see a revolution in taste. The house, furniture, and garden plot, even of the poor man, will be tasteful, and a higher standard of taste will be shown in public buildings and other works that stand in the common eye. In nothing will the new manual training show results sooner than in the dress of women. The women of the generation that is now growing up will dress with good taste. Neatly dressed, skilled in cooking and sewing, trained to take an intelligent interest in her district and in her native land, and with the large outlook that comes of a generous course of reading in the best English authors, the Australian woman of the next generation may well be happier, and fitter to give happiness to others, than was her mother. With a course of physical culture for both boys and girls added—a course as thorough and scientific as the other courses—the outlook for the coming generation will be a hopeful one.

In none of the exhibits are the new methods made clearer than in those that deal with geography. As usual, the child is led outward from the ground on which he stands. Before he sees a map of Victoria, he is taught to make a map of his own locality. The fields and the hills, the road and the creek—the little world on which he opened his eyes—are mapped out clearly, before he is led to see this little world as a dot on the map of a greater world. Similarly, the work done by water in shaping the earth's surface is made clear to him by the action of the water on the surface of the playground.

Of the excellent exhibition of cooking, it is unnecessary to speak. This is the part of the new programme that has won its way most readily to the approval of "the man in the street."

But what of the subjects, like history, that are book subjects? Can they, too, be brought into living touch with the child's Here and Now? We get an answer to this query when we read on the walls of one court a statement of the history of the locality in which

the children live. We learn from the teacher that this history was largely the work of the children themselves, the stories of the older residents being collected by the pupils. The child is led on from the history of his village to the history of the discovery and colonization of Australia, and, finally, to the history of the British Empire. Before the history of the development of our institutions is given, the child's interest is awakened in the business that goes on in the local court house, the local shire hall, and the polling booth. Every opportunity, too, we learn, is taken to train the child in the duties of a citizen by allowing him to vote on certain school questions, and by encouraging him to take a share in the government of the school sports.

When we turn over a few volumes of *The School Paper*, which furnishes the chief reading matter for the schools, we find that the children are being reared on the best poems and essays and stories that English literature can give. Instead of learning long lists of English writers, their dates, and their works, the child is made to read from the best of these authors. In this way, and through the history text-books, the best thoughts and feelings of the best men and women are made familiar to the child, and his memory is stored with poems and sayings that body forth the ripest wisdom and the highest ideals. If it be true that the words of Dante, committed to memory in youth, "make pathways for the thought of Italy," it is true that the best words of our best authors make pathways for the thought of Victoria.

As we leave the building, our thoughts run back to the great teachers of past time who sowed the seeds that are now, after many days, springing up into goodly plants and trees. Could the great teachers of past times re-visit the earth, what would they think of a well-staffed, well-equipped modern school? One would like to see the homely face of Socrates aglow with interest as he recognised in the method of the modern teacher the method that he employed twenty-three centuries ago to teach the young men of Athens. One would like to walk with his august pupil, Plato, and to hear him say that man is, at last, learning that the ideal state must be composed of citizens who are developed on every side of human nature. One would like to share the pleasure of Pestalozzi and Froebel as they saw the children absorbed in the entrancing task of expressing in gesture, word, or drawing, their own thoughts. With what exclamations of delight would Gilbert White read the nature-study diaries of the children, and how Wordsworth would rejoice to see a class of eager children at work in the open air!

It may fairly be surmised that the success of the revised programme would not have been possible without the co-operation of some of the parents. It is one of the most hopeful signs of the times that parents are beginning to understand that the school should be the social centre of the district where all can meet on common ground and work for "our school." Parents have not



only given money towards school equipment and to beautify the rooms and the grounds, but have helped the children to understand the history of the district, the natural features of the district, and the industries of the district. The school, in short, promises to be, not as of old, a thing apart, but the warm, pulsing centre of the life of each district. The awakening in the parents of interest in the work of the schools and of active sympathy with the teachers in their difficult and important work is one of the best results of this great Exhibition and of the local exhibitions that prepared the way for it.

—*The Age.*

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## PRESS COMMENTS.

### THE CHILD'S INDIVIDUALITY.

On entering the hall for the first time, by way of Nicholson-st., the first impression which one gets from the display is one of monotony. There are maps, charts, exercise-books, heaps of "sewing," cards neatly covered with specimens picked up in the course of nature-study, drawings, and modellings in clay. But, with a closer examination, the monotony disappears, and it can be seen that every district has set its own individuality on its work. More than that, the individuality of the particular school, and of the particular child, is displayed. The exhibits are arranged according to the districts from which they come, and, to any person with the shallowest interest in education, every table is full of information and delight. There is evidence that, under Victoria's educational system, as it exists nowadays, a strong and original individuality is being developed in every child whose school has the good fortune to possess an industrious and sympathetic teacher. And the suggestion of the Exhibition is, further, that the majority of Victorian teachers are of that desirable stamp.

—*The Argus.*

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### THE "NEW EDUCATION."

Surprise at the extent and variety of the display at the State Schools Exhibition, which was officially opened at the Exhibition Building yesterday, must be the dominant feeling of every visitor. For the past two or three months, in nearly every one of the two thousand schools in the State, busy fingers and active brains have been preparing for this event, and the result has been an Exhibition which may fitly be described as unique in its character, and almost bewildering in its magnitude. Such an Exhibition would have been impossible under the old system, when primary education was confined almost entirely to the three "R's," for with regard to reading and arithmetic, at least, it is not possible to embody the results of the scholars' achievement in very material form. But the enlarged scope of the "new education" takes in so many subjects in which the efforts of the pupil are engaged in the making of things that it is possible to make a very interesting and attractive display of the work produced. On the screens and tables which take up nearly the whole available floor-space, are shown thousands of examples of nature-study, drawing, sloyd work, modelling, needlework, experiments in elementary chemistry and other subjects, as treated in the revised programme. It is only to be expected that, when an old system is being superseded by a new one, a good deal of prejudice and antagonism, which may or may not be justified, will be excited against the innovation, and that controversy will be



aroused as to the advantages of the new over the old. The design of the Exhibition is to show parents and the public generally what the children in our State schools are doing. There are many indeed who will say, "*Cui bono?*" What is the use of all these new-fangled ideas? A visit to the Exhibition, and a perusal of the *Souvenir Book*, which describes the aims and work of the Education Department, will be the best means of arriving at a conclusion.

—*The Age.*

#### IMPROVEMENTS IN THE METHODS OF IMPARTING KNOWLEDGE.

The State School Exhibition, which has attracted an exceptional amount of attention during the period of its course, presents in strong relief the improvements which have been introduced in methods of imparting instruction. The variety and energy manifested in the Exhibition is a testimony to the excellence and inspiring quality of the instruction given in the State schools. It is not in nature-studies only that there are evidences of interest and enthusiasm. The ordinary branches of study are not neglected because the curriculum is diversified. Reading, writing, and arithmetic, the three R's, receive their full share of attention, and are benefited by the more active manifestation of intelligence which has been evoked. Geography and history are made living subjects, and, instead of a dry record of capes and dates, which the mind is apt to regard as useless lumber, the facts are surrounded with materials which help to keep an octopus grip upon the memory. After seeing the Exhibition and appreciating the work which has been done by the children themselves, it is possible to realize that the task of education may become a source of mutual delight. A higher appreciation has been given to the ideals of educational progress.

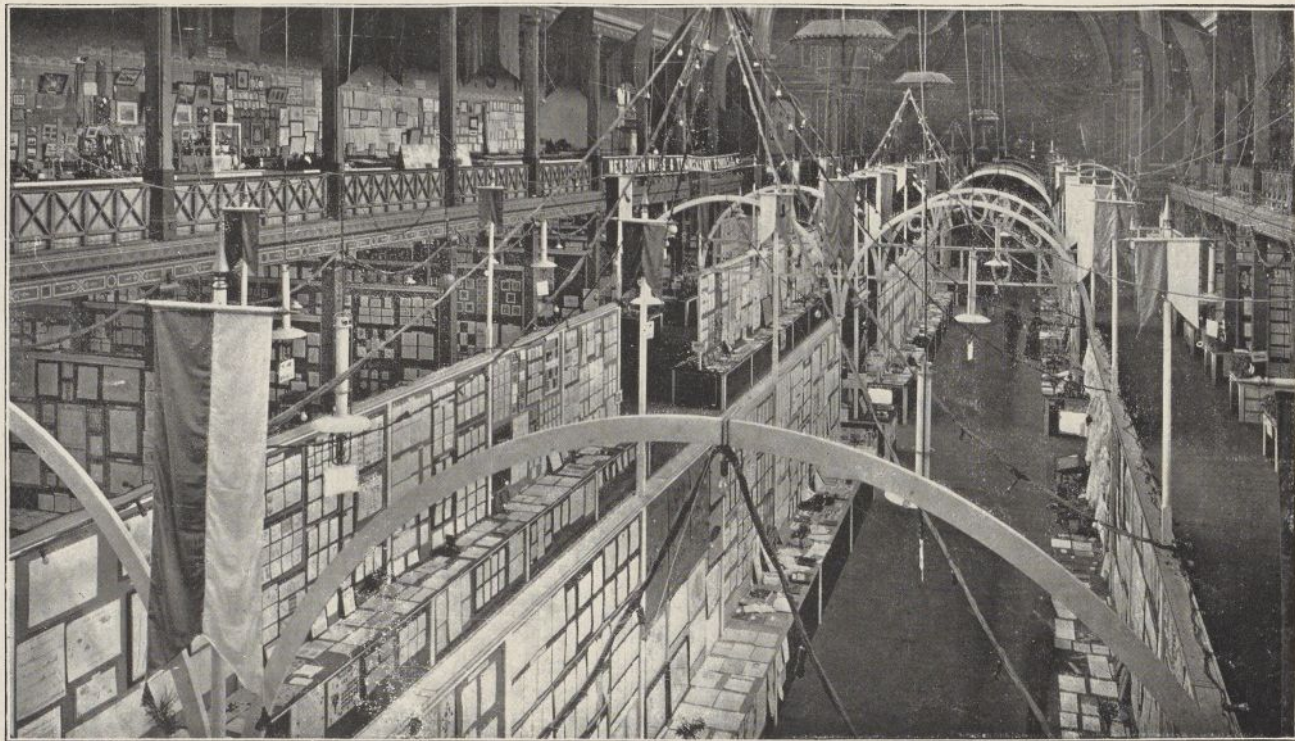
—*The Leader.*

#### THE EXHIBITS CONSTITUTE A LIBERAL EDUCATION IN THEMSELVES.

Credit and praise are due to every man woman and child concerned in the State Schools Exhibition that is being held in the Exhibition Building, Melbourne. It is a unique display, and is bound to have a far-reaching effect in the educational world. Nothing better could have been designed by the Victorian Education Department to bring before the general public the excellent work now being done in our State schools. Not only will the Exhibition serve to do that, but it will result in the teachers and parents being brought into closer touch. It is a fact, much to be regretted, that many parents take so little real interest in the school work of their children.

The tens of thousands of exhibits displayed by the 2,000 schools represented at the Exhibition constitute a liberal education in themselves. No one can take even a hurried survey of them without being impressed with the wonderful strides made in educational methods in modern times. Truly, "the old order changeth." There have been those in Victoria who have cried out against any deviation from the teaching of what they were pleased to call the "three R's." Happily, they are, in the face of overwhelming evidence of the falsity of their positions, beginning to be so ashamed of themselves that their cry is no longer heard in the land. One of the most gratifying features of the State Schools Exhibition is the fact that it gives the lie direct to those who declared that reading, writing, and arithmetic were being neglected for "mere fanciful subjects." The writing exhibits—and there are thousands of them—are admirable; and the charts and models shown go to prove that the boys and girls can not only add, subtract, divide, and multiply, but that they understand the principles underlying mathematical facts. Indeed, the stamp of individuality and sturdy thinking for self is on everything in the Exhibition.

—*The Weekly Times.*



Part of the Main Hall of the Exhibition,





### ADDRESSES BY INSPECTORS.

During the last week that the Exhibition was open, teachers to the number of 500 or 600 assembled in the Concert Hall to listen to addresses on various topics suggested by the show of work. The arrangements were carried out by Mr. Inspector Long, and the chair was occupied on each occasion by the Director. The following were the names of the lecturers, and the subjects they dealt with:—Mr. Inspector Henderson, "Written Composition"; Mr. Inspector Saxton, "Elementary Experimental Science"; Mr. Inspector T. W. Bothroyd, "Geography"; Mr. Inspector Gamble, "Maps and Map-making"; Mr. Inspector Leach, "Nature-study"; Mr. Inspector Davey, "Hobby-work at the Exhibition"; Colonel Hall, "Physical Training"; Dr. Smyth, "Infant-room Work"; Mr. Inspector Gates, "Writing"; Mr. Inspector Fussell, "First Steps in Reading"; Mr. Inspector Burgess, "History"; Mr. Inspector Betheras, "Agricultural Work in State Schools"; and Mr. Inspector Long, "Local Chronicles."

### THE CLOSING OF THE EXHIBITION: VALEDICTORY SPEECHES AND VOTES OF THANKS.

At the last of the lecture sessions, the Premier (Hon. T. Bent), the Minister of Public Instruction (Hon. A. O. Sachse), and the Minister of Agriculture (Hon. G. Swinburne) were present, and the following speeches were made:—

Mr. F. Tate, Director of Education, welcomed the three Ministers. He would ask each of them to be kind enough to say how the teachers' work in connexion with the Exhibition had impressed him. The present Government had shown a sincere desire to do what it could to make education a reality—to make it efficient, from the primary school to the University. Mr. Bent had more than once publicly stated that he had not had in his youth many advantages of education. He (Mr. Tate) hoped that he would not be accused of flattering the Premier when he replied that, in what educationists regarded as the essentials of education, Mr. Bent was a highly educated man. The educationist was striving to produce the man who would be judged not so much by what he knew, but by what he could do—an alert man, one who could make up his mind quickly and decisively as to how he would act. In the power of quick decision, their friend, the Premier, was certainly a highly-educated man, and there was no one in Victoria more sincerely anxious to do what he could for the youth of the State. The Minister of Education was determined to do all that was possible to provide teachers with an environment worthy of them, and of the work they were engaged in doing. They were pleased also to see with them Mr. Swinburne, who had shown such interest in agricultural education.



Mr. Bent, the Premier, who was received with prolonged applause, said that he regarded the teachers as uplifters of humanity. He had come there to express further the Government's appreciation of the work done in organizing and carrying out that glorious Exhibition. Ministers and members of Parliament had already shown their interest by attending. Surprise and admiration had been expressed by all sorts and conditions of people. He was in Parliament when the Education Act of 1872 was passed, and took an active part in the debate, and, from that day to this, teachers had received his help and consideration. Mining and agriculture had been introduced recently at the University at the instance of the Government. A thorough agriculturist should understand chemistry, accountancy, the value of manures, and all kinds of knowledge, in order to make the land yield the best produce. The Government was highly pleased with the work of Mr. Carter, the secretary, and all concerned in organizing the Exhibition. At present he (Mr. Bent) was engaged in heavy legislative work respecting the drinking customs of the people. He would like the education in the schools to be such that it would reduce what he might call the crime of drinking that we had in this community. He did not look for very much from old fogeys like himself in abolishing drinking, but he did look to those whom the teachers were teaching to do so. Coming back to the question of agriculture, he wished to say that, if it could be shown that it would be advisable, he would have no objection to placing a sum of money on the Estimates for an organizer of agricultural education; and not only for that, but for anything else that would help education. He would like to see more pictures on the walls of schools. He could do a little painting himself. He would be prepared to help also in the direction of providing a sum of money. If £4,000 or £5,000 were any good, and it could be demonstrated that the money could be judiciously applied, he would provide it. Pictures and pianos would help to promote harmony and good feeling. The Government were pleased with the teachers' work, and he hoped that they would continue and go on and prosper.

Mr. Sachse, Minister of Education, said that he felt that every teacher was a friend of his. He was very proud of the Exhibition, and of the unanimity with which officers, teachers, and pupils had worked together. It seemed to him that the teachers themselves would derive the most benefit from the Exhibition by the comparisons they were able to make. He was delighted to hear their generous-hearted Premier say that he would help to push forward the schools' decorative work. It was a very poor people indeed who sought only for the loaves and fishes, and neglected art culture and music. He was greatly cheered to learn that the work of Mrs. Woods had resulted in female teachers being provided with better living accommodation in country districts. He was endeavouring to make teachers' home life in country places a little more palatable and attractive than in the past. In the Director, they had a man



Part of the Metropolitan No. 3 Court.



Hobby Work, Local History, etc., in the Metropolitan No. 4 Court.





thoroughly in touch with the teachers. He thanked the teachers for the enormous amount of self-abnegatory work put into the Exhibition. The best exhibit was the singleness of purpose and homogeneity of action on their part.

Mr. Swinburne, Minister of Agriculture and Water Supply, said that he deeply sympathized with the teachers in their work, and thought it a duty to be present. The Exhibition was a revelation to the teachers themselves, the parents, and the rest of the people of Victoria. He was glad that it had been held, because it had put a different idea of national education into the minds of the people of the State. It had corrected some of his own erroneous notions. He had found that everything was being done well, and the exhibits were a great credit to the teachers, and an immense credit to the scholars. He had his ideals about education, and so had others, but, when they went about and saw ill-constructed schools and muddy playgrounds, they felt that there was a difficulty in carrying out new ideals. How could they expect parents to dress children properly unless the schools were fit places for the work they were doing? In time, he hoped and felt sure that, with the generosity of the Premier—the most generous man towards education who had ever sat in the chair of the Treasurer—they would be able to carry out their ideals to make each school “a thing of beauty and a joy for ever.” He was glad that a start was to be made with agricultural high schools, which would give an enormous impetus to the work being done by the Agricultural Department.

At the instance of Mr. Tate, the teachers passed a special and very hearty vote of thanks to Mr. L. K. McNab (president), Mr. G. Carter (secretary), and the committee (Messrs. W. M. Gamble, J. Byatt, E. J. M. Hamilton, R. Skewes, W. Dawson, J. W. Anderson, B. Ramsay, and Dr. Smyth) for their work in connexion with the Exhibition.

Adapted from *The Herald*.

## REVIEWS OF SECTIONS OF THE PRIMARY- SCHOOL EXHIBITS.

### INFANT-ROOM WORK.

*By Miss Hyem, Princes' Hill School.*

One of the most interesting features of the Exhibition was the fine display of infants' work. It attracted much attention in the various courts. The increased intelligence in the methods employed in teaching the lower classes was apparent in the quality and variety of the exhibits, which were of a high standard throughout.

A glance at the well-filled screens revealed to the eyes of the visitor dainty specimens of writing, drawing, brushwork, needlework, &c., the execution of which had awakened and developed beautiful thoughts, trained and strengthened tiny fingers, and brought happiness to the hearts of scores of little people in our infant schools.



Intensely entertaining were the story illustrations by these small artists; and it was no uncommon sight to see a group of "grave and reverend seigniors," led by the Director or a district inspector, studying these childish drawings, and trying to fathom the contents of the mind behind. The movements of "Red Riding Hood" and "Golden Hair," those beloved heroines of the five-year old, had been traced by baby fingers on brown paper with coloured chalks, this valuable exercise giving much helpful play to the child's imagination. These drawings, crudely executed and irresistibly funny, possess high educational value, as a means whereby a child may find expression of his own ideas in the way he loves best.

A close study and appreciation of this picture-speech of our small children may render those whose work is associated with them less liable to present what is beyond the child's power to grasp or understand. Equally educative were the number-pictures, designed by fertile brains, and drawn by tiny fingers, proving how ably this subject is being taught by the thoughtful teacher. With full scope for imaginative drawings in story illustrations and number-pictures, the children are led pleasantly and easily into the realm of language-work, and the writer has no hesitation in saying that the composition of Class I., as seen throughout the Exhibition, would be difficult to surpass by children averaging seven years. The wonder is, that, with the excellent foundation work laid in the infant-room, teachers of senior classes should experience any difficulty in getting good composition from their pupils.

Passing on to the more showy section of the infant-room exhibits, the eye of the visitor rests on numerous mounts of paper-cutting, paper-tearing, paper-folding, mat-weaving, &c., illustrating many occupations, all of which in varying degrees help to train the eye and cultivate the taste of the pupil. To the child, these occupations are an intense delight, satisfying his desire to handle, so aptly called "touch-hunger," and stimulating his innate love of colour. Habits of obedience and concentration are formed, and a taste for what is beautiful is engendered.

Most of the paperwork designs were excellent; but, in a few cases, little attention had been paid to harmony of colour, which was harsh and discordant. Now, it is true that the colours which attract and hold the attention of the young child are the reds, blues, and yellows, so frequently used in the first stages of paper-folding; but it is possible to gradually introduce the softer tones of these colours into the occupation-work with happy effect. A few of the exhibits in this section were too elaborate in design, and beyond the power of the average child to complete without considerable help from the teacher. True, the first stages can be taught by demonstration, but individual correction is absolutely necessary in proportion to the difficulty of the designs attempted. With a heavy infant-room programme, all the subjects of which are taught in a pleasing and attractive manner, would it not be better to select one occupation, at

which the children might accomplish something in the way of original design, rather than attempt several, the preparation of material for which must encroach unduly on the time of the over-burdened infant teacher? This is merely a suggestion for the thoughtful. In selecting a suitable occupation, it is well to remember that the work should be progressive, material inexpensive and easy to obtain, and the work capable of sustaining the interest of the child. Modelling in clay, the only medium through which we can get a class of sixty children profitably and pleasantly employed at manual work, without undue strain upon the teacher, appears to be the most suitable occupation for our present teaching conditions. The exhibits in this section were remarkably good, and but for the difficulty experienced by teachers in packing the models, the display would have been even more creditable.

Judging from the number of beautiful specimens of cardboard sewing, samplers and dainty handkerchiefs, needlework appears to be one of the most popular and attractive subjects of the infant-room curriculum, much excellent work being shown in every court.

Teachers who are interested in the work of the lower classes are indebted to the students of the Training College for their instructive exhibit, the fine series of notes of lessons proving specially attractive to those desirous of helpful suggestions.

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## COMPOSITION.

*By Wm. Henderson, B.A., Inspector of Schools, Horsham.*

When asked to examine and report on the composition sent into the Exhibition, I decided to separate the specimens into three divisions—junior, dealing with Classes I. and II.; middle, dealing with Classes III. and IV.; and senior, dealing with Classes V. and VI. This threefold classification had not been observed by teachers when arranging their lessons in composition. No subject, in my opinion, bears less evidence of direct teaching than does the one under review. Too many teachers rest content with the correction of errors in a formal exercise. Speaking generally, I regard the specimens of the junior division as decidedly satisfactory; but, in the remaining divisions, both the quality and the quantity of the exercises leave much to be desired. The methods adopted by the majority of teachers, when dealing with the incipient stages of composition, are deserving of praise. Continuity, regularity, and plan, with a definite aim, are noticeable in the efforts of Classes I. and II. Objects and pictures have been chosen to interest the pupils; and from these, carefully worded sentences are formed; but I regret to note that plan, continuity, and definite end in view, are consistently discarded when the essays of the middle and senior divisions are treated. The good beginning has not been carried



through. Clearness requires that the parts of a sentence—words, phrases, clauses—should be so arranged as to leave no doubt as to the author's meaning. In many compositions, this rule is seriously violated.

Again, I read specimens in which the subject has been well thought out, the ideas arranged on a definite plan in logical order, and expressed in good English, clear, forcible, and well-balanced. Here, I may mention the importance of encouraging children to read the best books. Excellence in composition is a matter of slow growth, but it is of steady and consistent growth, if the practice be steadily maintained.

Pupils in the senior classes should be taught to criticise their own compositions; and, as criticism is largely a matter of comparison, there must be some standard by which to estimate the value. This standard can be obtained by reading the best English literature carefully and thoughtfully. The well-balanced, musical sentences, the apt quotation or illustration, the happy selection of the right word are examples—these the young student should copy from the works of Addison, Lamb, Dickens, Macaulay, or Scott.

Teachers are inclined to assign a numerical value to the exercises of their pupils far beyond their true worth. Instances were noted to which the maximum was allotted. One would expect to find some phases of excellence in these essays; but a careful reading showed their chief value lay in adherence to rules of orthography. It should be distinctly understood that an exercise in senior composition presupposes something more than correct spelling. The loose use of pronouns is a fruitful source of error. Pupils open with the plural noun, but soon use the singular pronoun. Closer attention should be given to the use of capitals and of punctuation marks. Link-words and connective phrases are conspicuous by their absence.

The word "got" serves a variety of purposes. The catalogue or inventory form of composition is far too general. Crude idioms should be discouraged. These are the chief defects in the work sent into the Exhibition.

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## WRITING.

*By W. F. Gates, M.A., Inspector of Schools, Benalla.*

The writing exhibit was a very large one. It consisted of special sheets for wall display, of copy-books, exercises, and work-books.

Much of the work was good; some of it excellent. It would have taken weeks to make a complete list of the examples that were really good. It must suffice here to say that the examples from two schools—Harrow and Jeetho—were very fine indeed. It was generally admitted that the writing of the Western District, as a whole, came first. Some of the work of Classes I. and II. was very good, and some remarkably good work was shown by little ones





Part of the Metropolitan No. 5 Court.



Part of the Metropolitan No. 6 Court.



whose ages were between six and seven. By the way, it should be the rule to state ages of all pupils when placing work on exhibition.

The influence of the last series of copy-books is noticeable: the influence is for good. But the series has some faults that should be remedied in any future issues.

The old Italian or "ladies' hand" is dead, and no one is sorry. "Copper plate," too, has nearly gone.

In the small exhibit from Ireland there was one copy-book, in which the faithful copying of the head lines would be very hard to excel. The New South Wales exhibit had some good work in three or four styles.

While it is cheering to find much good writing, the value of the Exhibition would be largely lost if we did not note our faults and determine to cure them. It is needful, then, to mention certain faults that are not difficult to discover, and to lay down some standards of criticism. Unfortunately, we have no absolute standard for writing. Critics differ as to which style is the best. But all will agree that the first test for writing must be legibility: it must be quite easy to read. Now this test is easily passed by our writing. The only exceptions to this are some "ornamental" specimens.

The second test is freedom and reasonable speed. Now, here we often fail. Much of the writing is slow—painfully slow. We must see to this. There is no virtue in slowness for itself: there is no virtue in taking half-an-hour to do a quarter of an hour's work. A fallacy that has dominated us for a long time is probably to blame. It has been our aim to attain regularity first, believing that freedom would follow. This is quite wrong. Freedom must be the first object; regularity afterwards comes quite easily.

Some other faults may now be mentioned:—

The junctions are not always correct. The correct method is made quite plain in the copy-book.

The spacing of letters and words is sometimes bad.

There is a certain amount of the writing shown that is much too heavy.

Some of the books do not show enough of the teacher's pencil. The same error must not run down a page.

After legibility and speed, a third test may be applied. The writing should be as beautiful as possible. And here our difficulty begins. There are all manner of styles of writing, and each appears beautiful to some one. A slight slope seems desirable. The curves should be elliptical rather than circular. Flourishes are good practice, though they are best kept out of the body of the writing.

The last point that will be noted is that posture at writing and the holding of the pen both need care. The writing shows that these matters are not always attended to. It is quite unnecessary to argue that the correct holding of the pen and a proper posture of the body are both essential to good writing.



## ARITHMETIC.

*By Jno. C. Rowe, M.A., Inspector of Schools, Warragul.*

It may be taken for granted that one of the important objects in holding the Exhibition was to convey to the general public the impression that the modern methods of teaching are an improvement on those previously obtaining, and to dispel the idea that the recently introduced subjects are likely to thrust into the background those subjects which are considered essential. To those engaged in the profession of teaching, the connexion between the later subjects and the old ones would be more or less evident. For the general public, who were taught under the older methods, the connexion is not so easy to discover.

When we consider how the greater portion of the work in arithmetic was sent to the Exhibition, the question arises—"Was this work so displayed as to give the desired impression?" On every side, from the moment of entrance into the building until every court was traversed, bright specimens of brushwork, well-arranged exhibits of nature-study, maps, relief models, and drawings met the gaze of the visitors. To the casual and sceptical observer, the belief that the newer subjects were displacing at least one of the essential subjects—namely, arithmetic—would probably be confirmed. With the exception of a comparatively few excellent exhibits in number work, the ubiquitous, carefully arranged and neatly written bill of parcels, and, in some courts, well-mounted specimens of the work of separate classes, much of the arithmetic was concealed from view in exercises lying on the benches. To open these exercises, or to turn over the leaves, required more time than many of the visitors could spare. Even teachers who might be thought to be able to guess the contents of an exercise-book "on sight" were deluded into the belief that the exhibits in arithmetic were exceedingly few, by the insufficient prominence given to the subject generally.

To show with the prominence due to this important part of the State school curriculum, to show it as a connected whole from the lowest class to the highest, to show the visitors how much careful attention is devoted to it, and to show that, all through the State, the teachers have honestly endeavoured to make the teaching of it real and in touch with the problems occurring in daily life, every court should have contained at least one row of mounted specimens of the work of every class. If the whole subject had been given as much prominence as was given to number work of the lower classes, a stronger feeling of confidence would have been established in the public mind that the arithmetic taught in our schools is of a practical nature.

Fortunately, some excellent specimens were to be seen which showed that the present programme of arithmetic does not contain much, if anything at all, that is useless. In one court (Kerang) were cuttings from newspapers. On these were printed commercial

transactions, such as may be observed daily in the business columns. Attached were problems based on the commercial transactions, problems requiring a knowledge of money tables, tables of weights and measures, stocks, interest, commission, profit and loss, &c. That much admired exhibit of nature-study in the Sale Court included a chart showing an analysis of the constituents of milk obtained from a dairy herd that came directly under the cognizance of the child who prepared the chart. This chart established the fact that a knowledge of percentage and decimals is indispensable to a dairy farmer if he wishes to know which cow is profitable and which is not, which cow should be eliminated and which kept. That a knowledge of fractions is indispensable was easily demonstrated by the plans drawn to scale and employed by the busy sloyd workers. In addition, many bills of parcels supplied evidence as to the necessity for rapid mental calculations.

We often hear complaints that boys, when they enter commercial houses, cannot add up correctly and speedily, fairly long columns of figures. Judging from the numerous long bill forms exhibited, steps are being taken by the teachers to remove this complaint. Speaking generally, there was little fault to be found with the form in which the bill was made out. The writing was of fairly good character, and the figures were bold and satisfactorily made.

That a faithful attempt is being made to teach all the requirements of the arithmetic programme is revealed by a close inspection of the exhibits. At the same time, a great similarity is preserved through all the exhibits in the form of questions set. This appears to indicate that the form of questions set on the printed examination papers is, in many schools, closely followed. To secure as much thought-effort as possible, variety should be introduced.

Too many sums are crowded into a small space. As much attention should be paid to the setting out of the working of a problem as to the setting out of a drawing. Pupils should be frequently required to link the steps of a problem by appropriate language after the manner of a model solution in a good text-book. There may not be time to do this with every problem in school hours, but, in home exercises, it should always be the rule. The figures should be bold and well formed. Much practice should be given in judging the space required. Clearer thought is likely to be gained by practice in clear arrangement. Poor arrangement of work is a more serious and more common fault than might be imagined. It is shown by many junior teachers and candidates for training. A considerable number of exercise-books contained the working of sums, but no question appeared at the top to show what was the nature of the sum, nor did any figure indicate that the exercises had been taken from a text-book.

In Classes II. and III. much of the work seen was of an abstract character.



The use of formulæ in questions on interest and proportion before the children have had a training and employed their reasoning powers in forming the ratios is not, in my opinion, advisable. The formula is a generalization, and should be used after sufficient experience has been gained from numerous particular instances. There is not a sufficiently free use of diagrams in mensuration. Where diagrams were employed they were generally too small.

It is not to be supposed from the tenor of the remarks made that all the samples of work seen presented instances of the faults enumerated. The success of pupils from S.S. No. 888, Camberwell, in winning scholarships is not to be wondered at when once the sound and careful work has been observed.

Of the same sterling character was the work presented by the pupils of No. 1508, Hawthorn, Jeetho, Korumburra, Fairfield, and Princes Hill. Probably in inspecting such a mass of work others of equal merit were overlooked, but those referred to deserve special commendation.

The setting out of problems by the pupils of S.S. Fairfield and Princes Hill was excellently done. Question, *method*, and solution were set down in order. Their specimens were models in this respect. S.S. No. 250, Flinders, presented good work, as did also S.S. City Road, King-street, and North Melbourne. S.S. 1181, Albert Park, showed some well-arranged III. class work; S.S. Tableland, good work in Class II. Good diagrams in connexion with mensuration were made by the pupils of S.S. North Creswick.

Excellent number charts were sent in by the following:—

Castlemaine and Maryborough, Beechworth, North Brunswick, South Brunswick, Kyneton, Sale, Training College (Sale), Kew, Rathdown-street, Warragul, and Drouin.

Those prepared by the teachers were good models for other teachers to imitate.

Rather too many number facts and pictorial illustrations were presented on the one sheet.

For teaching purposes, two or more sheets with a portion on each would probably be less bewildering to the pupils.

Some effective charts were to be seen in the exhibit from S.S. Rathdown-street, Carlton. The pictorial illustrations were "transfer" pictures mounted on a light-brown paper. Where the charts had been the product of the pupils' self-activity, as in the Kew exhibit, for example, there was a greater gain of number knowledge by the pupils themselves. Several of the charts furnished admirable examples of the principle of correlation, notably those of the Maryborough and Training College exhibits. The number charts exhibited prove how great a change and how great an advance have been made, within the last few years, in the methods of teaching number to infants.





Part of the Ballarat No. 1 Court.



Part of the Ballarat No. 2 Court.



From the nature of the subject itself as expressed in books prepared by the children, many of the methods probably employed in the schools could not be discovered. The absence of certain valuable exercises prompts the following suggestions:—The home exercises in all classes should show problems framed and solved by the children themselves.

Instead of Class I. showing tables only for home work, they could be required to exhibit graphically or pictorially, as shown on number charts, number facts within the range of their comprehension—for example, the equal parts of "16"; the unequal numbers which make up the number "16"; the half of "16"; the quarter of "16."

Class II. could show examples of analysis of numbers ranging from 100 to 999. As a rule, very few children in Class III. clearly understand what it is that each figure in the quotient really tells them.

Exercises could be given to show the connexion between multiplication and addition, and between division and subtraction.

The pupils of Class IV. could illustrate facts concerning fractions (vulgar and decimal) by means of diagrams.

Classes V. and VI. could be given problems embodying the application of facts they have learnt.

*Aids to Teaching Arithmetic.*—In several courts some ingenious devices for teaching arithmetic were met with.

Stick bundles containing *more than 10 sticks* in a bundle were plentiful. There is perhaps nothing very ingenious displayed in preparing bundles of sticks, but it is a rarity to find bundles sufficiently large in schools to enable the knowledge of Class II. in class arithmetic to be tested.

"Arithmetic by Graphs" or "Arithmetic at Sight" was cleverly applied to instruction in area, fencing, the four rules in fractions, average, ratio, and percentages, by means of diagrams drawn to scale. This was in the Horsham Court. A valuable metric chart, showing the relation between length, weight, and volume, was exhibited in the Kerang Court.

A coloured device in the Benalla Court for showing that the square on the hypotenuse of a right-angled triangle is equal to the square on the base plus the square on the perpendicular, was more strikingly convincing than the usual type.

Two useful appliances, one for aiding the pupils in computing the content of the frustum of a pyramid, or, when inverted, of a dam, the other, for illustrating the truth of the statement that the area of a circle is correctly obtained by multiplying half the circumference by the radius were to be seen in the Metropolitan Court No. 5.



Within recent years, the subject of graphs has taken a prominent place in the mathematical education of youth. Some very useful instances of this method of conveying a result to the eye, which, in many cases, could be arrived at only after an involved and laborious process of reasoning, were exhibited in various courts, chiefly in the Melbourne Continuation School Court and the New South Wales Court. It is to be hoped that this method of solution will be more generally adopted.

## GEOGRAPHY.

*By T. W. Bothroyd, Inspector of Schools, Castlemaine.*

Geography was well represented in the various courts of the Exhibition. Very many of the exhibits were excellent, and had a real educational value. They showed how great has been the change in the attitude towards, and in the methods of teaching, this subject.

The most striking relief maps were two in the Beechworth Court. One showed all the contour features of the Beechworth Inspectorate, and disclosed the build of this area in a marvellously clear way. It was a most creditable example of painstaking effort. As a map in relief of the locality, it was, however, open to the fatal objection that it was not, and could not be, a map constructed from the pupils' observations of the geographic features of the locality. Nevertheless, an inspection of it acted as an inspiration in showing how the features within a radius of 3 or 4 miles of the school should be shown. The second of these two maps merits unstinted praise. It was, undoubtedly, the best and the most suggestive in the Exhibition. It represented the floor of the Pacific Ocean and the adjacent continents in relief. Ocean depths were shown. Japan was seen to be standing upon the edge of the continental shelf close to one of the deepest portions of the Pacific. When the ocean-floor was covered with water, it was at once apparent that islands are but the summits of submerged mountains. Inlets were seen as drowned valleys and plains. Such a map would be a most useful aid in teaching commercial geography. Its usefulness would be greatly increased if the world on Mercator's projection were shown in a similar way. If the continents were modelled in relief, no other relief maps would be needed.

Very good relief maps of the locality were shown in the Kerang, Daylesford, Warragul, and other courts. Relief maps of the continents were numerous. These showed very clearly the distribution of highlands and lowlands, the main slopes, the chief lines of drainage, and the great river systems. In connexion with maps such as these, it must ever be remembered that the basis of the knowledge of the great earth forms shown on them must be the careful study of the geographical features of the locality and the implanting in the minds of the pupils of adequate conceptions of them. If it is not, the time spent in their construction has been largely wasted. A defect in several relief



Part of the Geelong Court.



Part of the Benalla Court.





maps was that they gave incorrect ideas of slope. Ranges of mountains were pinched up and seemed to be rising right out of the level plains. No mountain range ever rises above the surrounding surface in this way. The slope of the Victorian highlands, for example, beginning at the coast rises till it attains the summit of the Divide, and then descends to the Murray River. An otherwise excellent relief map of Australia was marred by careless modelling of the outline of the coast. There was no differentiation between the high cliffs overlooking the Great Australian Bight and the gradual slope of the land to the Gulf of Carpentaria. The importance of using suitable shades of colour on relief maps to assist in distinguishing the great earth forms was overlooked by some teachers. Colouring a relief map an even shade throughout deprives it of much of its clearness.

Several very good flat relief maps were seen in metropolitan and country courts. These showed the main features of the build of continents and countries as clearly as on the models in relief. The effect had been obtained by shading. Charcoal and chalk on brown paper were used on several with very satisfactory results. S.S. Ascot Vale sent in several of these maps executed by pupils. They were very creditable indeed, and were much superior, as an expression of geographic thought, to the maps usually executed by pupils, and over which they spend so much time. Some excellent photo. relief maps, the work of teacher and pupils, were on view in the Sale Court.

Pupils' maps were numerous in nearly every court. Their tasteful appearance, and the extreme care bestowed upon them were very creditable to the pupils who executed them, but, in many instances, they were encumbered with too much detail. Mapping is a mode of expressing geographic thought, and nothing which was not first in the mind as a clear geographic idea should appear on the map. Much use, indeed, should be made of mapping by both teachers and pupils; but maps fairly correct in outline and in general proportion, and embodying clear geographical ideas, are all that are wanted.

The large outline maps drawn on green linen in colour were very striking. These would be a most useful aid if employed to recall impressions obtained through the relief maps and from the study of the geography of the locality.

Quadrants for ascertaining the sun's meridian altitude were numerous. The most useful noted came from S.S. Barker's Creek. Charts showing the results of quadrant observations were exhibited in several courts. There is risk that these observations and records may become purely formal, leading nowhither. With the observations of the meridian altitude should be associated observation of shadow lengths, the varying lengths of night and day, the changing positions of sunrise and sunset, and the distribution of heat. These are related phenomena, the observation of which creates the need for lessons upon the recurrence of day and night, and the succession of the seasons.

## HISTORY.

*By A. S. Burgess, M.A., Inspector of Schools, Bendigo.*

The history exhibits in the Exhibition were not conspicuous for number, though, as regards quality, there were some that deservedly held a high place in this wonderful exhibit of school work.

The most remarkable of the history exhibits were, undoubtedly, the local histories sent in by the teachers and scholars. These were most interesting records of all kinds of places, from Cape Howe to the South Australian border, and from Mildura to Queenscliff. And, in nearly all these local histories might be found some valuable piece of information worthy to be preserved for all time. It is satisfactory to know that steps will be taken to preserve them. One of the most elaborately got-up of these histories is that of Strathbogie, the work of Messrs. McDonald and Vroland, teachers in the Strathbogie District. It is nicely bound, beautifully illustrated, and the letter-press is interesting. The whole is an example of what energy and ability can accomplish in this direction. From the Ballarat District, several good local histories were sent, one of the best of which was that from Raglan, a nicely illustrated and well got-up compilation. The Ararat history was also very neat. A humorous history from Wonwondah East, in the Horsham District, attracted much attention, and afforded considerable amusement. This was excellently illustrated by pen-and-ink sketches, the whole being the work of Victor Wallace. The sketch of the veteran historian, or legend-teller, of Wonwondah, is cleverly conceived and executed. Ray Beers, a Bendigo scholar, compiled a very interesting history of the gold-fields city. It is illustrated by numerous woodcuts, photos, &c., showing the gradual growth of Bendigo from a city of tents to its present condition. A very interesting photograph is that of the lodgings occupied in the fifties by Lord Robert Cecil, afterwards Marquis of Salisbury and Prime Minister of England. It would be tedious and useless to enumerate all the local histories sent in. There were scores, if not hundreds of them, but there was not one without interest and charm, from the story of fortunes missed and won in that of Rheola to the story of sturdy toil and progress as set forth in that of Mildura. It is certain that the perusal of these histories will act as an incentive to other teachers to take time by the forelock and hasten to record the stories of the experiences of the veteran pioneers who are so surely and steadily passing away. In another ten years, it will be too late, for, even at present, the numbers of the survivors from the period before the gold discovery are very few, and the ranks of those who arrived in the early fifties are being thinned year by year.

Other valuable history exhibits were the historical maps and charts sent in by teachers and scholars. These maps and charts are so interesting and instructive that it is a wonder there are not more in evidence in our schools. The maps showing the routes of explorers





Part of the Castlemaine and Maryborough Court.



Part of the Daylesford Court.





in Australia are very useful and are easily made. Percydale, in the Maryborough District, sent in some very good exhibits of this kind, and there were similar exhibits from Wallup, Marong, Hanson, and many other places. From the Benalla District came some good plans of battle-fields. The exercise of drawing a plan of a battle-field is very valuable for our boys, and is calculated to give them a clear conception of the circumstances in which battles are fought. One of the best of these battle plans was in the Continuation School Court, and showed the field of Waterloo at different stages of the fight.

Another valuable aid in teaching history was noted in the capital maps showing the progress of British settlement in various countries. One series of maps in the Hamilton Court showed the British dominions in 1700, 1800, and 1906. Equally interesting and useful was a series of maps showing the progress of settlement in America. These maps showed the area of English settlement in 1650, 1750, and 1770. Another series showed the growth of British settlement in Australia from 1788 to 1800, then in 1830, in 1840, in 1850, and so on. Such historical aids assist in giving clear ideas, and, where there is much map-drawing in connexion with the history, there will be definite conceptions and intelligent interest.

There were numerous other aids for assisting the teacher of history. One chart by Mr. Richards, of North Fitzroy, showed, in a very clear manner, the departments under Commonwealth and State control respectively. Another in the Continuation School Court ingeniously compared the evolution of Parliament in England to the development of a butterfly.

In conclusion, it must be acknowledged that the history exhibits, though not prominent and striking, were well worthy of study, and were suggestive and valuable.

### NATURE-STUDY.

*By. J. A. Leach, M.Sc., Organising Inspector of Nature-study.*

When the revised programme was introduced some five years ago, it contained one heading unknown to most teachers. This was nature-study. It was met by a storm of opposition, and even ridicule, and was denounced as a frill and a fad. But the Exhibition furnishes a complete vindication of the wisdom of the framers of the new programme in introducing the world of the living and the real—the world of genuine interest to little ones—into the school course.

Being a study having no hard and fast boundaries, it allows full scope to the individuality of teachers and pupils. The topics treated present infinite variety—the green solid earth with its great variety of rocks and soils, the associated animal and plant life, the ever-changing weather, cloud-forms, anything in fact taken from the natural surroundings of the child, so that there has been room for diversity of treatment.

Each teacher, choosing the branch that interests him most, as that is the one he will arouse most interest in, has striven to open the eyes of the pupils to the wonders everywhere around him. One interested in plant life has led his pupils to make a close investigation of the plants of the school district; another has done equally good work in unravelling the life-history of the common insects of the locality, while still another has drawn on the fishing industry for an original and effective local study. Whatever the subject chosen, the work shown bears always the imprint of reality—each child actually sees the real things about him, whether of earth, of stream, of pond, or sea, or sky.

This very variety, though, is slightly bewildering to the general public, unless the purpose of the introduction of this study into our schools is remembered. Briefly, its purpose is to put our children in such a relation to their surroundings that the every-day, common things and events have a meaning to them. Then the children *see* what they look at, that is, develop the observing faculties. Having *seen*, they must *think*, that is, exercise their reflective faculties. Having thought, they must express their thoughts by means of a model, a drawing, or a written note, that is, exercise their executive faculties. Seeing for himself, thinking for himself, and telling for himself, the pupil will acquire a habit of independent self-reliance that the old programme did not give. His whole attitude to knowledge will be changed, and this altered attitude must affect the whole of his school and his later life. Thus nature-study comes to be of fundamental importance educationally.

If the exhibits are interpreted from this point of view that, no matter what branch of nature is dealt with, the aim is to secure the self-activity of the child, the most puzzling exhibits will now be seen to have a meaning and a purpose. Is it the Carisbrook weather calendars, the Raymond Island fish, the Myrniong fungi, the Horsham insects, or the vivaria and aquaria of Metropolitan District No. 2, the purpose is the same, to supply children with material for observation, thought, and expression.

In the Bairnsdale and Sale Court, there was to be seen a fine series of related nature-studies, where teachers possessing considerable scientific knowledge and skill, or possessing exceptional local conditions, have been able to produce results of a special kind.

Mr. Hauschildt, of Wy Yung, an earnest and successful student in geology and chemistry at the Bairnsdale School of Mines, has been able to lead the fortunate children attending his school to work out a series of experiments and observations connecting the milk and the soil. Starting with the formation of the rocks of that picturesque district, granite, old marine deposits, more recent marine deposits, clays, limestones, &c., the children have traced the origin of soil from each main kind of rock.



The sequence of vegetation growing on rock and soil was next illustrated with well-preserved specimens—lichens, mosses, ferns, grasses, &c. The milk returns from certain individual cows in a local dairy herd were then given in detail. The weight and value of butter from each cow were further calculated and tabulated. The milk was analyzed by the senior scholars, and the water, heat-producing, muscle-producing, bone-producing, and ash constituents determined.

This court also possesses a fine fish exhibit from the Raymond Island school (Mr. Wilson, H.T.). The various kinds of fish sent to market are shown, and the method of capturing them followed at different seasons of the year is illustrated by nets, diagrams, &c.

Another related study in the same court is furnished by the timber exhibit from the Bruthen, Johnsonville, Bulumwaal, and Nindoo State schools. The Bruthen exhibits show the timber as in plank, rough wood, bark, flower and fruit, a full series for each of the local timber trees.

The Johnsonville exhibit shows the timbers in pieces of uniform size divided into three. One part is polished, a second dressed, and the other left in the rough, so that a pupil is enabled to recognize a timber, no matter what its stage of preparation may be.

The life-histories of the insects destructive to the district timbers have been carefully worked out and neatly mounted.

In another part of the building, a special agricultural exhibit of great value and interest is shown by that successful teacher, Mr. J. H. Refshauge, of the Mortlake school. (See under Agriculture.)

Another special exhibit where an esteemed teacher has been able to enlist the active sympathy of naturalists residing in his district is shown by Mr. Duncan McLennan, Myrniong S.S. For several months past, Messrs. C. C. Brittlebank and T. Brittlebank, two of the best-known Victorian nature observers, have accompanied teacher, pupils, and parents on numerous field excursions to different parts of that great wonderland, the district around the Werribee Gorge. They have also presented several valuable nature studies to the school. These include an original chart of the insectivorous birds of Victoria, life size, and in natural colours—a chart which, by the way, would be of great value in every Victorian school.

The district rocks and the soils resulting from the decomposition of each constitute another interesting section. The local grasses were beautifully mounted, and teachers might keep these plant mounts before them as models to aim at in their own collections.

The pupils of the school showed valuable essays on the fungus diseases attacking the crops and pastures of the district. This is a highly specialized study, but it has been well carried out with the assistance of Mr. C. C. Brittlebank. The pupils leaving this school will be able to successfully cope with many of these expensive pests, since they have learnt by experiment the best methods of treatment.

Excellent plaster models were exhibited, graphically illustrating the formation of the varied geographical features of the locality.

The rock collection is particularly good. The hand specimens are all of uniform size and shape, and draw attention to the surprising variety of the boulders transported by the glaciers of long ago, and left jumbled together not far from the school. A very perfect specimen of a glaciated boulder with its grooved and striated faces and keel edges was included. The compositions of the children show that this fine exhibit figures largely in the school life of those very fortunate children, whose eyes are thus being opened to see the wonders and beauties of one of Earth's famous spots.

The Working Men's College, Horsham, sent its Director, Mr. E. E. Barker, F.R.M.S., well known as an enthusiastic entomologist, with extensive collections of insects. These were beautifully mounted and shown in glass cases.

Mr. Barker kindly explained to teachers how they could very easily make strong and serviceable glass covers and cases by pasting strips of paper firmly both inside and outside along the edges of the proper sized panes of glass.

Passing now to ordinary every-day work of pupils, much that is fine and interesting is shown, and it is evident that in many schools nature-study is achieving the full purpose for which it was introduced. Some of the pupils' notes are very instructive, and some even of scientific value. One series of observations by a pupil of the Johnsonville S.S. (Mr. J. M. Edgar, H.T.), contains some valuable information concerning the emperor gum moth (*Antherea euca-lypti*), which is very common throughout Victoria. This pupil has a record of 59 caterpillars which spun their cocoons in school. The date of spinning, the date of emergence of the moth, the number of days passed in the cocoon, &c., were noted and tabulated. These notes almost supply a complete answer to one interesting point. The moths appear twice in the year, in spring and autumn. Do those that spin late in spring emerge in the following autumn? Since the shortest time recorded here in the cocoon is 173 days, it would seem that the spring brood wait until the following spring before emerging. Four hundred days was the longest period in the cocoon.

Typical every day nature-study is well illustrated by the Castle-maine Court, where nature-study is shown to have secured good all-round development. Many schools in that district have sent good weather calendars, with observation notes on bird life, other animal life, flower calendars, &c. A useful summary is also given of the number of rainy days, fine days, first dew, first frost, first appearance of fruits, &c.

Life-histories of common insects have proved of interest to the children at many of the schools of the district. Observations on the apparent movements of the sun, the varying length of day and night, and the varying height of the midday sun, as well as observations of the varying position of constellations, such as the Southern Cross,





Part of the Shepparton Court.



Part of the Warragul Court.





show that the fascinating science of astronomy has been drawn on for material for study. Without being at all specialized, there was much in this court of genuine nature-study, the class of work that can be undertaken by any teacher in any part of the State.

Quite a feature of the nature study section was the exhibition of living forms. Many aquaria were shown, well stocked with the interesting dwellers of ponds. A large aquarium in the court of Metropolitan District, No. 2, from S.S., Hallam (Mr. J. Akeroyd, H.T.), attracted much notice. Space will not permit details.

Numerous vivaria were shown in working order. In the Waragul Court, a very nicely-made glass-sided vivarium was shown. This represented one of the beautiful mossy dells so abundant in the local hills. It showed a fine series of the mosses and ferns which flourish so luxuriously in that moist climate on the rich soil. Many living animals were shown in this case.

Metropolitan District, No. 2, had also several good vivaria showing many of the common insects at work.

The changed attitude of the child with regard to birds' eggs is very noticeable. The nature-study boy nowadays delights to discover a nest, to study the mode of building and lining it, to note the period of incubation, and the behaviour of the male during this period. Then the education of the young bird is carefully noted. Already throughout Victoria the great increase in the number and the friendliness of the native birds has been recorded, and it is a common thing, now, in many large towns, to hear some of our beautiful songsters in the public gardens. Not long ago, these birds were reported as very shy. Excellent bird notes were to be found in many of the interesting note-books in the several courts.

Native wild-flowers in apparently endless profusion added much to the brightness and freshness of the nature-study section. Mr. J. P. McLennan, of S.S., Emerald, kindly took charge of the important duty of displaying, each day, the beautiful, and often rare flowers sent carefully packed by enthusiastic teachers in remote parts of Victoria. Every district was well represented. Many teachers arranged with their pupils to send relays, so that right to the close of the Exhibition, new and fresh flowers were constantly being added.

This exhibit was also of great educational value for leading field naturalists—Mr. C. French, junr., Assistant Government Entomologist, Mr. J. P. McLennan, of S.S., Emerald, Mr. H. B. Williamson, of Flinders School, Geelong, and others well known in the scientific world, kindly identified and arranged the flowers. Thus, teachers were able to learn much of their district flora. They were also able to contrast it with that of all parts of Victoria.

The flora of other seasons of the year was also to be seen in the many excellent herbaria exhibited. Full information was given with each plant, the date of discovery, the character of locality, the name of discoverer, scientific name, and local name where possible.

The plants of the school-yard at Yendon (Mr. Callister, H.T.), were allowed the honour of a separate section in the herbarium. The variety found in that small area was truly surprising. District poisonous and troublesome plants were also separately shown, so that the children are learning to recognise farm foes, and, doubtless, will be able easily to keep them in check.

From the deep, damp fern gullies of Walhalla, a very fine collection of mosses was exhibited. Mr. Bastow kindly named these unasked, and also included many valuable and interesting notes, that added much to the appreciation of the general public.

Indeed all through the exhibition leading scientists were to be constantly met examining the valuable specimens with their interesting notes attached. While so many alert observers are on the watch, it is only to be expected that the fascinating devices of plants to secure the wide dispersal of seeds so necessary for success in the struggle for existence should attract notice. Many collections were made by pupils and exhibited. Most courts had one or more of these interesting seed collections. One of the most complete and best arranged was from the Malmsbury school (Mr. Crockett, H.T.). Each kind of seed was kept distinct in the tray of a wooden match-box, and the whole neatly displayed in glass-covered boxes. They were further grouped according as they are scattered by wind, by running water, by animals, by explosion (as gorse), &c.

Tree studies at the different seasons of the year were nicely drawn and neatly mounted by S.S., Timor West, and several other schools. The bursting buds of spring, the flower, the fruit, the fall of the leaf, and the bared tree in winter, showed the annual life of the tree. Collections of pressed leaves enabled a comparison to be made of the various leaf forms. Some of these collections were very complete, each district plant being represented.

The insect collections were a distinct advance on anything shown before in nature-study exhibitions. There was no indiscriminate throwing together of numbers of specimens. Each was mounted, and only one or two of a kind shown.

Especially in the beetle collections from the Kerang district, some valuable and rare specimens were shown. Mr. Kershaw was very pleased when these were presented to the National Museum, where they will be well taken care of.

A collection of moths and butterflies from S.S., Narracan, Waragul District (Mr. Weir, H.T.), also contained several rare specimens which were likewise presented to the Museum.

The days of huge, useless collections have passed. Each child now wants to know what is in his district, and, better still, wants to know something about it, and about its habits.

Soon, only specimens of forms not yet included in the school collections will be taken, but the others will be watched, and their secrets gradually extorted from them as our keen observers discover the meaning of much that is at present not understood.



Collections of seaside objects show that, in those schools situated near the sea, the children are learning to see some of the wonders of the great deep. Many good collections of shells were shown. These included some rare and valuable specimens, and afforded some new records for Victoria.

Some good collections of fossils were shown from many parts of Victoria. The accompanying notes showed that children are learning to appreciate the meaning of fossils—Nature's medals—and are beginning to regard physical geography as a subject of constant change and their own district as a place with a history that is well worth trying to read. In these collections, several new species of Mollusca were obtained by Mr. Chapman, A.L.S., the Museum palæontologist, and by Mr. Dennant, F.G.S., Inspector of Technical Schools and Government palæontologist for the tertiary formations. Thus, in still another direction is science being helped by the nature-study movement.

In still another instance a collection of fossil leaves, shown in the Warragul Court, and identified by Mr. Chapman, enabled the horizon of a series of rocks in Central Gippsland to be fixed.

One of the many interesting collections of local rocks came from S.S., Mortlake (Mr. J. H. Refshauge, H.T.). These were mostly obtained from the "gravel pits" on the side of Mt. Shadwell—one of the recently extinct volcanoes of that extensive volcanic area.

Collections of minerals were also numerous. They were well-arranged, and nicely shown in neat glass cases.

Several maps of the school districts were sent in. The most complete survey of any district was shown on the excellent map of Homebush (J. T. Haynes, H.T.). The watercourses, the hills, slopes, swamps, &c., are located, and the nature of the rocks and soils at different points given. The character of the flora was also indicated. Full notes are entered with each specimen, so that one can quickly learn much about each of the many specimens shown. Good rock, mineral, and plant collections and life histories were also shown by this small school.

Physiography has been liberally drawn on for study. Many models of the school district were included as relief maps in the geography section, so they will not be referred to here; but in addition, a series of diagrams and models showing the effect of water action in carving and sculpturing the varied and beautiful scenery of so many of the country districts was met with in several courts.

The Wy Yung school showed models and diagrams to assist in explaining the formation of rocks and their accompanying soils.

A series of models illustrating features studied on field excursions by the Continuation School pupils attracted much notice. The anticline and syncline—the doublefold at Studley Park bridge, a fault with a displacement of about 3 feet seen not far from the bridge, the remarkable meander of Green Creek, where the Saltwater River has prevented it from entering directly, showed that pupils are seeing real things, and seeing a meaning in them. These were built up on sheets of galvanized iron, each 24 inches by 18 inches.

Photos. of Victorian physiographic features were exhibited in many courts, and they served to illustrate the great variety of scenery to be met with in our interesting State. In the Kerang Court a set of lantern views prepared from the original negatives by Mr. W. P. Thomas (H.T., Meering N.), showed what a great assistance the camera and lantern can be made to the teacher of geography.

Mr. Zimmermann, the representative of Messrs. Underwood and Underwood, the well-known American firm that makes a specialty of sets of views to illustrate many kinds of lessons, also showed, amongst others, a remarkably fine series of views illustrating nature-study. Mr. Zimmermann is arranging with the firm's head view-taker to visit Victoria, and to prepare a set of physiographic views based on Victorian examples. These will be doubly valuable to our teachers.

Weather phenomena have been largely drawn on, and weather calendars were numerous. The kind of weather is denoted on many calendars by differently coloured papers. In addition, many of the weather calendars were illustrated and beautified by floral transfers representing the flowers in bloom during the month. Insects and other animals were also represented. One very fine series of calendars from the Carisbrook infant school were beautifully executed. They represented observations for the preceding sixteen months.

A valuable addition to the calendar is the summary attached to it showing the chief points of interest. In some schools, the completed monthly weather calendar provides good material for vigorous oral and written composition lessons, and children begin to generalize as to the season of the year, and the character of the weather, &c., from their own observations. The Hawthorn and Richmond infant schools also showed some very fine weather calendars.

One splendid idea incorporated in the weather calendar came from the Creswick school. In addition to the entries usually found on a good observation calendar, the most interesting pupil's observation for that day was entered, and the child's name placed alongside. We can picture the delight of the Class II. boy when his observation, his very own, is written on the calendar, and his name placed opposite. No wonder the entries are very varied, for the stimulus is great, and the seeing eye is being developed.

Observations on the apparent movements of the sun, moon, and stars, show that children are getting a clear conception of the daily rotation of the earth and some of its consequent effects. Some excellent diagrams were shown illustrating these.

One large diagram, fitted with a small model house, showed the sun at 6 a.m. shining on the east side of the house while, at 12 noon, the sun shines on the roof and also on the north wall. At 6 p.m. it shines on the west wall. While at midnight, if the earth were transparent, the sun would be seen mostly through the floor and partly through the south window. Thus, it was shown that the sun is just as much to the south of us at midnight as it is to the north of us at midday.





Part of the Kerang Court.



Part of the Horsham Court.





The varying lengths of shadows at different times of the day and year are also drawn on. At 9 a.m., at noon, and at 4 p.m., the length and direction of the shadow of the school flagpole are noted.

The meridian altitudes of the sun at different times of the year have been carefully noted and tabulated. Many very ingenious instruments were shown by teachers. The Castlemaine district, in particular, showed a great variety of very simple and effective apparatus. The amount of sunshine and heat received by the local district at different seasons of the year has also been made the basis of valuable study. The "season's difference" is a real thing to those pupils who have had their eyes opened to note and think about their own surroundings and conditions.

The Exhibition yielded much of value with regard to relics of the now fast-disappearing aboriginals. Native weapons, especially stone weapons, were exhibited in considerable number and great variety. One or two types, new to experts, were exhibited. Teachers, with their usual generosity, presented these to the National Museum when they saw they were of scientific value.

The note-books were very numerous, and, for convenience, may be considered as of two main kinds. One set showed children's notes of the school nature-study lessons. These gave the individual compositions of the children. Nature-study is proving of great value in correlation with composition. The children now have abundance of interesting material, and composition is improving very rapidly throughout the schools.

The other books showed the children's independent individual entries of observations made out of school. Many of these were of great interest, and some even of scientific value. A large proportion of the pupils, especially in country districts, keep this private nature-study diary, and so are developing the valuable habit of making exact records.

Other note-books showed the tabulated entries made as the pupils carried on a series of observations and experiments under the direction of the teacher. They are learning to gather and judge the value of evidence, and are also getting experience in drawing inferences to be still further tested, and in generalizing. In other words, though they may not be doing strictly exact science, they are getting experience in using the scientific method.

The amount of work shown in the nature-study section is large and varied. This fine result has been achieved certainly without detracting from the value of the work done in other subjects, and without even taking any of the time allotted to those subjects under the old programme. Indeed, the universal testimony is that the whole work of the school is becoming more and more real and valuable. One hour a week was formerly devoted to so-called object lessons. Nature-study has been substituted for these. A little less than one hour a week is prescribed, one half-hour lesson, and a short period—five minutes—daily, to insure that the children are

developing this habit of self-activity. The daily period is regarded as of much greater value in assisting the formation of the desired habit than the formal lesson which, at present, is a necessity.

The daily exercise is essential to the formation of a habit which must affect everything the child does, and every subject he learns. It is simply the habit of inquiring why and knowing why he does a thing. He then works intelligently to achieve the desired end, and not blindly or by rule of thumb. There were many who regard the present-day boy as unfortunate, for they claim that science (exact knowledge) is killing the beauty and wonder of everything. One poet has even regretted that—

When Science from Creation's face  
Enchantment's veil withdraws,  
What lovely visions yield their place  
To cold material laws!

We claim that it is quite the reverse, that the so-called wonder was often merely unfamiliarity, while the more that is known the more wonderful everything becomes.

The poet Lowell has expressed this exactly for us in one of his finest sonnets—

I grieve not that ripe knowledge takes away  
The charm that Nature to my childhood wore,  
For with that insight cometh day by day  
A greater bliss than wonder was before.

It is not claimed that nature-study is the most important subject on the programme, or even that it is a subject at all. We claim that it is worth a place in any curriculum, because it gives a child an attitude towards knowledge. It makes him an inquirer, and he should carry this inquiring spirit into everything he does. Thus "nature-study is not science, it is not knowledge, it is not even fact. It is spirit." It is concerned with point of view, and one of the "greatest things in life is point of view." It further enables a child to live a fuller life. Thus the child is not only being prepared for his after-school life, but he is also being enabled to live more fully his life here and now.

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## ELEMENTARY EXPERIMENTAL SCIENCE.

*By J. T. Saxton, M.A., Inspector of Schools, Beechworth.*

The display of physical science apparatus, if only the intrinsic value of the exhibits be considered, was very satisfactory indeed; but, in respect of the number of exhibits, was disappointing, and anything but a fair index of the amount of attention given to the subject by the best teachers. One main cause of the meagreness of the display, no doubt, was the reluctance of many teachers to expose their apparatus to the risk of being broken in transit to and from the Exhibition.



There are many gratifying features in the display. The great bulk of it is, evidently, the work of the children themselves, judging from its simplicity and a certain lack of finish, eminently suggestive of juvenile handiwork. If the science teaching is giving no more than a training in handling and adjusting appliances in an exact way for definite purposes, then it is achieving good results. A commendable feature, too, is the way in which teachers have specialized along particular branches of science teaching. Mechanics, hydrostatics, heat, electricity, and chemistry, are subjects very much in evidence, agriculture being dealt with separately as an applied science. Teachers have, evidently, taken full advantage of the liberty granted them by the Department to teach that subject with which they are most familiar, and which necessarily they must teach best. The many practical applications of the principles taught are well worthy of commendation, lending, as they do, interest and point to the training involved.

It is evident, from an inspection of many of the note-books, that there are some teachers who have anything but a clear perception of the aim of physical science teaching, or of the meaning of the term science. Scientific study consists in an ordered and exact examination of facts whether by observation or experiment, and the drawing and verification of conclusions from the evidence. In many instances, as indicated by the note-books, the inculcation of the fact has been the main thing in the teacher's mind, the training of the child to arrive at a knowledge of it, through his own investigations, being considered of secondary importance altogether. In some cases, there is no evidence of *training* whatever. The great principle to keep in mind is that of "productive self-activity." There is no reason whatever why all the upper-class children in our large schools should not perform a few typical experiments *on their own account* during the year, while, in small schools, each child might reasonably work through a definite course. It should be clearly understood that the aim of the science work is not necessarily the making of elaborate apparatus, nor the writing up of wearisome note-book entries, nor the drawing of beautiful diagrams; but the training of the child *to acquire for himself*, under the teacher's guidance, a compact body of well ordered facts about fundamental natural phenomena.

Some of the apparatus exhibited is too elaborate to be taken as a fair criterion of the work of a normal teacher and of normal children. It is, evidently, the result of highly-skilled science teaching combined with skilled constructive ability. As an example of the high-water mark of attainment, it is, without doubt, excellent, and deserving of very great praise. The making up of apparatus is not in itself, necessarily, science work at all, though it is an indispensable adjunct to the right pursuit of physical science. The simpler the apparatus employed the better, provided, of course, it be made as accurately and neatly as the child's stage of development will allow. In very few instances can the stages through which the child has

been taken in order to comprehend fully some of the appliances exhibited, especially in electrical work, be traced in a succession of appliances of gradually increasing difficulty. It was, in consequence, difficult to say whether there had been any progressive development at all in the child's training, or whether, the cart having been placed before the horse, he had not been brought face to face with a complicated piece of apparatus requiring for its adequate explanation much unravelling of fundamental principles. I do not for a moment decry the use of any of the apparatus so described. There is a bright boy in every class, who should be catered for in this way, and there is always the consideration that the seeds of a valuable hobby may be sown.

Among many excellent note-books, there are too many which show that good science teaching or training has been altogether overlooked. The note-book has been uplifted into a sort of fetish, and has been rather a hindrance than a help in science work. The notes are too frequently compendious. The child who is working and thinking is not in a mood to take extended notes of observations. The notes are certainly necessary, and it is important that a child should learn the right use of a note-book. His memoranda, in neat diagrams and short notes, should be available for future reference, if necessary. Good diagrams, drawn in pencil, are frequently of greater value than anything in the way of written notes, a picture of the apparatus and experiment being implanted in his mind by a single glance at his book. Much of the inferential work might appear later in composition or home-exercise books. It is certainly unnecessary that the writing out of inferences should take the place of good observational and experimental work.

One looked in vain in the majority of books for records of "failures" in experiments. Nature never errs, and the so-called failure is always due to interfering conditions which, in the process of being explained, form subject-matter for profitable lessons. The failure is surely something "which happens." The good idiomatic English used in many of the books, and the similarity of the entries, suggest that much of the note-book work is anything but the product of the child's individual intelligence. They are doubtless the result of very good class teaching, but, in these matters, our standard of judgment should be nothing but the best attainable ideal.

Several districts omitted to exhibit science apparatus at all, while the others differed, as might be expected, both in the quality and quantity of their contributions. No matter how small the display, in some instances the work of only one teacher, each court had its special merits. None of the metropolitan courts, of my own knowledge, exhibited to anything approaching their full capacity, for reasons stated above.

During the last week of the Exhibition, a dozen boys, from State school, Vere-street, Collingwood, were shown at practical work under my own supervision. Most of the boys had had no previous





Part of the Beechworth Court.



Part of the Hamilton Court.





experience in handling appliances, and the ease and celerity with which they adapted themselves to exact and thorough work was a revelation to many teachers, and a surprise to myself. It was shown that far more ground could be covered, and in a far more thorough manner, than in the same time by class demonstration methods alone, to say nothing of the incalculable advantage to the boys from the practical work.

I might add that there was fortunately nothing in the exhibits of apparatus, and nothing in the note-books, to substantiate the charge of finicking which has been levelled against our teaching of physics. There are, doubtless, some teachers who will do finicking work in any subject they undertake to teach, but none of these exhibited work in physical science. The practical work done by the boys would have instantly removed such impressions from any one who had taken the trouble to observe them.

The apparatus sent in by the students of the Training College and of the Continuation School certainly did credit to each of those institutions. The exhibits covered sufficient ground for a primary school course in any one of the physical sciences. They were simply constructed and very effective indeed in illustrating the principles involved. One of the best features of this portion of the science exhibition was undoubtedly the clear and masterful way in which the students demonstrated the use of the appliances to the teachers and the general public. The work done in this respect by pupils of the Continuation School shows that their science is being placed on a sure foundation, that of the Training College, being, of course, well established.

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### SCHOOL-GARDEN PRODUCTS.

*By J. H. Betheras, M.A., Inspector of Schools, Warrnambool.*

Although it is well-known that nearly every school in Victoria has a school garden, and that many enthusiastic teachers have made a special feature of ornamenting their school surroundings by a growth of trees, flowers, and plants, the school-garden products were but poorly represented in the Exhibition. Some fine photographs showed that this out-of-door work is making good headway; but the splendid opportunity to display samples of the products, to make known the educative and utilitarian values of the experimental and garden plots, and to furnish evidence of the great amount of work that has been done, was not sufficiently regarded.

Few people, however, could pass the daily show of beautiful fresh flowers from Mr. Inspector Gamble's district without remarking their excellence and artistically effective arrangement. The teachers from Fox Hill, Blackburn, Healesville, and Burwood East are to be complimented on the display.

From the edge of the Mallee, the Boort school showed samples of wheat, barley, and oats; many kinds of grasses; specimens of local rocks, soils, and subsoils. Some samples of the school-garden soil were placed side by side; one, of the soil in its original state, another, of the soil as improved by cultivation. Specimens of the friends and foes of the farmer formed part of a very creditable collection.

In the Sale Court the S.S. Wy Yung exhibit attracted the visitors' attention; it amply repaid even the closest observer. The rocks and soils of the neighbourhood were classified; the various stages of decomposition through which the rocks have passed to soil were traced by means of illustrative samples; the grass growth was described qualitatively and quantitatively, so that the change of a particle of Gippsland rock into a drop of Gippsland milk was explained in a very interesting manner.

Another interesting exhibit was the kapok grown in the grounds of S.S. Marong.

Mr. Watson of the Ballarat West Sloyd School showed a good design for a school garden. Close to the walls of the school was a grass plot, ornamental and useful in keeping the scholars from danger in running round the corners of the building. There were beds for each class of scholars, and also many small plots to allow some ornamental ribbon gardening. A noteworthy feature was the fishpond representing the two hemispheres, each hemisphere being about twenty feet across; the continents were represented in relief.

The children attending the Naringal school sent splendid specimens of their garden work; root-growth of eighteen species of grasses, those suited to the district being specially marked; fodder plants of their own cultivation; and a collection of the weeds of the district. The mounting of the specimens was done by the scholars. A plan of the school garden showed how systematically and thoroughly the science of agriculture is being taught. A chart gave a knowledge of the teacher's ambitious effort to correlate the subject with other school lessons. For example, the lower classes in history learn what the land and district were like when the first settlers came, who these settlers were, and how they lived, and also the changes in soil and people incidental to the cultivation of the land. The stories have been collected from the oldest residents.

S.S. New Gisborne exhibited some very good samples of the produce from their school garden. Samples from the best plots were shown, and the five varieties of turnips proved the success of the scholars.

S.S. Mortlake was easily first as exhibitor of school-garden products. The extensive display of the successful results in experimenting with cereals and grasses, in mounting specimens, and in illustrating by diagrams the seed and root pressure, the value of cultivation and irrigation, and different methods of planting, was rendered the more interesting by the oral explanations and





Agricultural Exhibits, etc., Warrnambool Court.



Part of the Sale and Bairnsdale Court.



lecturettes given by the teacher. The whole exhibit was carefully arranged. There were the local rocks with specimens of disintegrated rock humus, and local soil. The weather charts showed daily records of thermometer and barometer, direction of winds, rainfall. The plan of the field operations and of the general observation work was set forth in detail. The plan of the school garden and experimental plot showed that, at present, there are in growth six varieties of potatoes, three kinds of mangold, sugar-beet, onions and eschalots, turnips, red-beet, radish, cauliflower and cabbage, twenty-four kinds of grasses, twelve rust-resisting wheats, four varieties of oats, English barley, and Cape barley. Then there were charts showing results of experiments with artificial manures, mounted specimens of Algerian oats grown with different fertilizers, sixty weeds and pests found in the locality, and forty-eight grasses and herbs (native), friends of the farmer.

There were also numerous charts illustrating experiments in agriculture. They showed the value of deep cultivation as compared with shallow ploughing, and the necessity for proper drainage; the conservation of moisture by stirring surface of soil; the necessity of packing, where there is no subsoil, or where rainfall is slight; the effects on growth of plants in early stages by sowing seed with embryo up, embryo on side, embryo down; how roots seek water, although unable to reach it; the effect of gravitation on root-growth; seed pressure; root-pressure; value of watering plants so as to increase root growth downwards.

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### DRAWING.

*By P. M. Carew-Smyth, Inspector of Drawing.*

It is difficult, in a brief report, to do justice to the many hundreds of square yards of drawings displayed upon the screens; but, when thousands of drawing-books are also taken into consideration, it will be readily admitted that brevity and adequacy are incompatible terms.

The general effect of the Exhibition was one of sameness, inseparable, perhaps, from such a huge collection of elementary drawings, all produced under the same syllabus, and contributed by every class in the school—some districts boasted that every class in every school in the district was represented. The work, therefore, could, only in a modified degree, be described as picked, and, as a whole, its evenness was remarkable. Some schools, of course, stood out from the others for the excellent quality of their work, and these were not always schools in large centres of population, but were frequently situated in remote country districts.



The best work, too, was not always that which was mounted and displayed in the best positions; in the drawing-books, which often lay unnoticed by the visitor, was frequently to be seen the most satisfactory and the most genuine class work of the school.

The division of the subject which was most in evidence was the freehand drawing from flat examples.

As renderings of given forms, the thousands of drawings exhibited under this head reached a very fair standard of execution; much of the work was distinctly good, very careful and accurate, executed clearly and directly. But the freehand example from the flat should be employed largely to teach a principle of natural growth, of ornament, or of draughtsmanship, and should, where possible, be linked to the study and observation of natural or artificial forms embodying the same principle. I did not observe this correlation as frequently as one would wish.

Again, some of this work appeared to be produced too much with a view to exhibition; elaborate and ambitious examples were noticed, which must have had valuable hours spent upon them, and, to a great degree, misspent, for although no drawing is entirely useless, such work is decidedly a waste of effort that would be much better employed in the study of forms direct from nature. Of course, these elaborate exercises that I refer to are never seen in actual class-work, nor were there many such shown at the Exhibition, but those exhibited appeared to attract a certain amount of unthinking admiration, and comment, under the circumstances, is necessary.

As regards the study of form from nature and from objects, the Exhibition, as a whole, cannot be said to have been strong. In this respect, no doubt, some districts that include schools in populous centres stood out as superior to others that embrace thinly-settled country districts, with small schools, where the full compass of the programme is not exacted, and the vast majority of the schools represented were such small schools. Still, allowing for this, I do not think that work from actual objects and from nature was sufficiently in evidence; nor was it, as a rule, markedly successful when exhibited. Not that there were not many examples of well-drawn form that showed careful and systematic teaching; but, as a whole, the work lacked variety, where variety was so easily obtainable. It appeared, also, in many instances, as if too much attention were given to "finishing" the drawings with a clean, mechanical outline, without that careful and loving study of form which gives such work its educational value.

One of the things to be guarded against in all work of this kind is the tendency, on the scholar's part, to be content with a mere impression of the shape of leaf, or flower, or fruit: a sinuous line represents the margin of the leaf, a few radiating or pennate dashes symbolize the veins. This is impressionism of the wrong kind, and should never be permitted. Whatever is done should be done

rightly, as far as it goes. Examples simple enough for all stages of the pupil's development can be obtained, so that they may, and can, be rendered accurately, if the teacher sets the standard.

One of the advantages of drawing from geometric models and simple objects is that such careless observation as is implied in the drawing of the leaf mentioned above is not possible without instant detection, and there is, therefore, a salutary compulsion towards accuracy which is good for the eye and the hand of the pupil.

The most successful drawings that I saw were those in which too much was not attempted: where the teacher was content to secure a moderate amount well done. Of such drawings there was a fair proportion.

It is unnecessary to say much of the geometrical drawing and work with mathematic instruments. As a whole, it was fair; and, sometimes, it was excellent. In all work of this nature, neatness and accuracy cannot be overdone.

Of the large quantity of brushwork exhibited, much was very creditable, and showed careful and conscientious work on the part of both teacher and scholar. Some of the remarks already made in connexion with freehand drawing and model drawing apply also to the brush drawing. There was decidedly too little work from natural forms: time would have been much better spent on the representation of simple leaves and flowers from nature, rather than on the copying of some of the elaborate flat examples, full of detail, which were exhibited.

Although, in many examples, the colour employed was well chosen and tasteful, there was too large a proportion where the colour was crude and objectionable. The use of dyes was often responsible for this—colours which might look passable upon the broken surface of a fabric, where the minute points of shade help to modify the general tone, frequently look hard, metallic and ugly upon paper.

This question of colour is of the greatest importance. It is also, unfortunately, a question of cost. The effect was always best where pure water-colour was employed, and where the colour tended towards the tertiary and secondary side of the scale.

In some districts and schools I noticed a partiality for opaque colour, often, of course, accompanied by a regularity and evenness of execution likely to impose upon the uninitiated. The use of such colour is not desirable, as it tends towards a non-direct method of execution. Corrections can be made without being noticeable, and this fact encourages petty alterations and is liable to cultivate a niggling habit.

Where decorative design, even of the simplest kind, was attempted, it was very rarely successful. There was, as a rule, no geometric basis, or orderly or methodical "setting out" of the pattern. The virtue of simplicity was not understood—the usual fault of the novice in decorative composition.

## MANUAL TRAINING.

*By John Byatt, Organizing Inspector of Manual Training.*

## PAPERWORK.

No attempt was made at a collective display of paperwork, but each school exhibited its own work in its respective district court, and there were, therefore, few courts without a more or less complete presentation of this subject. The exhibits showed every stage in the work, from simple straight-line exercises on four-inch mounts, worked by Class II., up to those of an advanced decorative character on large mounts, worked by Class VI. The whole of the work was of a most praiseworthy character, the execution was excellent, and, with few exceptions, the colour schemes were very good. The Fairfield and Heidelberg schools both made extensive and most effective displays, and among country schools, Toolamba Central, Cope Cope, McKenzie Creek, and Jung North, deserve special mention for exceptionally good work.

## CARDBOARD MODELLING.

The exhibits of cardboard modelling were not so numerous as those of paperwork; the work, however, was very nicely done, but its appearance was sometimes marred by the occasional use of inappropriate and unsuitable covering paper. The difficulty of obtaining beautiful papers for covering the models has been felt ever since the subject was introduced, as stationers do not keep them in stock, and will not order them except in larger quantities than the demand is likely to justify.

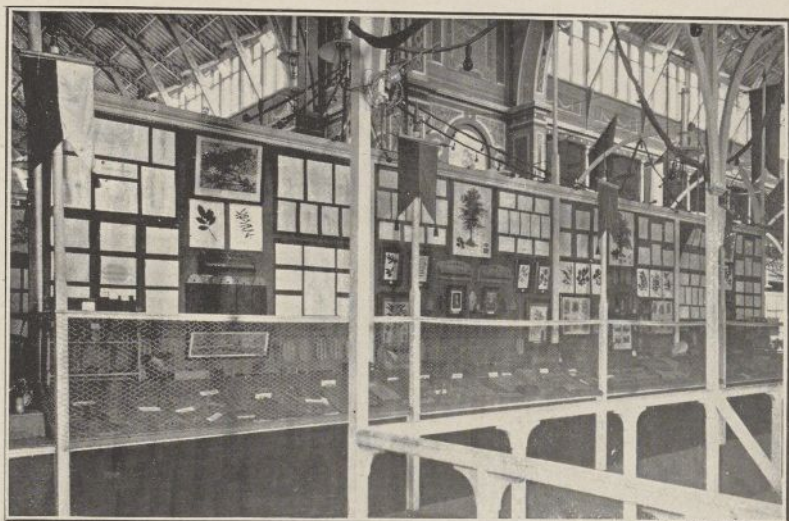
## SLOYD WOODWORK.

The Sloyd Court may fairly be described as having been the central feature of the Exhibition, at least as far as its location was concerned. Situated at the intersection of the two main transepts, and almost underneath the central dome, it was a great attraction to many interested and curious sightseers. It consisted of—(a) demonstrations showing the work actually in progress; and (b) an extensive exhibit of finished models, drawings, &c.

For the demonstrations, a platform was constructed, 36 feet long, 25 feet wide, and 9 inches high, surrounded by a strong rail, and ornamented by Venetian masts, connected in their upper parts by a graceful arcading, and decorated with streamers. The central arch on the first side bore the word "Sloyd" in high wooden letters, which glowed with numerous electric lamps after dark.

The platform contained a complete outfit of benches, tools, &c., and demonstrations were given every afternoon and evening, during the currency of the Exhibition, by groups of 20 boys from the





Part of the Sloyd Woodwork Court.



A Demonstration of Sloyd Woodwork.



various metropolitan centres, under the direction of their several teachers. This working exhibit was most popular, and was, at all times, surrounded by a concourse of critical but admiring spectators.

At about 12 feet distant and on three sides of the platform, large wooden screens were built, providing a sloping table 24 inches deep, and wall space above, 7 feet high. The whole of the table and space was occupied with a splendid collection of models, and the wall was covered with excellent examples of the working drawings, in both pencil and ink, all neatly mounted, and numerous pictures illustrating various branches of the timber industry, especially in Victoria and New Zealand.

Two or three of the Sloyd teachers were always in attendance, and, by their lucid explanations, did very much to remove occasional misconceptions regarding the system, and to demonstrate its value as an essential factor in primary education.

The Ballarat Centre sent a very fine and comprehensive exhibit, which was shown in the Ballarat Court, and included several extra models not included in the regular course. Among them may be mentioned a cricket bat, a fishing rod, tool chest, and spice cabinet.

The Technical Schools Court included a splendid exhibit from the centre at Ballarat East. It was particularly interesting, because every model was made of an Australian or New Zealand timber, and included no less than eighteen different varieties; and, secondly, because it was accompanied by an equally fine exhibit of work done by the students in the evening technical classes under the same teacher, the pupils of which classes, in many cases, had received their early training in the Sloyd classes held during the day. The general character of this work may be gauged by the fact that it included such items as a triple light window, surmounted by a canopy, a six-panelled door in oak, a staircase in kauri, &c., all half full size, and a king-post truss, including all the necessary iron work, quarter full size.

Where all worked so well, it would be invidious to particularize, but I take this opportunity of putting on record the high appreciation and sincere thanks of the Department to all those Sloyd teachers who, by their self-denying and enthusiastic efforts, did so much to make the Sloyd exhibit such a splendid educational as well as spectacular success.

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## NEEDLEWORK.

*By Fanny M. Hambleton, First F.A., State School, Hawthorn.*

Needlework being one of the subjects of our curriculum which naturally lends itself to display occupied considerable space at the Exhibition. All grades of the subject were shown, from the time the child first entered school, to the time when, having passed through Class VI., she was ready to leave. As circumstances play a great



part in the doing of all work, we are not in a position to judge, but only to criticise. Thus all remarks that follow, are made in the spirit of helpfulness and co-operation, and in the hope that they will tend to render this subject, as all others, as nearly perfect as possible for the good of our girls, and the proper fitting of them for their life's work. Many suggestions have been made, from teachers to teachers, teachers to parents, parents to teachers. All individuals are not alike, so that we find some excelling in one subject in our Exhibition, others in another subject. This was shown in the many varieties of ways in which materials were cut and made into useful garments and articles enabling the teacher to show the required work of the class. Only in a few cases was it beyond the programme, thus making the work too difficult for the child.

All needlework exhibited in the Infant Class, and Classes I. and II., was very good indeed, a few exceptions being only the crudeness of colour in the canvas work.

The work of Classes III. and IV. would not, to a casual observer, appear as a great advance on that of Class II., but we must bear in mind that, in these classes, a number of new branches of needlework are taught, namely, the sewing on of tapes, buttons, stitching, darning, and knitting. There were not so many exhibits from these classes as from the others.

We may rest assured that the work here is to the advancement of the child, as testified by the high order of the work shown, in nearly all cases, from Class VI. We feel proud that our girls, when able to leave school, can show and do such good work. All appreciate and like good, even sewing, but long lengths of microscopic stitching, though beautiful to look at, ought to be discouraged as injurious to the sight.

Class V. has been left to the last, as it occupies a separate branch of needlework—flannel-work. We had, in this section, a great many exhibits, showing with what great care the garments had been cut. The herring-boning in the greater part of the work was very neatly done, but part of the true character of herring-boning was lost in almost all pieces of flannel-work. This can easily be accounted for, when one understands the difficulties under which a teacher labours in imparting instruction in this part of the programme. For the first time, lessons have to be given on the cutting-out of patterns in paper, an extremely awkward operation to carry out on the desks, owing to their width and slope. This, with paper, is bad, but with flannel, worse, as there is not room to lay the paper pattern on the material. If done at the table, it must be in relays of twos or threes. Imagine, in a class of fifty or more, the time this takes. It shows how desirable a work-room, a work-board (a graph-board for pattern-scale drawing), and even a sewing mistress, are in a large school. Then the cutting-out could be accomplished without so much inconvenience and loss of time. A suggestion might also be offered that,

instead of the samples of white-work required in this class, a square of cheese-cloth (it must be loosely-woven material) could be given to each child, on which she could do two rows of herring-boning, thus learning the true character of the work and the proper method of turning the corners. Flannel does not permit the principles of the work to be easily shown; and there is not time for both cheese-cloth samples and white-work.

In the mending, we had many samples, but none were of the practical nature of the New South Wales exhibits. The mending of old garments is very commendable, but, from a sanitary point, great care is necessary.

The whole of the sewing exhibit from New South Wales was of a very high order, both in plain and fancy needlework. Flannel and knitting are only optional in New South Wales, they had very little of either.

Though we should like to see every girl able to use the machine when she leaves school, we would condemn its too early use, that is, before the child has completed a satisfactory course of hand-work that cannot be obtained as early as Class IV. The machine-work commenced thus early was poor, and the seams were not properly set. Machine-work, like plain needlework, requires, that, in order to look well, all seams, hems, &c., should be evenly and carefully set.

A word might be said about trimming. Sometimes, a child thinks lace and ribbon will make a garment look well, irrespective of the quality of the sewing. This idea ought to be discouraged, and only the good, neat work allowed to be trimmed, and that fittingly to the garment.

We want to show our girls the economy and fitness of things, what materials are best for certain garments, and why; what trimming is the most durable, and so on. Often, a cheap lace may look nice, but, not being durable, it will soon wear and make the garment look untidy and poor. Then home-made trimming can be made as pretty, and is far more lasting. In most of the needlework exhibits the fitness of materials was very well carried out, and many garments were quite worthy of their elaborate trimming.

The fancy work shown was of a varied description, and proved that the girls had obtained commendable skill over both needle and material.

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## COOKERY.

*By Flora Pell, Cookery Instructress, Education Department.*

The cookery of our Exhibition needs no comment as to its popularity, as every one could see for themselves the interest evinced by one and all who entered the Cookery Room. In fact, after the first day or two, extra accommodation had to be made in the shape of



a stand where visitors could sit and see all that was going on. Moreover, we know and feel that people are beginning to see the importance of this branch of education in its far-reaching effects, which will help greatly in the restoration of the dignity of domestic work.

Children are sometimes reared to despise the arts of the household, and to treat with scant respect those who practise them. Wage-earners who can find any other avenue of employment shun that of household service, though it offers moral and material advantages that belong to no other employment. In many cases, young people enter upon married life, not only ignorant of the necessary work of the household, but without any clear conception of the ethical relations involved in the family community, and without the faintest idea as to how the family income ought to be spent. The man does not manage his business that way, but it never seems to occur to him that his housekeeping is a business.

It has been justly said that a very large part of the wealth produced in the world is consumed in the household, yet neither those who produce, nor those who consume know on what principle it is done.

Public sentiment is beginning to demand the preparation of the woman for what is commonly claimed to be her "heaven-appointed" mission as the wife and the home-maker. It was vaguely believed that, when the necessity arose, some domestic instinct would quicken in her, and enable her to administer the duties of her office without previous thought or training. This is an anomaly that exists in no other walk in life. But a household cannot be run on the inspiration plan any more than can a factory, railway, department, or store. Household service can never become a business, and command the same respect as other forms of labour, until there is a better general conception of household affairs from an ethical, sociological, and economical stand-point. With this conception will come a greater respect for the household and those who work in it; and then will come, also, a demand for the better equipment of the employer and the employed, and for the application of the scientific and business principles needful for the organization of the modern household.

The ideal school means the ideal community, and, to help to build this ideal, we must develop all the resources of the self, and what a great power are we developing in stimulating in our girls the love and knowledge of caring for and managing their homes.

This was clearly seen in the interest, energy, and aptitude displayed by the different groups of girls from the metropolitan centres (thirteen each day), who were each little pictures of brightness, tidiness, and cleanliness, working in the large, light, well-fitted kitchen, doing their share in the preparation of the dinner provided, and of the invalid cookery shown, the setting of the tables, &c., and finding scope for the more fanciful side of their natures in the making of cakes and jellies. The branch of instruction last mentioned is really





A Cookery Demonstration.



In the Lecture Hall.



given, not as necessity, but as a stimulus to the more prosaic portion of their course. From a practical point of view, the result was most satisfactory, as was proved by those who partook of the meals, and were loud in their praise of the excellent results that were attained by these children who could, even now, help so materially in their homes, and who, in a very few years, would, most probably, have the management of homes of their own.

The teaching of domestic economy is to be the power that makes the happy home, and the happy home means a prosperous nation, because, from the home, we must recruit our citizens. So we must see to it that an opportunity is given to the girls to get this training, and, more particularly, that those who are about to leave school get it, for those in the lower classes will have ample time later on. If we look at the matter from an unselfish point of view, and think solely of the girls' good, we can have no hesitation in saying, that the precious time spent away from other studies is not lost, but more than compensated for by the increased knowledge acquired.

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## SINGING AND PHYSICAL CULTURE.

*By F. C. Eddy, M.A., Inspector of Schools.*

### CONCERTS.

In addition to the exhibits of ordinary school work, of technical school work, and of aids and apparatus for teaching, choirs of from 1,200 to 1,500 strong, selected from the six metropolitan districts, and more limited choirs from Ballarat, Bendigo, Geelong, Sale, and Bairnsdale, gave concerts and spectacular displays on some afternoons and every evening. Each district selected its own items, but a circular was issued by the executive committee, suggesting certain patriotic and other effective school choruses for rehearsal. Consequently, on most of the programmes appear such pieces as "Maker of Earth and Sea," "Rule Britannia," "God Bless the Prince of Wales," "The Mighty Norseman," "Fatherland," and "Bright are the Glories."

At the opening ceremony, the massed choir of 1,200 voices from Metropolitan District, No. 3 (Inspector, Major Gamble) sang, under the conductorship of Mr. McGregor, five choruses in a creditable manner as to time, tone, expression, and volume.

The items which were most appreciated were "Maker of Earth and Sea," "The Linden Tree," and "God Save the King." For the last-named item, the Minister of Public Instruction, the Hon. A. O. Sachse, M.L.C., acted as organist. The criticisms were generally favorable, though one paper took exception to the singing; but, if the critic had been made fully acquainted with the conditions under which singing is taught in many of our metropolitan schools, it is doubtful whether such adverse comments would have been made.



The first combined district concert was given by 1,500 pupils from Metropolitan District No. 4 (Inspector, Mr. S. Summons, M.A., L.L.B.) under the conductorship of Mr. M. Samuel. Several spectacular displays by pupils selected from various parts of the district, under their own teachers, were also given; these aided the efforts of the choir by their interesting variety. The hall was crowded, and the audience was enthusiastic in its applause.

"Waiting for the May," and "Over, Ferryman, Row" were exceedingly well sung. The musical sketch, "Where are You Going, My Pretty Maid?" given by S.S. Fairfield, in appropriate and tasteful costume, formed a special feature, and "The Jolly Barbers," rendered by S.S. Coburg, was comical and amusing. Tambourine drill, by S.S. South Brunswick was an interesting item.

On Thursday, 6th September, a choir of 1,200 from Metropolitan District No. 2 (Inspector, Major Eddy, M.A.), executed before a vast audience a bright, interesting, and varied programme. The concerted pieces which found most favour with the audience were "Toll for the Brave," "Oh! What a Glorious Sight," and "Fatherland."

The "Lily March," by 60 girls from South Melbourne, was one of the best displays given during the exhibition, and "The Pig-tail and Fan," by pupils from Port Melbourne, was a creditable and amusing burlesque. Wand exercises were well done by the Armadale pupils, and a very effective tableau, "Sons of Britannia," with chorus, was put on by S.S. Malvern. About 600 of the pupils were in fancy costume, and this formed an additional pleasant scenic effect.

On Friday, 7th September, the children for the choir were chosen from Metropolitan District No. 5 (Inspector, Mr. R. F. Russell, B.A.), and sang under the conductorship of Mr. Hulme.

The combined choruses were, as a rule, well sung, but, occasionally, the want of good time and precision of attack was noticeable, the result probably of insufficient full rehearsals. "Bright are the Glories," "God speed the Right," and "Come, Companions," were well sung.

One of the special selections was contributed by a well-trained fife-and-drum band from S.S. Moreland. The displays—"The Union Jack," by S.S. Brunswick—and fancy marching, physical drill, and calisthenic movements by other schools proved entertaining to the audience, who attended as numerously as on previous nights.

On Saturday, 8th September, Metropolitan District No. 3 (Inspector, Major Gamble), which had formed the choir on the opening day, again gave a creditable all-round programme under the conductorship of Mr. McGregor.

The full and part choruses were rendered with effect, good tone, and articulation. The cadet and calisthenic displays were also well done, and furnished ample evidence of sound training.



A Concert.



Aboriginal Exhibits in the Sale and Bairnsdale Court.





On the afternoon of Monday, 10th September, a choir from the Bendigo schools, under the leadership of Mr. B. J. Burstons, gave a concert. The combined choruses were given with good expression, and were well under control. The special choir from S.S. Gravel Hill sang in a creditable manner several difficult items, which were above the average of ordinary school songs. Their spectacular displays were carried out at some disadvantage as compared with metropolitan schools, as they had to be given in the day time.

At night, Metropolitan District No. 6 (Inspector, Mr. S. Ware, M.A.), formed a choir conducted by Mr. E. Hayes. The songs, as a rule, were rendered with spirit, vigour, and general effect, but the want of sufficient full rehearsals was shown in some of the items, and hindered, at times, the efforts of the conductor.

"God bless the Prince of Wales" and "Hope will Banish Sorrow" gave general satisfaction, and the cutlass-drill performance of the Williamstown naval cadets received merited applause.

The musical figure, by S.S. West Melbourne, was performed with precision and grace. Footscray and Yarraville gave some amusing sketches, and the club-swinging, by S.S. North Williamstown, was a pretty movement.

On the afternoon of Tuesday, 11th September, the Ballarat, Sale, and Bairnsdale schools gave an exhibition of school singing, but the Ballarat District was not represented in strength, and the pupils did not do themselves justice. It is only fair to point out that, just prior to this exhibition, a highly satisfactory exhibition of school work and singing had been given at Ballarat, and the teachers naturally felt that they could not so soon call upon the parents to meet further expense, or ask the staffs for further effort to the hampering of their ordinary work. Another disadvantage the choir laboured under on that afternoon was owing to the fact that outside shows, such as marionettes, performing dogs, &c., were interspersed throughout the programme.

In the evening a choir of 1,500 from Metropolitan District No. 1 (Inspector, Mr. J. Holland, M.A.) gave, with Mr. McGregor as conductor, a creditable exposition of well-selected pieces, and the numerous and varied displays of fancy drill, musical sketches, calisthenics, and cadet work were received with great applause.

The concert on this occasion was quite equal to that given on any other evening, and, where all was so well done, it is difficult to pick out any special item, but "The House that Jack Built," by S.S. Albert Park, cymbal drill, by S.S. Brighton, and running evolutions, by S.S. Hawksburn, were specially entertaining.

On the remaining evenings, combined concerts with groups from the Metropolitan Districts were given.

On Wednesday afternoon, a limited choir from Geelong provided the entertainment. The songs were rendered tunefully, in good time, and with satisfactory attention to light and shade. The conductor was Mr. Reid.

Although, when looked for, defects as to the execution and conducting of some of the choruses could easily be observed, it is gratifying to note that the general results were satisfactory, and gave the public an opportunity of seeing the highly educational and disciplinary effects of systematic class singing in making the remainder of the school work brighter and less monotonous.

One point was noticeable throughout, viz., an improvement in the pronunciation of the words of the songs, but there is room still for advancement in this direction.

The large crowds at each night's concert showed that the efforts of the various choirs were well appreciated.

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#### DRILL.

As usual, in all Departmental functions of this character, the Metropolitan Cadet Corps took a very prominent part throughout the proceedings, and their work, whether in battalion or company movements, or in detachments performing special military displays on the concert platform, in conjunction with the choral singing or in connexion with the athletic sports on the oval, was, in the main, well executed.

On the opening day, about 1,400 cadets from Metropolitan Battalions Nos. 7, 8, and 9, had a route march from Prince's-bridge to the Exhibition, under the command of Major Gamble. The 7th Battalion, under Major Eddy, formed the guard of honour to His Excellency the Governor, Sir Reginald Talbot, who afterwards inspected the 8th and 9th Battalions, under Captains Cavanagh and Barclay. A sham fight followed.

His Excellency expressed himself as well pleased with the turnout, steadiness, and marching of the various battalions.

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#### SPORTS MEETING AND DEMONSTRATION.

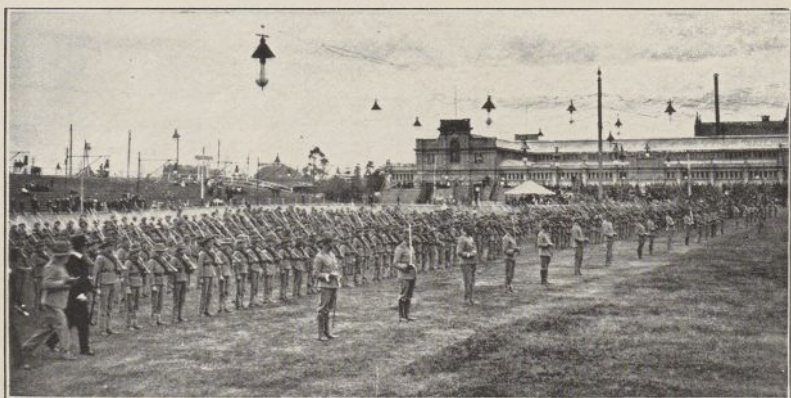
The sports and demonstration held on the oval on Wednesday, 12th September, in connexion with the exhibition, were arranged by the Victorian State Schools Amateur Athletic Association.\* There was a record attendance of 30,000 people, including His Excellency the Governor, the Hon. T. Bent, Premier of Victoria, and the Hon. A. O. Sachse, Minister of Public Instruction.

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\*The office bearers for 1906 were:—*Patron*, Hon. A. O. Sachse, M.L.C.; *President*, Mr. F. Tate, M.A., Director of Education; *Vice-Presidents*, Major Eddy, M.A.; Messrs P. Drummond and C. S. Halkyard, M.A.; *Treasurer*, Mr. E. J. Hamilton; *Hon. Secretary*, Mr. G. E. Dean, M.A.; *Asst. Secretary*, Mr. J. L. Williams; *Committee*, Messrs. R. Skewes, F. Hayden, C. Bradley, T. Austin, J. Healey, A. Opie, W. Nicholls, C. Planner, A. Lumsden, F. Clough, W. Jack, G. Monks; *Marshal for Girls*, Mr. Halkyard; *Marshal for Boys*, Mr. J. L. Williams; *Chief Starter*, Mr. T. R. L. Austin.



A Demonstration of Physical Culture Exercises—Wand Drill.



A Parade of Cadets.





The sports committee had kindly waived their annual meeting on the Melbourne Cricket Ground, in order to make the exhibition a pronounced success from every point of view.

There were about 3,000 competitors in the various athletic, cadet, and calisthenic exercises, fancy marching, and maypole dancing, and, naturally, their parents and friends flocked to the oval to see their young hopefuls compete, and the excellent programme provided for the afternoon's amusement was the means of gathering together a tremendous crowd of the general public. The exhibition authorities state that the attendance was as large, if not larger, than that of any other similar entertainment (the schools demonstrations on the occasion of the visit of the Duke of York being exceptions).

Thirty-seven events appeared on the programme, and in some of these there were as many as 80 competitors, and, consequently, the races had to be run in heats. Contests of a varied character took place simultaneously all over the ground, and these went on from 10 a.m. till 5.45 p.m. with a lunch interval of thirty minutes. The executive officers worked hard throughout, and they deserve to be congratulated and commended for their untiring efforts, and for their able management and timing of the extensive programme. The band, under Lieut. Riley, also performed their difficult task in a very capable and careful manner.

Most of the single events were taken in the morning, and the group events and massed group displays in the afternoon. Each school had to provide its own colours, and the prizes were represented by trophies which the winners could select for themselves.

Egg-and-spoon, wallaby, sack, boot, and bicycle races for the bcys, and hoop and skipping races for the girls were interspersed to vary the programme.

The scene of the pupils dressed in brightly coloured and fancy costumes, or clad in uniform, constantly moving to and fro, or performing skilful and graceful evolutions over the green sward, was a marvellous picture of delight and ever-varying charm.

The calisthenic exercises of both boys and girls, and the maypole dances were sources of great attraction, and their movements in unison were done with so much ease, grace, and precision as to rouse the immense audience to a high state of enthusiasm. The cadet displays and the fancy marching were also commendable.

Most of the competitors in the races showed good limb and chest development, endurance, and speed, and gave evidence that, in course of time, they would become stalwart citizens of the State.

One race is worthy of note—that between the champion schoolboy, E. May, and an aboriginal boy named McDonald, from Coranderk. The result was an easy win for the champion.

Massed groups of the various events held in the morning in running, marching, calisthenics, and maypole dancing under the supervision of Miss Monk, were, perhaps, the most picturesque displays of the day, and, after they were over, the great crowd, having

spent a profitable and most entertaining time, left the grounds somewhat more orderly than when they clamoured for entrance. Perhaps this was due to the object lesson presented to many people as to the discipline, control, and obedience of the young people on the oval.

The public had an opportunity, as they had had previously, at the Duke of York's visit, of seeing the good work done in the State schools in physical culture and in cadet drill. The performance was repeated on the following Saturday to the general satisfaction of all who were present.

The Education Department and the Executive Committee of the Exhibition have great cause to be thankful for the valuable aid rendered by the choirs, cadets, and by the athletic competitors, as these entertainments caused not only a pleasant diversion, but also helped to relieve what might otherwise have been a somewhat monotonous inspection of the exhibition of school work except to those specially interested.

As anticipated by the Executive Committee, these entertainments were the means of gathering together immense audiences, and thus made the gigantic demonstration an assured financial success.

#### RESULTS OF THE SPORTS.

*Running.*—Boys under 16 (schools' championship), 120 yards.—E. May, Yarra Park, 1; W. Symonds, 2; E. Adams, 3. Boys 14-15, 100 yards.—S. Leverett, 1. Boys 12-14, 100 yards.—C. Murray, 1. Boys under 12, 80 yards.—T. Wellington, 1.

Girls' champion race, 75 yards.—E. Davis, 1. Girls 13-15, 75 yards.—G. Stewart, 1. Girls 11-13, 75 yards.—C. Johnson, 1. Girls under 11, 50 yards.—V. Garlick, 1.

*Jumping, &c.*—Vaulting with pole.—Rial (Brighton), 6 ft. 3 in., 1; Greaves (Berwick), 6 ft. 1 in., 2; Evans (Surrey Hills), 5 ft. 11 in., 3. Standing long jump.—H. Orpen (Coburg), 8 ft. 6 in., 1; A. McDonald (Errol-street, North Melbourne), 8 ft. 4½ in., 2; M. Jacobs (Pahran W.), 8 ft. 4½ in., 3. High Jump.—V. Clark (Malvern), 4 ft. 3 in., 1; H. Stenning (Ascot Vale), 2. In jumping off for the second place, Stenning jumped 4 ft. 4 in.

*Bowling at Wicket.*—R. Condon, 1.

*Group Events.*—Cutlass drill.—St. Kilda, 1; Williamstown, 2. Wand Display.—St. Kilda, 1; Brighton, 2; Richmond Central, 3; Middle Park, 4; Dumb-bells (girls).—Pahran West, 1; Hawksburn, 2; Richmond Central, 3; Brighton, 4. Maypole dance.—Richmond Central, 1; Hawthorn (1508), 2; St. Kilda and Albert Park, equal, 3. Marching (girls).—Brunswick West, 1; Faraday-street, Carlton, 2; Albert Park, 3; Richmond Central, 4. Dumb-bells (boys).—Richmond Central, 1; St. Kilda, 2; Middle Park, 3; Brunswick West, 4. Night alarm (cadets).—Hawthorn, 1; King-street, West Melbourne, 2; Pahran West, 3; Elsternwick, 4. Running evolutions (boys).—Pahran West, 1; Albert Park, 2; Richmond Central, 3; Pahran North, 4. Hawthorn West won on points, but were disqualified for not appearing in the final display. Club-swinging (girls).—Richmond Central and North Fitzroy, equal, 1; Hawksburn, 3; Brighton, 4. Physical drill with arms (cadets).—Pahran West, 1; Hawthorn, 2; Pahran North, 3; Williamstown naval cadets, 4.



*Bicycle races.*—Under 16, one mile.—A. Davie (Flemington), 1; W. McFarlane (Cambridge-street, Collingwood), 2. Under 15.—J. Whitelaw (Cambridge-street, Collingwood), 1; H. Stanbridge (Dorcas-street, South Melbourne), 2; S. McLaren (Richmond Central), 3.

*Other Events.*—*Girls' Hoop Races.*—Under 16, R. Lyons. Under 14, O. Andrawartha. Under 12, A. May. Fancy skipping.—Ivy Page. Skipping.—14-16, M. Downes. Under 14, B. Pearse. Under 12, L. Anderson. Sack race.—L. Rowney. Siamese race.—Keddie and Watson. Wallaby race.—P. Dungan. Egg-and-spoon race.—C. Holmes. Hat, coat, and boot race.—L. Hook.

## THE DECORATED SCHOOL-ROOM.

*By W. F. Gates, M.A., Inspector of Schools, Benalla.*

School decoration is a matter of much concern with us just now. All our schools are decorated, but the decoration, as a rule, is far from artistic. The walls are often a confused jumble of pictures, charts, nature-study specimens, &c. They are like the walls of a curio shop.

As a part of the Exhibition there was a decorated school-room, intended to serve as a model to the thousands of visiting teachers. The decoration consisted of eight pictures, two vases, and one bas-relief—a head of Saint Cecilia. The room formed a study in brown. The pictures were brown, the mantelpiece and its draping were brown—a colour harmony certainly. The pictures were carbon-photo. reproductions of works of some of the great masters, nicely mounted and framed. And they were all properly hung—almost flat on the wall, not at an impertinent angle with it. The collection included Raphael's *Madonna*, Constable's *Cornfield*, Millet's *Gleaners*, Troyon's *Lane*, &c.

The general effect was severe, and at first, sombre. (But the room was badly lighted: it was like the bottom of a well.) No doubt the decorator intended it to be a corrective to the prevailing practice among us of smothering the walls with maps, charts, &c.

The longer one stayed in the room, the more pleasing was the feeling produced: the pictures grew upon one. And every picture there would bear looking at again and again. But it may as well be admitted that the room was intended as suitable only for a senior class-room. Junior and infant classes must have more color, more brightness. If we can lead our senior pupils to appreciate such fine examples as were here presented, we have done much. The effect on the taste of the rising generation would be marked.

It should be added here that the Merriam Company, of 152 Elizabeth-street, provide all these pictures—framed or unframed. The company also lend a series of pictures to school exhibitions in the country, if freight be paid and there is any likelihood of a purchase. They will send a descriptive catalogue to any inquirer.

## WILD FLOWERS.

*By J. P. McLennan, Supervising Officer of Agriculture.*

The display of freshly-picked wild flowers was a feature of the Exhibition. They came from all parts of Victoria, the number of distinct species shown being about 200. The teachers and pupils are to be commended for the way in which the supply was kept up, as there were sufficient fresh specimens each morning to replace those exhibited on the previous day.

It was a pity that the flowers were not shown in a court by themselves, so that those from each district could be kept together. But want of space prevented such an arrangement. It was probably the largest show of wild flowers ever held in Melbourne.

Some fine specimens came from the Grampians, among which were the showy myrtaceous flowers, *Thryptomene ciliata* and *T. Mitchelliana*. These were named "heaths" by some schools. Large quantities of *Eriostemon obovalis*, commonly called "wax flower," were received from several schools. A bouquet, composed of this attractive flower was presented to Her Excellency Lady Northcote, at her own request.

A few of the uncommon flowers received were:—*Grevillea ilicifolia*, with its holly-like leaves; the blue orchid, *Caladenia coerulea*, popularly called "blue spider"; and the white variety of *Euphrasia Brownii*, or "eye-bright."

Twenty species of *Acacia* were noticed, there being fine displays of the golden wattle, *Acacia pycnantha*. The sprays of *Clematis microphylla* from Frankston were in flower, while those from Lake Charm, near Kerang, were in fruit, showing the difference in the seasons in the two districts.

Some of the popular names were very strange, and in most cases they did not seem appropriate. The "Harbinger of Spring," *Wurmbia dioica*, boasted of about sixteen different names, such as—"lords and ladies," "ladies and gentlemen," "cats and dogs," "cats and mice," "hens and chickens," &c. The *Pultenaeas* and *Dillwynias*, which have pea flowers, were known as "wild wall-flowers;" but they resemble wall-flowers only in colour.

I find that children have no trouble in giving the generic name to the native plants, such as—*Pultenaea*, *Acacia*, *Caladenia*, *Correa*, &c. An acquaintance with the wild flowers gives an added zest to a ramble in the country, and those who love the flowers will see that they are not ruthlessly destroyed.

In the New South Wales Court were shown fresh specimens from across the Murray, amongst them being the Waratah (*Telopea speciosissima*).

The following gentlemen kindly assisted in identifying the plants:—Messrs. H. B. Williamson, Flinders School, Geelong; C. French, jun., Assistant Government Entomologist; P. H. St. John, of the Melbourne Botanical Gardens; Geo. Coghill, and C. Walter.

## HOBBY WORK.

*By E. R. Davey, M.A., LL.B., Inspector of Schools, Sale.*

Although hobby work is not included in the ordinary State school curriculum, it forms a striking feature of the Exhibition.

Hobby work is that form of employment which a person who is free to do as he pleases generally takes up, on account of the great amount of pleasure which it affords him. And it is only natural to suppose that, when a boy has acquired a taste for nature-study, carpentry, drawing, painting, or music, he will, in his spare hours, resort to it as a means of recreation.

Hobby work being, like all other work, merely a mode of expression of thought, there can be no doubt that many of the varieties on view are to a large extent indebted both for their origin and development to the training which is provided in the State schools. The more, therefore, the school life encourages originality of thought, the greater will be the novelty and variety in the modes of its expression. And the great display of exhibits affords evidence that there is much latent constructive talent in our schools, which needs only the requisite encouragement and development to prove of the utmost value to our industrial arts and manufactures.

Much constructive ability is manifest in the numerous models of engines, buildings, carved work, sloyd work, science apparatus, drawings, paintings, and fancy-work, all of which are present in great variety.

But hobby work has a value quite apart from the pleasure it affords, inasmuch as it gives both teacher and parent a clue to the innate tendency of the child's mind, and thus enables them to determine the trade or profession for which he is best fitted, and to shape his education accordingly.

There is no doubt that, if the natural aptitudes of the child were more systematically consulted, there would be far fewer wasted and unhappy lives than are to be found in our midst to-day. But, alas! it is a common thing for a parent to place his boy in the first position that presents itself, although he may be totally unfitted for it.

Now, the teacher who, by fostering some particular hobby, secures the sympathy and interest of the boy, will most probably make a success of him, whereas, otherwise, he would have been a complete failure. For what a boy likes he will do willingly, and everything connected with it will give him pleasure. When thus aroused and interested, the truant no longer loves to roam the woods, or the listless to be inattentive to the teacher's voice. On the



contrary, he eagerly devotes his whole mind to the subject whose whole surroundings have a constant charm and attraction for him.

Hobbies, however, are worthy of encouragement, if only they afford a rest from "the burden and heat of the day." They afford a change, and change is rest. The wearied set of faculties, after the day's duty, readily gives place when an unused and more vigorous set is called into requisition. It is, therefore, not to be wondered at that most men cultivate a hobby of some sort, though not always a wise one. And here we see the necessity for the guidance of the boy even in his hobbies. For instance, one of the juvenile exhibitors has carved a wooden chain out of a solid block of wood—a very ingenious piece of work, certainly, but useless, as it will not bear a strain. For the most part, however, the hobby work is of a useful and sensible character.

Not only may hobby work result in productions of great value, it may also afford preparation for the serious business of life. How expressly serviceable to the teacher is the pursuit of such hobbies as literature, music, nature-study, drawing, science, and painting, and it is quite evident from the large number of teachers exhibiting hobby work that they duly appreciate its value in this direction.

While the great Lord Brougham says, "Blessed is the man that hath a hobby," Sterne whimsically remarks, "It is an excellent thing for every man to have a hobby-horse, and ride it along the highway, provided he does not require every man he meets to get up behind him and ride it too."

Hitherto, however, we have dealt only with the positive value of hobby work. Its negative value is not less important, seeing that it prevents idleness with its attendant ills. It is a good rule to keep the youth constantly engaged, for, in such a mild climate as ours, there is a strong tendency for him, unless suitably employed, to seek over-much outdoor amusement, and, it may be, roam the streets, and acquire habits of a more or less ruinous character.

It would be invidious to particularize the various specimens of hobby work found in the Exhibition; but the display would hardly have served its true purpose unless it brought very prominently under the notice of both teachers and parents its intrinsic as well as its practical value, and impressed this one great principle on their minds: First find out the innate tendency of the child's mind, and make this the foundation stone on which to build his educational structure.

## THE MELBOURNE CONTINUATION SCHOOL EXHIBIT.

*By M. Stanton Sharman, M.A., B.Sc., First Lecturer, Training College, Education Department of Victoria.*

Although the Melbourne Continuation School had been in existence for about eighteen months only, yet the excellence of the work attempted and carried out by that institution was well exemplified by the scope and nature of their exhibit. One felt, on visiting the court, that the work done in each department was thorough and not superficial. The neatness and care displayed in making the specimens and in arranging them showed that the pupils were being trained in a matter so essential to a teacher. From the ranks of these students we must expect future Victorian teachers, and it was forcibly brought home that fundamental qualifications for such were being well catered for.

In this court, as in most other cases, the need for more space to show the work off to advantage was noticeable, but the limited area was well utilized by a judicious selection from the chief branches of the school course. As one entered, his gaze was met by a fine show-case, containing a number of geological specimens, shells, and curios collected by the pupils, either privately or during the school excursions. The case was surmounted by several casts to illustrate various geographical and geological facts. High up along the south wall were numerous relief maps, which, like the casts, had been moulded by the students. The most striking feature was the excellent use made of tinting to demonstrate the varying depths of the seas and oceans and the altitudes of the land. One could easily see what a valuable teaching aid such maps would be, and how, by reference to them, the history of the building-up of a continent, as North America, for example, could be clearly and conclusively unfolded.

In drawing and brushwork, fine examples of every branch required at the particular stage of development were displayed, whilst the applications to scientific charts, and to mechanical and artistic design, were very creditable. In regard to arithmetic, the latest ideas in graphical representations and statistics were given due place, and the examples in algebra showed that the mathematics were well treated. The languages were represented by a number of French exercises, skilfully illustrating the conversational method of teaching this subject. But, as might be expected from the nature of the subjects, the bulk of the exhibit was devoted to nature study and science apparatus. The whole of the north wall was occupied by many fine specimens, and, perhaps, most strikingly by the excellent way in which a number of life-histories had been worked out. This section proved of great general interest.

That the sciences were not being taught from text-book and chart merely was easily recognised by the great number of pieces of apparatus made by the pupils. Here, of course, mechanical skill, care, and patience were at once exemplified; and, if such an exhibit served no other purpose, it, at any rate, tended to bring to light those who had a natural aptitude for this work. It is not every boy that can make a piece of apparatus successfully, and it requires somewhat more than a mechanic to fashion instruments to demonstrate scientific principles by using only the cheap and crude materials that may lie to hand. Some very excellent work was shown. One lad, Joe Varey, had, by his own unaided efforts, constructed an electric dynamo of the Siemen's drum-wound type, the whole being enclosed in a carefully-made cabinet and surmounted by an incandescent lamp. This piece of work deserves special commendation. Several pieces of apparatus had been made to demonstrate the effects and general principles of heat, mechanics, and hydrostatics.

The chemistry department was in evidence with apparatus to demonstrate the composition of carbon dioxide and nitric acid, the solubility of hydrogen chloride, the liquefaction of sulphur dioxide, the combustion of gases, the diffusion of gases, and the manufacture of potassium chlorate. A cheap chemical outfit proved a useful and interesting exhibit.

A word of praise is due to the manner in which the pupils who were told off for duty acted as guides to visitors to their court, and spared no pains either in explaining the exhibits, or in experimenting with the apparatus to demonstrate the use to which it could be put.

The whole effect of the court was very attractive, and reflected great credit on the Principal, Mr. Hocking, his staff, and the pupils of the school.

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## THE TRAINING COLLEGE EXHIBIT.

*By J. Hocking, Principal, Melbourne Continuation School.*

The exhibits illustrate the trend of modern methods, and form a very creditable display. Owing to limitations of space, a complete exposition of the college resources was impossible, but the exhibits are numerous enough for one to form an adequate idea of the work done from day to day. The walls are lined and tables filled with effective teaching aids. These are proving of inestimable value to teachers, who, on every side, are to be seen sketching rough diagrams and making brief notes for completion on their return home.

My remarks will have reference to science, history, blackboard sketches, infant-room work, and nature-study.





Part of the Training College Court.



Part of the Melbourne Continuation School Court.



The best exhibit in the Court is, without question, the varied collection of scientific apparatus, and one gathers that the aim of science teaching is to afford training in scientific method, rather than acquisition of facts. Many of the appliances show ingenuity and skill in construction, and accompanying diagrams aid materially in revealing their purpose. The demonstrations given daily by the students have further increased their value. The apparatus is theirs, they have constructed it, they know its use, and, better still, are able to impart their knowledge to others. The blackboard sketches have also proved an attractive feature, but their purpose is not quite apparent. If they are intended as rapid drawings during the progress of a lesson, one is inclined to think that they are too elaborate; if, again, they are to be viewed as mural decorations, more permanent material should have been used. But, apart from their purpose, the effects produced are worthy of commendation; and it is to be regretted that no provision has been made to show the work in progress. A dozen easels with as many designs growing under deft fingers would have proved of great value to teachers. "The Sundowner," "Gibraltar," and "Niagara Falls," are specially worthy of study.

Passing to the history section, one finds much to commend. Plans of battle-fields, such as Bannockburn and Waterloo, make study realistic, maps delineating the routes of the early Australian explorers serve to correlate history and geography in a rational way, photographs of the men who have helped to make our nation great have not been forgotten, and well-assorted lantern slides suggest interesting lecturettes. Further, historical maps show at a glance the expansion and contraction of our Empire at different times. These are all purposeful, and lose nothing of their value through careful execution. Where there is so much to commend, an adverse comment may be allowed. "Objective" teaching has its limitations, consequently, to undertake the building of a Norman castle with such flimsy material as cardboard, or to attempt to portray the grandeur and chivalry of the tournament on a sand-tray, is to court failure. Stimulating oral description and pictorial illustrations will achieve far more in this respect than cardboard models and tin soldiers.

And the infant-school section: think of it for a moment. Many of the children attending some of our suburban schools see much of the seamy side of life. Happy childlife is for them practically non-existent. No gardens gay with flowers, nor houses bright with pictures, nor nurseries replete with toys are theirs. Their only play ground is an open street, or, worse still, a blind alley; their only education, the struggle for existence. A gruesome background indeed on which to place the work of our infant section! Yet what suggestions of bright, happy, harmonious surroundings are here. In the exhibits of modelling, drawing, and brushwork, provision is made for the child's creativeness and self-activity, the script reading



lessons and picture stories are carefully thought out, and their correlation is successfully achieved. The minds which conceived, and the hands which planned this work, are certainly not wanting in sympathy which wins the way to all hearts. The attention now being paid to infant-room methods is gratifying, and, in this direction, lies the solution of one of our most difficult educational problems. One would have welcomed schemes of work showing how lessons may be modified to harmonize with life, whether spent in an inland village, a seaport town, or a city suburb; and how, taking nature-study as a basis, lessons may be adapted to the seasons and to the stages of child development.

Here, as elsewhere, the nature-study exhibits are numerous and varied, and have attracted many interested observers. Life is dealt with, that of the pond and marsh being first favourites. The students' observations of the progressive development of life-histories are conserved in coloured diagrams. The college, however, must make rapid strides in this subject if the students are to keep pace with its advance in the primary schools, for, into the latter, a new interest has certainly come, and with this new interest a kindlier tone. No subject does more to inspire confidence between teacher and child than this. It exerts its subtle influence on feelings and character, and affords wide scope (not always recognised, however) for the growth of sentiment. Nature, for example, has inspired much of our best literature. May we not requite the service by using literature to deepen our love for Nature?

## THE NEW SOUTH WALES EXHIBIT.

*By M. S. Sharman, M.A., B.Sc., First Lecturer, Training College,  
Education Department, Victoria.*

### INTRODUCTION.

The Exhibition has been the means of affording the teachers of this State an opportunity of becoming closely acquainted with some of the recent developments and undertakings in primary education in New South Wales; and the display of work from pupils of the public schools, while arousing very keen interest in view of the fact that it was from another State, won for itself unstinted praise on all sides on account of its extensive character and the general excellence of the execution of the work presented. The exhibits were arranged, as far as practicable, according to the various groups of the schedule of exhibits issued by the Department of Education, consisting of six well-defined sections, viz:—

Needlework. Penmanship; ornamental writing; mapping and graphs. Drawing; brushwork; modelling. Kindergarten; cardboard, wood, and metal work. Educational appliances and photography. Nature-study.

The whole of the work sent in came from *bonâ fide* public school pupils and teachers.

Much comment was passed on the ages of the pupils, and some misconception was manifest as to the distinction between public school and superior public school, it being generally considered that the latter had reference to what would be termed a secondary school. But a consideration of the programme of instruction will, to some extent, explain the distinction. The work is divided into three sections, viz.:—The infants' department, the primary course, and the higher primary course. Class I. or infants' department caters for children whose ages range from six to eight years, and the work is permeated with the spirit of the kindergarten, while the work of the other classes is so graded that a boy is expected, by the age of 13, to have reached Class V., which corresponds roughly to our lower VI. Here the "primary" course ends, and only those pupils who are qualified are allowed to attempt the higher primary work of the sixth and seventh standards, which might be compared to the sub-matriculation class of a secondary school. The ages extend to 16 or 17 years, and, for the most part, those schools which have sufficient numbers to enable the higher primary work to be undertaken are rated as superior public schools. The display on the whole, as could be seen from the schedule, was very special, and, perhaps, only in the needlework and brushwork, could the work of the various classes be judged. The dominant feature was undoubtedly the effort made in nearly every department to produce work of a practical and utilitarian character. Children learned mat-weaving and allied occupations, but their skill was put to the test when from the age of nine to 13 years they were called on to weave straw hats, or make hammocks and fisher-nets, such as would command a fair price in any market. The penmanship was displayed in the form of a receipted bill, or an application for an appointment. The patterns for a wall paper, or tile, or the decorative border for a plate, or the intricacies of a lady's collarette, were the outcome of an original design from some actual drawing from nature. The statistician at a glance could trace from the graphs the increase in population of the Commonwealth States, or could mark the years of the farmers' prosperity from the graph of the wheat yield.

#### NEEDLEWORK.

The needlework was excellent. It was arranged to show the work of every class in sewing (by hand) from the simple pillow-slip of the younger pupil to the dress and blouse of the elder girl. The more advanced pupils showed specimens cut out and machined by themselves, or, as a special reward for their industry and ability, fancy work in canvas, corticelli, Mount Mellick, embroidery, drawn-thread work, knitting, and crochet. Here, opportunities were seized on for the application of designs invented in the art classes. Some household mending and darning made manifest again the practical

character of the work. Not the least interesting from the teacher's point of view were the notes by the children taken from demonstrations by the teacher to the whole class, in contradistinction to the usual individual work. The patterns were charted to scale, with a full description of how to proceed in taking measurements in practice.

#### PENMANSHIP, ETC.

In the penmanship exhibit, various styles of writing were adopted, and, in some instances, careful spacing of words had been studied; but the work as a whole was not of such an excellence as in the other departments. There seemed to be a lack of a commercial style. The Lord's Prayer, written in English, French, and Latin, or the phrase "The New Zealand International Exhibition" served to demonstrate neatly and elaborately penned specimens of ornamentation.

In the mapping section, for the most part the maps were, as is usual, a test in printing. "Our Empire" was tastefully arranged by one pupil; a second showed the Clarence basin; while a third had drawn a map locating the artesian basin of Australia. Special mention should also be made of the fine map of Australia by one pupil of 12 years of age. There were no relief maps of special merit.

The graphs were a special feature of the higher work. Thus a graph of a section along the railway line from Sydney to Tamworth, or from Sydney to Dubbo, compiled probably from the railway guide, set out very strikingly the heights of the various stations above sea-level. This department was very extensive, and included representations of the relative populations of various countries; the growth of tonnage of shipping of Sydney from 1855; the exports and imports of New South Wales, &c. Architectural plans were drawn of the local school or some private residence, as well as sections of artesian wells.

#### DRAWING, ETC.

In the art section, the work was chiefly from pupils of the upper classes, and included such work as is usually displayed by our technical schools. The underlying feature of the work in New South Wales is the fact that it is all done directly from the real object or specimen, from the infant class upwards. The work sent in was of an extremely high order, and won universal admiration. In the brushwork, the scope of the work in each class was well illustrated by a suitable selection of typical examples of work. It was not made clear, however, whether the children conventionalized their units of design for themselves from the natural objects, or from the blackboard work of the teacher.

No exhibit won more praise or attracted more attention than the water-colour painting of autumn leaves executed from nature by the pupils of the Parramatta South School. There were several very



commendable floral sprays. The frieze of poppies was very good, although the too close resemblance to nature in the poppies and wheat unit of the wall-paper would, perhaps, not be so pleasing when repeated *ad nauseam* over the whole area of the walls of a room.

It was to be noticed that clay-modelling is carried right through the various classes, and some specimens of very fine plasticine work and clay work were presented. The fruit and floral work showed great ability.

#### KINDERGARTEN.

This section devoted to the kindergarten work at once demanded attention from the excellent finish of the exhibits. A pleasing feature was the obvious attempt made in some cases to connect the kindergarten work with that of the higher school; but the majority of the samples were special and not such as could be undertaken in a fairly large class in the ordinary round of school life. The great danger to be guarded against is that of requiring children to be engaged in occupations, even though somewhat more elaborate, which are really only suitable in the course of development for pupils of a younger age. A word of protest might be raised against children of eight working out extremely intricate designs and mottoes in perforated paper such as would tax the patience of more mature workers.

From one school came a blackboard cloth representing, in neat orderly arrangement, the work drawn by children from natural objects, from memory, from the imagination. It was well done, though it is to be regretted that town children were not asked to draw a better example from their imagination than a motor-car or a tram. Very little clay-modelling was here displayed. In the stick-laying great use was made of fried peas or brass tubes for making the joints; but practically no attempt was made to show how this work was connected with the school work. One school showed clearly how a series of lessons on home and its surroundings could be built up on some central idea. Fairy tales were told whose theme was "love of home." The nature-study was devoted to the garden and home pets, while the kindergarten games were, "The Busy Little Mother" and "The Garden." From a blackboard scene was built up the story of "Little Meg's Children." The poetry and occupations were all coloured with the same thoughts; and the whole crowned by an original composition.

The appropriate use of picturesque epithets was a feature of the essay displayed. The child's home was in the "sunny" land of New South Wales, and was situated "near the bright blue sea," &c. The composition by Harry Lameston, aged eight, which appeared under another case, showed marked ability. The whole design for this case was worked by the children, Eva Coates, aged eight, writing the script.

There were several examples of good work in cardboard sewing, mat-weaving, and paper-folding.

## CARDBOARD WORK AND CHIP-CARVING.

A very effective and extensive display of cardboard work was made by pupils of the Goulburn School, where one of the teachers, Mr. Taylor, has devised a scheme extending through three grades, differing in difficulty, degree of accuracy needed, and method of construction. The course in paperwork seems to be dispensed with, and, as the models are executed in coloured cardboard, they do not require covering, but, in the first grade, are bound together with twine, silk, &c. In every case the "net" of the figure has to be drawn accurately before the children are allowed to cut out the design. In this, as well as in the woodwork, the younger children are not expected to produce models that are exact in every detail, but are rather encouraged to become interested in their work, and thus gain a desire for greater accuracy on their own part. The metal work shown was very pleasing, and demonstrated how such an article as a kerosene tin, for example, could be made a thing of beauty. The chip-carving has been well worked up, and must give great scope for original designs, being correlated in some cases with the modelling.

## DOMESTIC ECONOMY.

The girls had sent over quite a number of splendid samples of preserved fruits, jellies, marmalade, pickles, &c., which were, perhaps, the only evidence of the excellent course of 21 lessons that could withstand the test of a prolonged exhibition.

## EDUCATIONAL APPLIANCES.

Several altometers and pieces of electric apparatus, including an ingenious motor and a home-made telephone which had seen active service, besides other numerous articles, bore testimony to the mechanical skill of teachers and scholars alike.

## NATURE-STUDY.

The nature-study is still in its infancy, if one may judge from the specimens sent in. Noyean, however, sent a valuable collection of native woods, and illustrations of the habits of certain local trees, while the manuscript which accompanied the exhibit seemed to show that the pupils were eager searchers after nature knowledge. The mineral products of Hillgrove showed the district rich in antimony. There was also a fine collection illustrating the homes of various species of caterpillar.

## CONCLUSION.

It would be impossible, in a report such as this, to touch on all the points of the exhibit, for nothing has been said of the photography, oil paintings, model-drawing, paper-cutting, &c., but the above will serve to give a general idea of the extent of the exhibit which has now been sent to the New Zealand Exhibition.





New South Wales Court.





The Education Department of New South Wales is to be congratulated on the whole of the work, and, at the same time, it is fortunate to have on its staff an officer of the ability and geniality of Miss Chandler, who was in sole charge of the exhibit, and was constantly at her post, and never failed to supply any information required.

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## THE TASMANIAN EXHIBIT.

Tasmania was represented by a small but interesting collection of exhibits, the predominant feature of which was the beautiful decorative work done with pen and ink.

Two original pen-and-ink designs, introducing Australian birds and scenes, attracted much attention. Another design included Tasmanian berries and wild briars. Specimens of brushwork and a map of Tasmania, with illustrations of the flora of the island, phases of the moon, &c., were also shown. All these exhibits were the work of pupils under 14.

To illustrate the muscular movement for the teaching of writing, Mr. M. Ford, of S.S. Latrobe, gave a well-executed display of flourishes. This evoked considerable interest and much favourable comment.

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## TECHNICAL SCHOOLS.

*By J. R. Trantham-Fryer, Gordon Technical College, Geelong.*

### INTRODUCTION.

There was once a time when the British nation was an art-loving and an art-producing one. In those days, even the articles of every day domestic use were made of suitable materials, and were fine in form and colour. From that, we degenerated into a nation incapable of producing, or even appreciating, fine works.

The cause of this artistic decay was due, chiefly, to the organization of labour for purely commercial purposes. In order that profits could be made more easily, an elaborate subdivision of parts was resorted to. This, as Ruskin has shown over and over again, meant death to the individuality of the craftsman, and led to factory and machine-made articles, with all the life and feeling, and everything which tends to beauty, crushed out of them. For a while, the guilds fostered art and craftsmanship, but they, too, gradually gave way before commercialism, and the oft-quoted exhibition of '51 was the climax.

Then, the schools of Art and Design at South Kensington came into the field, and after them, other schools of technical and applied art.

Later again, a few earnest art-craftsmen made articles for each others' homes as a protest against the machine-made "art-furniture" of commerce, and, from these beginnings, the arts and crafts movement developed. To-day, there is a body of earnest artists who are craftsmen, and craftsmen who are artists, working quietly, and gradually educating the tastes of the British public "at home." The antimacassars, wool mats, and wax flowers under glass shades, have almost gone, the painted mirror is going, and the ideas of people as to what they should have in their houses have completely changed for the better during the last few years. Owing almost entirely to the influence of these schools, the workman is becoming a man again, with a soul and brain, and the public is awakening, slowly it is true, to a sense of beauty in articles of every-day use.

A small body of enthusiastic art-craftsmen, with the same objects in view, namely, raising the standard of the worker, and educating the taste of the people, is working in Victoria, in connexion with that system of State education of which we are all so proud.

What they have done was shown by the works exhibited in the Technical-schools Court, of which the following is a report.

I wish it to be clearly understood that this is not a criticism, but simply a report of the work from the various technical schools.

The absence of the Working Men's College (Melbourne) from the Exhibition was a source of great disappointment to most of the visitors, and, as far as I have been able to ascertain, to all the instructors and workers from the country technical schools. One of the greatest educational benefits of an exhibition such as this is that of comparison: each school shows to all the others the directions in which it is working, and its best works in those directions, as a series of object lessons. Thus we all hoped to learn much from what is being done by the institution which has the advantage of drawing its students from the large population of Melbourne and suburbs. One expects, naturally, that the work exhibited by such an institution should represent the best possible results in the departments of science, technical art, and trade classes—hence the disappointment to country teachers and students caused by its absence.

In order to avoid any possibility of a feeling of injustice as to the positions occupied by the various technical schools mentioned in this report, I have placed them in alphabetical order.

#### BAIRNSDALE TECHNICAL SCHOOL.

The work in this collection showed a really earnest and successful attempt to bring the art side of a technical school into closer touch with the workers of the town and district, in which it is placed, and to make its teaching of genuine use to them, by giving them opportunities to study the art-principles applicable to trades and industries, and great credit is due for what has been done in this





### Parts of the Technical Schools Court.

(The top view shows exhibits from the Sale School. The case to the right in the middle view contained exhibits from Ireland.)



direction. The Bairnsdale exhibit comprised studies from the cast and from nature, wood-carving and repoussé, an overmantel, and some excellent specimens of painters' and decorators' work. The preparation of the exhibits deserves special mention.

#### BALLARAT EAST TECHNICAL AND ART SCHOOL.

The collection sent from this school was a large and comprehensive one. Amongst the elementary works were some Sloyd scale-drawings, accompanied by the objects themselves, made, finished, and shown in a manner which placed them almost beyond criticism. They were done, I believe, as a preliminary to the technical school course—apart from the State-school sloyd centre.

A number of drawings from models and casts illustrated various stages of work in the art course. Architectural, building-construction, and engineering drawings were also well represented, about thirty sheets of these being exhibited, showing clearly the methods of study followed by students in these subjects. There were also some excellent examples of a number of various kinds of joints, made in wood, and some good specimens of carpentry, consisting of models of a door and frame, a flight of steps, a double window framed and glazed, and a gate. In addition to these, the relation of the technical arts to trades and industries was shown by a carved table-top, an inlaid tray, a very good repoussé panel, several original designs for wall-papers, borders, etc., and some striking examples of stencilling, decoration, and lettering. Three trimmed hats and four costumes were also much admired, one of the latter being very artistic and uncommon in design. A number of sample pieces of colonial woods, dressed and labelled, attracted a great deal of attention amongst wood-workers. Some specimens of good modelling would have added much to the value of this collection, which was otherwise exceptionally good.

The mounting of the drawings and preparation of the exhibits reflected great credit on this school, which, under favorable conditions, promises to become a strong and valuable one.

#### BALLARAT WEST TECHNICAL ART SCHOOL.

This institution is always looked upon with interest by technical art men as a school "with a past." When Mr. Carew-Smyth was in charge, it was noted as one of our really strong technical art schools. After his departure, it fell away from the lead. Now it is starting again, under new conditions of government and supervision, to make a place for itself amongst the "live" technical art schools of Victoria.

As was expected, the collection sent into the Exhibition was a very large one, and embraced most of the technical art school subjects.



Of elementary works, there were several very good drawings in outline from the flat and from models, some excellent monochrome and shaded ornament, and a number of good figure studies in monochrome and light and shade from the cast.

Amongst the work from life, of which there was a large collection, the best, in my opinion, was a set of drawings of arms, life size, on brown paper. There were about twenty heads from life, shaded, painted in monochrome and colour, and between thirty and forty sketches in outline and black and white, some of them exceptionally good. Three figures in monochrome completed the life-study work from the drawing and painting side. There were, in addition, two figures modelled from life and cast in plaster.

A collection of about forty studies of plant life with applications to decoration, and some special designs with full sized details—in some carried out in the final material—were amongst the most interesting features of this school exhibit.

In addition to the modelled figures mentioned, there were some specimens of ornament, modelled from the cast, and some very good modelled plant forms from nature.

Amongst the craft-work which attracted special notice was a carved chair with embossed leather seat and back, a chair seat (embossed leather), a carved combination music-stool and cabinet, an embossed leather belt, and a piece of repoussé metal.

About thirty specimens of decorators' work, consisting of designs, stencil plates and stencilled work, examples of lettering, signs, &c., complete the list of exhibits from this school. My own opinion about this collection is that it would have gained considerably if selections from it had been made and properly mounted. Of course, it would have been a smaller exhibit, but more effective.

#### BENDIGO SCHOOL OF MINES AND INDUSTRIES.

This school sent in, as might have been expected, a large, comprehensive, and at the same time a strong exhibit of technical art school work. First, we had twenty good studies from the cast (ornament and figure subjects), some of them drawings in light and shade, others painted in monochrome. Then there were some capital studies in colour of flowers and fruit, and a collection of heads from life in monochrome and colour, many of which were particularly good. A number of drawings of the figure from life, some of them time studies, added considerably to the effect and value of the "life-study" section. Many of these were excellent in drawing, feeling, and treatment. Two landscapes and a particularly good bit of figure composition completed the list of what the "man in the street" calls "art school work," and it was a strong collection, worthy of the reputation of Bendigo as an art school.

The exhibits showing the application of art to various trades, industries, etc., was equally strong and much larger. It started with about sixty geometrical and original designs in outline and colour,

for stained glass, wall-papers, friezes, textiles, etc. Then there were five original stencilled repeat-friezes, twelve studies of plant life for purposes of design, eight particularly good studies of birds in water colour, and a smart and effective stencilled head (a portrait).

A pair of curtains with a flower pattern stencilled upon them excited the admiration of many and the envy of some. The same might have been said of some other curtains and table-centres, decorated in a similar manner, which were most effective and artistic.

In my opinion, the most valuable work in this exhibit was from the modelling classes—studies modelled, I presume, in local clay, and “fired” locally. This work of applying the art side of a technical school to local industries, especially when it develops natural resources, is the most valuable of all the many works technical schools can do.

The way the works were mounted and prepared helped materially the effect of this very fine show.

#### BURNLEY SCHOOL OF HORTICULTURE.

*(Not under the Education Department.)*

This school had a valuable and most interesting exhibit in the Technical Schools Court, consisting of four cases which contained specimens of metamorphic rocks, rocks of igneous origin, rocks of sedimentary nature, and rock-forming minerals, and a case of crystal-forms. Next were eight cases of pests, insect, blight-fungus etc., twelve cases of native plants, arranged in groups according to localities, and six school charts of soils, etc. All of these were arranged and classified so as to give the greatest possible amount of information, and they were accompanied by full notes and descriptions. To fruit growers, nature-study enthusiasts, farmers, and many others, the collection must have been of great interest, as well as being of considerable value. It was an illustration of another side of technical education, and a very important one.

#### CASTLEMAINE TECHNICAL SCHOOL.

The exhibit sent from this school, though not a large one, was of a very practical kind, and consisted chiefly of a number of working drawings. All of these were of such a character as to lead one to suppose that the principal work of the school was to train students who would be valuable to the town and district—helping to establish local industries, and to develop its natural resources.

The majority of the works dealt with engineering, mining-engineering, and surveying. The others were architectural and building construction works.

#### DAYLESFORD TECHNICAL SCHOOL.

This school has recently undergone some changes in its teaching staff, hence the work submitted was necessarily of an elementary character, and consisted of several specimens of drawing and brush-work. The developing of these should lead to some very good design, decoration, and applied art, in the near future.



## ECHUCA TECHNICAL SCHOOL.

This is another technical school, the work of which is influenced, and rightly so, by local requirements and conditions. The exhibit sent was a small one, but practical and valuable. It consisted of a number of specimens of carriage seats, cushions, back-rests, &c., upholstered and trimmed in leather. The design and workmanship showed the influence of the school, and reflected great credit upon the instructor, who has evidently worked hard to make his classes of practical use to the craftsmen in his town and district.

## GORDON TECHNICAL COLLEGE, GEELONG.

A large collection of work was sent from this technical college, and the standard, as a whole, was a high one. The art classes have only been working under present conditions since February, hence much of the work was on new lines, and elementary. A number of specimens of drawing were shown, in which flat washes of colour were introduced to emphasize the form, as well as some very good drawings from the cast in light and shade, and monochrome. Twelve sheets of plane and solid geometry and projection of shadows (chiefly by artisans and apprentices), and a number of shaded figures from the cast were amongst the best of the drawings. In addition, there were specimens of elementary design in outline and colour, and some works illustrating part of a course of drawing with pen and ink, for reproduction.

The modelling, of which there was a large collection (figure and ornament), was up to an exceptionally high standard for elementary work. An application of it was shown in a modelled design for a college calendar, which was accompanied by the first proof of the reproduction (by photo. process). Some elementary wood-carving and two name-plates in repoussé copper were also prominent in the art section. A feature of this college exhibit was a collection of about thirty specimens of work done by the State school teachers attending the drawing centre, in addition to the ordinary programme work required by the Education Department. The large engineering and machine-drawing classes sent a number of drawings illustrating the various stages of their work. The architectural and building-construction classes, and the builders' and artisans' drawing class, which has already earned a reputation, exhibited about fifty specimens of their work.

The trade classes of the college, of which the town and district are justly very proud, were well represented. A case of plumbers' work, illustrating various kinds of lead-joints, traps, junctions, &c., and some excellent specimens of lead dressing, was much admired, and was the only work of its kind in the Exhibition.

The carpentry class sent three exceptionally good works— a half-sized model, geometrically developed, of a pair of double doors, circular in plan and circular-headed (circle in circle); an excellent pedimented notice-board for the college students' club, designed by one



of the students on the art side, illustrating the geometrical development of the pedimental mould, and an overmantel with repoussé copper panels, designed by another student on the art side, who also designed and executed the copper panels in it. The correlation of the trade and art classes was well illustrated by these exhibits.

Four costumes shown by the dressmaking, and four hats from the millinery classes, were closely examined and much admired by lady visitors to the Technical Schools Court.

One of the features of the exhibit from this college was the fact that almost all the work shown was by artisans and apprentices. The absence of the amateur element from the Geelong Technical College is one of its most hopeful signs.

#### HORSHAM TECHNICAL SCHOOL.

As most of the work from this school has been done since the present director took charge, in February last, the collection was a small one, but the quality made up for this. Some very good freehand drawing and geometry, and some painting from the cast—in monochrome—were shown. A small but excellent collection of elementary modelling, including two of a series of relief maps and some carved wood panels, was prominent in the work of this school. As might be expected from a nature-study centre, there were some particularly good drawings of this class of work. A number of plant-form designs for panels and borders, a painting of fruit from nature, and a carved chair, went to make up an interesting, varied, and exceptionally good exhibit.

#### KYNETON TECHNICAL SCHOOL.

This was a sound collection of work, consisting of some drawings of ornament, and heads from the cast, in light and shade. Of the paintings shown, the most noticed were some heads in monochrome and colour studies of fruit. There were also some very nice carved-wood panels, which were a feature of the exhibit, and attracted a good deal of notice.

#### MARYBOROUGH TECHNICAL SCHOOL.

The work sent in from this school was of an exceptional quality, and included some specimens of the application of technical art not found in any other collection. Amongst the works shown were some geometrical drawings, with their applications to design, iron-work, &c., some perspective and reflections, a number of examples from architectural, building-construction, and machine-drawing classes.

The strongest side of the exhibit was in the applied arts section, where there were some particularly good specimens of wood-carving, panels, clock and stand, &c., an inlaid panel, and some repoussé copper work. One excellent example which was much admired was a piece of cut-linen work. The original study, its application for

a table-centre or bed-spread, and a specimen of the finished work, were mounted and framed. This, with another illustration of art-needlework (appliqué), also excellent in design, went to make up a collective exhibit, which would be a credit to any technical art school.

#### NHILL TECHNICAL ART SCHOOL.

A number of particularly good drawings, chiefly machine and architectural, were sent from this school. There were also some clever designs for linoleum, an altar-cloth, and a still-life study, in water colour.

The other classes were represented by a parquetry table-top, a capitally made tool-chest (the age of the student who made it being the cause of much speculation amongst the workmen who examined it in my presence), and some very good specimens of art-needlework and embroidery.

#### SALE TECHNICAL SCHOOL.

To the majority of the public who inspected the technical schools' collection, the dining-room suite of furniture, executed and exhibited by students of the Sale Technical School, was in point of interest easily first. There was scarcely a school which did not show some work of special merit, but no school—perhaps not all of them together—"caught on" to the extent that the Sale furnished room did. It represented a good deal of time and labour—at the exhibition as well as in the school—but the result must have proved more than satisfactory to all interested.

The suite, which was made of Queensland silky oak, consisted of a table, three chairs, with specially designed leather seats and backs, mantelpiece and overmantel—carved and fitted with metal and modelled panels—a pair of carved bellows, a sideboard upon the doors of which "Lyre Bird" and "Laughing Jackass" designs were carved, combination music-stool and cabinet, and clock-case. A cast-iron fender, specially designed, was in the room, and amongst the school work was shown the design and carved pattern from which the mould for casting it was made. This fender and the pair of bellows were purchased by Lady Northcote. A specially-designed stencilled wall-paper, plaster frieze, and some very much admired curtains were arranged as a most effective background. Several carved wood and metal trays, a "cow-bell," hung on a boomerang, for a dinner bell, a very nicely carved pedestal, and a table-cloth, completed the room, which was arranged in a corner of the Technical School Court. The native fuchsia (*correa*) was used as the *motif* for the decoration of the table-cloth, leather chair-backs, and wall-paper, the puff adder for the bellows, and the eucalyptus for the capitals of the mantelpiece and overmantel.

The other works exhibited by this school consisted of still-life, flower studies, landscape, &c. Amongst the life-study work were some good heads in light and shade, monochrome and colour, some

studies, and particularly good sketches in pen and ink, several pieces of modelling (figure and ornament) and some excellent wood-carved panels, doors, &c.

A number of designs for most of the ornament applied in the dining-room, stencils, trade labels, competition, and other certificates, lace and art-needlework, completed the school collection.

#### STAWELL SCHOOL OF MINES.

The art side of this school has only recently been started, so the work was, as a rule, of a more or less elementary kind, but of a quality which promises exceptionally good results in the near future.

The exhibit consisted of a number of sheets of drawings from models and from the cast, some geometry, perspective and machine-drawing, some excellent work from the State-school teachers' drawing centre, several specimens of brushwork, flower studies, and a good many original designs. The second largest collection of modelling exhibited in addition to the work already mentioned went to make up a show which must be looked upon as most satisfactory, considering the very short time this art school has been opened.

#### WARRNAMBOOL TECHNICAL SCHOOL.

This was another good collection of work from one of the smaller technical schools. There were some capital drawings from the cast in light and shade, drapery study, geometrical work, perspective and projections of shadows, all of which illustrated the soundness of the methods and the thoroughness of the work. In addition, there were some excellent studies of native flora, and a number of sheets of plant and bird life, and drawings with the brush, made for purposes of design. There was some particularly good work in wood-carving and wood decoration, consisting of panels, music-stools, book-shelves, &c., and several specimens of wood decoration in colour. This latter was a sort of imitation marquetry, a medium in which there are great decorative possibilities, but great dangers. It was very well treated in this case, but, if I had the power, I would prohibit its use in technical schools, except by teachers and senior students who had passed through practically the whole art course.

#### CONCLUSION.

This concludes the report of our technical schools. As I said at the beginning, this article is not in the slightest degree critical. I have occasionally expressed an opinion upon certain work—that is all.

The most hopeful sign, and it is present right through the Exhibition, is the gradual letting go of old-fashioned art-school ideas and methods. The one-time adored still-life group is conspicuous by its absence, and we have instead colour studies and various works for improving the technique of the painting student.



The practical value of the classes to the designer, craftsman, and all workers, is kept well in view. Our technical schools are intended for workers, and they should not be allowed to degenerate into recreation resorts for amateurs. The "man in the street" has a perfect right to grumble at being asked to support technical schools in order that some folk may be taught "accomplishments" at cheap rates.

In cases of special ability every man should pay his share, so that it may be properly developed for the sake of the country. But to tax people to provide cheap art, trade, or science education for the ordinary amateur is unfair to the taxpayer, unfair to the private teacher of these subjects, and unfair to the nation.

## SCHOOL BOOKS, APPARATUS, TEACHING AIDS, &c.

ALLAN AND CO.

(Collins-street, Melbourne).

Allan and Co. have a splendid collection of kindergarten songs, action songs, and musical drills.

*Voice Production and Enunciation*, by Ralph Dunstan, is an excellent little book, and should prove very helpful to teachers. It contains many valuable exercises in breathing and enunciation. Another excellent production is that of Emil Behuke on *The Speaking Voice*. In it, the muscles of articulation, tongue control, and the soft palate, are given special attention.

Modulators and charts may be had in varying degrees of difficulty.

For the infant room, the *Bird Modulator* is particularly suitable and attractive.

BAKER AND ROUSE

(284 Collins-street, Melbourne).

Now that the camera and the optical lantern are recognised as school aids, the fine display of Messrs. Baker and Rouse arrested the attention of teachers. Their exhibits were tastefully arranged, and the wall space at their disposal was profusely covered with a very fine selection of enlargements, printed on the well-known "Austral Pearl" bromide paper. The new "Austral" sepia toning solution roused much interest and inquiry. A very fine enlargement of the Chancel of St. Paul's Cathedral was a masterpiece in the art of photographic enlarging, being enlarged from a quarter-plate negative to an area 240 times that of the original. Prominently among the cameras displayed was the "Brownie," which is noted for its cheapness and efficiency.

A special feature of this exhibit was the demonstrations in kodak photography given at any hour of the day or night. With the daylight developing tank, the dark room with its closeness and discomforts is abolished, and our emancipation is still further completed by the use of the "Austral Gaslight Pearl Paper," which was printed and developed in the full glare of the electric lights of the Exhibition, giving perfect results.

This paper should appeal specially to Australians, for it is entirely made and produced by Australian labour.

## BREAR AND CO.

Messrs. Brear and Co. have a good collection of post-cards on Australian fauna and flora, geographical post-cards, &c., suitable for composition and for illustration of different branches of school work. Brear's *Model Atlas* is one of the best and cheapest of recent publications. It contains fifty maps and diagrams in colour. An excellent feature of the atlas is that on one page of a folio is printed a clear political map of the country, not over-crowded with names, while, on the opposite page, an excellently coloured photo relief map, of the same size as the political, is shown. In the large exhibition of pictures for school decoration, amongst the most interesting are "The Victory going into Action at Trafalgar in 1805," and "The Victory at Rest in Portsmouth Harbor in 1905."

## DUNCAN AND CO.

(172 Queen-street, Melbourne).

Duncan and Co. have a supply of pretty country scenes, very suitable for school decoration, at 9d. each. The white enamelled post-card frames were both artistic and effective.

## M. L. HUTCHINSON

(305-7 Little Collins-street, Melbourne).

"Of the making of books there is no end," wrote a pessimist, but whatever disadvantages there may be in the multiplication of many series of books, they are greatly over-balanced by the many advantages the public gain. A visit to the exhibit or to the warehouse of Mr. M. L. Hutchinson will be sufficient proof for this assertion. The most famous publishing houses of the world have been laid under contribution, and the fine display will be a revelation to many. A glance at Methuen's books will show that they are works of art, and that the type and the binding are of the very best. They contain the cream of the world's literature. A few years ago prices of the best books were, in many cases, exorbitant, and thus they are possessed only by the very few. But now that is all changed. Truly, this is the age of books! In Methuen's Standard Library, published in London, at 1s. net, bound in cloth, and sold in Victoria at a slight advance on the London price, we find such books as the following:—Gibbon's *Decline and Fall*; Browne's *Religio Medici*; Burke's *French Revolution*; Sir Thomas More's *Utopia*; Bacon's *Essays*; Ben Jonson's writings, *Eikonoklastes*, by Milton, and many others. All these books have stood the test of time, and are, in the truest sense of the word, standard. The same library, bound in paper, is also published at 6d. net.

Another very fine series is Methuen's library of little books on art. The great painters of the past, who were the true educators of the middle ages, have filled the famous galleries of Europe with their masterpieces. These we cannot all make the acquaintance of first-hand, but, from these little books on art, we can learn all about Vandyck, Reynolds, Raphael, Turner, Rembrandt, and others, as well as view choice photogravures of their finest works.

The "Illustrated Pocket Library" of Methuen consists mainly of works of fiction. They are of no period, nor do they belong to any class. Any book that has made a name, and has satisfied a critical public, will be found in the "Illustrated." For choice editions, the little library can be recommended; travels, essays, and poetry are all contained in these dainty little volumes, printed on thin paper, with gilt tops. There are thousands of volumes, and Australians may well feel grateful to Methuen and Co. for their enterprise in putting before them this splendid literature in so attractive a form.

But not only are old editions published in attractive forms; the newest books in history, education, science and commerce are all obtainable.



Although the elder portion of the public are so well provided for in reading-matter, children have not been forgotten. At no period in the world's history has the child's welfare been so considered, or his wants so well catered for, as at the present time. Publishers vie with one another in producing the very best books for the little ones. Great masters in the literary world spend their time in editing abridged works of famous authors for children, and publishers ably second their efforts, for at prices ranging from threepence upwards, these books can be procured.

The enchanted land is opened, and children are invited to enter in and to partake of the good things provided for them. Imagine the delight of the wee bairns, when they make their first acquaintance with the charming fairy tales of Hawthorne, or with those brave little women of whom Louisa M. Alcott has written so lovingly! What school would be without a library, when books such as these bound in cloth are sold for threepence or fourpence, according to size!

It is impossible to mention the books of all the publishers shown by M. L. Hutchinson, but many standard works tending to aid teachers in their arduous profession were on view.

It but remains to mention another series that has become popular. This is the *Scholar's Companion Series* of geography and history books that have been written locally to suit the revised programme.

During the progress of the Exhibition, these books were brought under the notice of hundreds of teachers.

#### INGRAM AND SON

(227 Little Collins-street, Melbourne).

This well-known firm has always paid special attention to the articles required by State school teachers, and, in the comprehensive exhibit shown by them, there is no falling off in this respect. The geography section, which at once attracts notice, contains a great variety of aids. The maps, showing mountains in relief, are excellent, especially those published by Nelson and Sons. Bacon's publications are conspicuous, particularly the bold feature maps, which have one distinct advantage—they do not contain too much. A useful aid on view is Philip's series of outline maps, on blackboard cloth. Chalk can be used to fill in the details which have to be taught, and as the surface is easily cleaned, the outlines can be utilized for geography lessons in all classes. Arnold's relief maps are very well finished. The prices, however, are too high for teachers of small schools. A series of charts of geographical definitions, with pictures and plans to correspond, is a serviceable aid. I noticed also paper pulp for relief maps, sand trays, globes of all the kinds most used, and a variety of astronomical and other diagrams. Two exhibits, which are particularly good, are the tellurions. One was made by Mr. Dineen, of Geelong, and the other by Mr. Haskins, of Yambuk. I understand that arrangements have been made to manufacture the latter article at a price which will enable the majority of teachers to purchase it. History aids are numerous in this exhibit. There is a variety of coloured illustrations, which teachers will find useful in making history more interesting. Those published by Arnold and Son, and Johnston, are effective. As regards historical pictures, the time has come for more artistic work in their preparation. At the same time it is but fair to say that those shown seem the best obtainable at the price. In arithmetic, such aids as Cowham's chart for teaching fractions, and Rix's number cards, are seen, as well as the standard books recommended by the Department. In science, there is a good display of barometers, thermometers, scales, weights, and apparatus needed in teaching the Department's programme. I saw an excellent set of metric weights at a reasonable price, and aneroid barometers are so much less than they used to be that no school should be without one. Test tubes graded in cubic inches, and a neat piece of apparatus to illustrate the principle of Archimedes, are also worthy of mention.



Considerable attention has been given to Nature-study. The books generally approved of are shown, and many that are comparatively new. Some of the books in this section will be helpful to teachers needing guidance. One that particularly attracted my attention is that by Catherine Dodd. Teachers who are unable or unwilling to make observation cases can obtain them from this firm, and a specimen is exhibited near the centre of the court.

In the section for brushwork and drawing, all the well-known publications are shown, and also some that are new. I noticed several books suitable for brushwork in the higher classes. One, by Rogers, contains a great variety of examples, some of which are good. Copies of both brushwork and drawing on a large scale for class teaching are also exhibited. Little need be said concerning grammar, reading, and writing. The exhibits dealing with these subjects comprise the books prescribed by the Department and many others. There is a good supply of books for reading, many of them dealing with history, for those who like to use supplementary readers.

School decoration has not been overlooked. Suitable pictures for those who cannot afford expensive ones are displayed on the wall. These include landscapes, historical pictures, and photographs of Australian and New Zealand scenery. A good collection of books suitable for school libraries is to be seen close by. Those recommended by the late Inspector Rix are included. In the infant-work section, the most useful books on the teaching of infants are exhibited, also charts and pictures illustrating nursery tales, number lessons, and the like. Some sheets exhibited, for teaching phonics, ought to be serviceable in our infant-rooms. Nature-study note-books, interleaved with cartridge paper, and weather charts with gummed tablets, are articles that will supply a want. The pictures and charts published by Macmillan to illustrate nursery tales are useful articles. The publications of this firm are, generally speaking, suitable, and for the most part, well executed. Their diagrams and other aids have been designed, in many cases, by practical teachers, and serve their purpose well. Charts to inculcate patriotism, good manners, the rules for good health and for daily conduct, are exhibited, and are suitably mounted. The excellence of the physiology charts published by this firm, and by Nelson and Sons, is worthy of mention.

Articles which can be made of great use in school work are the manilla sheets. On these, reading, poetry, and other lessons can be set out.

The brown paper will be found equally serviceable by teachers. It is particularly suitable for quick and rough illustrations for history, geography, nature-study, and other subjects. It is arranged in sets so that a series of sketches can easily be shown.

Time-table forms of an approved type, charts for meteorological records, and forms of many kinds to facilitate the routine work of a school, are also to be seen.

Teachers who require definite information concerning physical drill and breathing exercises will find a great number of books dealing with these subjects. Among them I noticed some that are both good and inexpensive. *The Art of Breathing*, by Surgeon Captain Hoper Dixon; *Wand Exercises*, by Chesterton; and *Free Gymnastics*, by Betts, are regarded by experts as suitable books.

The exhibit, as a whole, shows that the needs of our teachers are carefully considered, and the programme of instruction kept steadily in view.

T. C. LOTHIAN

(49 Elizabeth-street, Melbourne).

Mr. T. C. Lothian, who is the Australian representative for the following educational publishers:—The Cambridge University Press, The University Tutorial Press, Messrs. William Blackwood and Sons, Messrs. W. and R. Chambers, Messrs. T. C. and E. C. Jack, and Messrs. Oliver and Boyd—showed a complete range of books from his firms' catalogues.

A striking feature of this exhibit was its comprehensiveness; books ranging from those used in the Universities to the most elementary being shown there. Another distinction worthy of note consisted in the number of new, up-to-date books shown, many of them having been published within the last year or so.

The Cambridge University Press, well-known throughout the English-speaking world for its text-books of the classics, edited and annotated by the most famous classical scholars, showed an interesting range of work. Specially we noticed the number of teachers' books, such as Thring's *Theory and Practice of Teaching*, Fitch's *Lectures on Teaching*, MacCunn's *Making of Character*, Bosanquet's *Education of the Young*, Laurie's *Training of Teachers*, and many others of the same character.

A recent introduction of the Cambridge Press is the *Winchester Arithmetic*, by C. Godfrey, M.A., and G. M. Bell, B.A. This work is spoken very highly of. It is published at 3s., but an interleaved copy is issued for the use of teachers (with answers printed on inserted leaves opposite the questions) at 6s.

The Tutorial Press, one of the youngest of the educational publishers, has issued a series of text-books within the past few years, which are rapidly becoming adopted in the schools of England and Australia. Several of this firm's publications are extensively used in Australia and New Zealand, notably the *Tutorial Arithmetic* (price, 4s. 6d.; key, 5s. 6d.); Deakin's *Algebra*, and the *Tutorial Trigonometry*.

Mention may also be made of the *Educational Ideas of Pestalozzi*, and the *Educational Ideas of Froebel*. These two works are published at 1s. each.

Messrs. W. and R. Chambers' publications are well represented. Many books specially adapted for teachers' use are published by this firm. *How to Keep Well*, a health reader for the use of schools, is a simply written reading-book, dealing in a popular manner with those fundamental laws of health and temperance which should be known by every scholar before he leaves school. Among the books and school aids displayed, we notice the following:—*Word-Building and Transcription*, a series of small books for the different classes. The prices range from 1d. to 3d. each. *Word-Building Sheets*, consisting of fourteen sheets, each 36 by 25 inches, printed in bold type on stout manilla paper, strongly mounted on a roller, 7s. per set. Chambers' *Twentieth Century Dictionary of the English Language*, price 3s. 6d.

Messrs. William Blackwood and Sons are strongly represented by a fine series of Latin, Greek, German and French books, which are highly commended by the reviewing press. A special feature of Blackwood's exhibit is the series of illustrated classics, which are moderate in price and attractively printed. Some of their books are:—*The School Anthology*, a selection of English verse from Chaucer to the present day, in two parts, price 2s. each; or in one volume, price 4s. *The Story of the World Readers*, in five books, at prices ranging from 1s. 4d. to 2s. each; a simple and interesting narrative of the history of the world from Bible times to the present day. Uniform with these are two readers called *The World's Childhood*. These two readers consist of fairy stories and simple stories of the gods and heroes. They are fully illustrated, and the price is 10d. each. *The Story of the World Readers* are used in the State Schools of Western Australia, also in South Africa, and in many schools in Australia and New Zealand. They would make a fine addition to any school library.

Messrs. T. C. and E. C. Jack's series of books shows the extent to which art may be employed in the production of educational works. Toned and unglazed paper is used, and a special type, which causes a minimum of eye-strain. Wherever possible, illustrations by accomplished artists in colour and in black and white are introduced.



An admirable list of supplementary readers suitable for school libraries is shown, such as *The Children's Scott*, price 1s. 3d.; *The Children's Pickwick*, price 1s. 3d.; *The Book of Notable Days*, price 8d. The last-named book contains eighty pages, and, by its help, teachers can easily give special lessons on fifteen great events in the history of our Empire.

A very fine series of books is published by this firm under the title of *Told to the Children Series*. There are eight books at 8d. each. The list consists of *Stories of King Arthur's Knights*, *Stories from Chaucer*, *Stories from the Faerie Queen*; *The Pilgrim's Progress*, *The Heroes*, *The Water-Babies*, *Robinson Crusoe*, and *Robin Hood*. These books supply the infant teacher with just the stories she requires for the little ones.

This firm is also publishing a series of nature-study books, under the title of the *Look about You* nature-study Books.

The *Three Term Arithmetic*, in seven books, is well worthy of notice. These books, of which 70,000 were sold within a few months of publication, are well adapted to the use of pupils in both primary and secondary schools. The year's work is set out in three terms, with a series of appropriate tests at the end of each term, so that they provide a scheme of work, together with an examination scheme, for each term. A special feature of the series is the practical work in measuring, weighing, squared-paper drawing, &c.

A most important publication of this enterprising firm is *French by the Direct Method*. Nothing more need be said in commendation of these books than that they have had a circulation of nearly 160,000 in Germany, and are rapidly gaining ground among the secondary schools of the British Empire. They are published in a series of six books, ranging in price from 10d. to 2s. 6d.

Among the books published by Oliver and Boyd, we notice one small work of sixty-four pages, *A Synopsis of British History*. It is a brief summary of all important historical events and developments, chronologically arranged, and showing, where possible, causes and results of such events or movements. It is invaluable as a companion to any class history, or as a handbook for memorizing intelligently the various facts of history.

Teachers on the look out for a good introduction to practical physics cannot do better than consult *An Introductory Course in Practical Physics*, price 1s. 6d. This book contains a series of simple experiments most useful to the science teacher.

In Mr. T. C. Lothian's exhibit was also to be seen a fine series of beautiful coloured pictures, suitable for hanging on the school wall. In all there were about 180 pictures, mounted on cards, and eyeletted ready for hanging. The series consist of pictures of animals, flowers, birds, sea-shells, moths, beetles, &c. The size of each card is about 12 inches by 9 inches, and they are sold at 4d. each.

A number of fine American educational works, including Parker's *Talks on Teaching*, were also included in this exhibit.

## W. P. LINEHAN

(Little Collins-street, Melbourne).

One of the first things to catch the eye at Mr. Linehan's stand was the display of beautiful coloured charts and diagrams published by Messrs. G. W. Bacon and Co. Among these were:—Bacon's *Chart of Garden Flowers*, printed in colours true to nature, 30 by 40 inches, on cloth, rollers and varnished, price 7s. 6d. *Chart of Wild Flowers, Picturesque Geography*, a set of twelve exquisite pictures, 20 by 14 inches, mounted on one sheet, on cloth, rollers, and varnished, price 17s. 6d. *Chart of Geographical Terms*, fifty terms applied to land and water, illustrated, and neatly printed in oil colours, 30 by 40 inches, on cloth, roller, and varnished, price 6s. *Number Chart: Fruits*, printed in oil colours, 30 by 40 inches, mounted and varnished, price 7s. 6d.



Other charts were :—Brown's *Form and Colour Chart*, price 6s. Arnold's *Good Manners Chart*, based upon the rules of the Children's National Guild of Courtesy, price 5s. Arnold's *Simple Injuries and Ailments: Their Prompt Treatment*, price 5s.

Among the books on Mr. Linehan's stand are *The Physical Configuration of the Australian Continent*, by Ernest Favenc; *The Discovery of Australia and New Guinea*, by George Collingridge, and *Reasoned Methods in Arithmetic and Algebra*, by P. J. O'Mara. *The Uses of the Parts of Speech as shown by Examples*, by J. C. Nesfield, is an excellent little book for use in Classes III. and IV. of our State schools. The price is 1s. 6d. *The Geographical Companion*, being notes on recent geographical progress and territorial change, arranged by Mr. J. C. Meiklejohn, price 8d. This little book gives notes of geographical progress and territorial change up to the year 1905. This book can be used to supplement any educational manual on geography. *The Word Builder and Speller*, containing many words and phrases newly adopted into the English language, together with all the more difficult older words, arranged upon the principles of growth, likeness and contrast. Published by Edward Arnold. Price 3d.

#### MACMILLAN AND CO. LTD.

(London. Local Representative, G. BLAKEMORE, Block Arcade, Melbourne).

As was only to be expected from a firm of such high standing as this, the display made in general was comprehensive and thoroughly educational. Of conspicuous interest to teachers were the charts for the junior school-room, such as the number and table charts, good manners, patriotic chart, nursery rhymes, and tales, and history charts. The latter was in the form of a circle, showing the sovereigns in order in bold outline, beginning with Egbert and ending with Edward VII. Inside the circle are the useful genealogical trees and a map of the world with the Empire's possessions coloured in red. This excellent diagram, invaluable for the chronological study of history, is from the hand of a Queensland teacher, Mr. L. Williams, of Surat Public School. Now, when the concentric plan of teaching history is so much advocated, the "A. L." history pictures will meet a decisive want. The series of 18 includes the noted events of epoch-making incidents in our country's story, and also illustrates the national life, dress, architecture, manners and customs, &c., of the people. They are bold in style, accurate in drawing and colouring, and at the price (5s.), they should be within the range of most schools. The three sheets on synoptical history are also valuable aids to the teaching of this subject. They are prepared on the principle of representing "time" by "space." This fact, together with the system of colouring, which is also an aid to memory, places the charts in an unrivalled position as mnemonics. The natural history illustrations will be found invaluable as aids to comprehension of the "life-histories" of several familiar animals, such as the bee, the house-fly, the ant, the butterfly, silkworm, moth, the slug, mosquito, &c., and should prove a splendid help to teachers unable to make drawings of this kind for themselves. The nursery rhymes consist of twelve sheets, printed in colours, of sufficient size to be easily seen by a class, and they are so clear and distinct as to form admirable subjects for conversational lessons. For composition, they will be found admirable backgrounds for eliciting the matter to be built up as short stories. Such aids are much in request by the forward teachers on this subject, and they are here to be found in fairy tale, myth, and nursery-story form, exactly appealing to the interest and the eye of the pupil. The price (3s.) cannot be cavilled at, even by the "back-block" teacher.

Besides a fine collection of charts, we saw some remarkably fine relief model maps of Asia, Africa, and Australia. As this form of teaching geography has become so marked a feature of the new education, it is noticeable that the maps in the Exhibition, more or less, all conform to the type illustrated so graphically and originated by this firm.

They show the orographical relief in various colours, the high browns indicating high lands, and the soft browns and greens the gradated slopes. The material is not heavy, the outlines of the contours are clearly defined, and all the physical features are clearly and boldly prominent. From such maps, the teaching of geography should be a pleasure instead of a wearisome task, and the maxim that the instruction should proceed from the near to the distant can be enforced by the regular use of the sand tray, as presented in the following manuals:—*Map Drawing*, by Elderton, and the *A. L. Geographical Definition Chart*, and Bosworth's *Short Geography of the World*. Such aids as memory maps, and the Nature-study series with accompanying diagrams, are plentiful and very suggestive to the earnest teacher, who will find in the *Brush-drawing*, by Vaughan, a cyclopædia of information for the teacher, as well as a most excellently graded course of brushwork designs. The examples in this series are based upon forms of genuine beauty. The *A. L. Water-colour Work*, by Wood and Kershaw (2s. 6d.), is a suggestive scheme of lessons in flat washes for the junior classes, and the forms are accompanied by directions which go far to lighten the difficulties of teachers in this subject, always attractive, but sometimes difficult, to deal with.

*Elementary Lessons on Freearm Drawing* by Florence Hewitt will prove a helpful manual to those who have had no training in this new manual subject. The designs are well graded, and the accompanying letterpress is brief but much to the point. Drawing from nature now being recognised as a part of the trinity of roads to be followed by the young scholar, and a certain amount of freedom being allowed in the correlation of the nature forms with the nature-study, the book on *Chalk Drawing*, by Hannah Dean, will be a valuable addition to the teacher's library. How to handle such subjects as the orange, apple, tomato, turnip, potato, lemon, pear, &c., as well as the common flowers, is illustrated in colour, and the methods of drawing and colouring are simply and effectively displayed.

Agriculture students will find *Principles of Agriculture*, by L. H. Bailey, one of the most up-to-date manuals on this subject. Nature-study will be made simple and delightful with such a manual as *First Lessons with Plants* by the same author. Another helpful book on nature-study of a more advanced scope is *An Introduction to Nature-study*, by E. Stenhouse, a manual already highly appreciated by those who have made any progress in this subject. For a general, yet not too advanced course in nature-study *Real Things in Nature* by Edward S. Holden will be found to contain all that the primary teacher can require to meet the demands of the latest syllabus of our Department on this subject.

Amongst the works useful to teachers were the following:—*Bright Story Readers*; *The New Literary Readers*; *The New History Readers*; *Landmarks of English History*; *The New Physical Geography* (Tarr); *Philosophy of Education* (Horne); *Special Methods on Reading* (McMurray); *The New Basis of Geography* (Regway); *Text-book on the History of Education* (Munroe); *Handbook of Nature-study* (Lange); *Special Methods on Geography* (McMurray); *Principles of Agriculture* (Bailey); *Teaching of Elementary Mathematics* (Smith); a series of cloth-bound classics; *Special Method in Primary Reading* (McMurray); *The Outlook Fairy Book for Little People* (Winnington).

#### G. PHILIP AND SON.

(262-4 Collins-street, Melbourne.)

The display of Messrs. Melville and Mullen naturally attracted attention, for the firm have for years held a distinctive place as educational stationers. Here are the tools of trade of the schoolmaster for all sides of his work. The range covers the ground from the wants of the elementary teacher to the text-books and apparatus of the university student. Much of this firm's good work has not been restricted to mere importations. They are the publishers of our local University text-books, and, as a rule, we find on



their shelves the latest in this branch. We see lying side by side, the useful shilling *Handbook of Public Examinations for 1907*, and, say a *Treatise on the Geometrical Properties of the Parabola*. The earnest student may batter at the door of knowledge with Hansen and Hart's *Typical Selections*, or slake his thirst for information and formulate his plans while poring over the familiar canvas-backed *University Calendar* of the year, inspired by its motto of "*Postera crescām laude.*" Yet one turns from these to watch some sweet-faced girl, fresh from the junior class of our State school, who turns over lovingly and with smiling appreciation modest little books which the humble sixpence may buy, and which have been graciously edited by a real doctor—LL.D. And one turns these over to find ideal adaptations of *Grimm's Fairy Tales*, *Hans Andersen*, and *Little Red Riding Hood*. One sees globes of all sorts and varying prices. But they monotonously and aggressively stand with Australia down under, and the north ends of their topsy-turvy axes pointing to our beautiful Southern Cross. I think that, by-and-by, we shall have some cheap globes with not too much detail, but which will have a movable universal meridian and a compass for orienting them underneath. Such a globe is here, of course, but the poor teacher cannot spend half a month's income on it. Meantime, it is perhaps desirable when purchasing a globe with limited funds to get a small one which can be made to fulfil some of these conditions rather than to buy a large one which cannot.

We note excellent atlases, one with distinctively Australasian features, and one excellent large print atlas of physical geography. Geometrical models are specially made by the firm, and are properly gauged to their true forms. Most schools require now the newer Empire maps. The Navy League map is, of course, the very best of its kind, but Howard Vincent's map is replete with the latest information, and where economy has to be studied, one may choose the small edition of the latter, which is effective for the purpose, and may be had for 7s. 6d. Brushwork and drawing apparatus are, of course, in quantity. We also note Cox and Co.'s films for colour-blending. Scientific apparatus fills a shelf, and the specimens invite us to the larger stock which the firm has at its house. One turns from the display with the thought that, though "bad workmen complain of their tools," the best workmen gets his best work out of up-to-date tools.

#### G. AND C. MERRIAM AND COMPANY.

(152 Elizabeth-street, Melbourne.)

One of the best exhibits shown was the fine collection of very beautiful pictures suitable for the decoration of our school walls.

A very telling demonstration of the suitability of the Merriam Co.'s pictures was given in their adoption by Mr. Carew Smyth in his scheme of decoration for his "Decorated School-room," which was a source of attraction at the recent exhibition.

It has been argued that the cost of this class of picture supplied by Merriam and Co. prohibits the majority of State schools from purchasing. I think that so soon as the teacher is convinced of the need for suitable wall-hangings, he will at once see that very few only of this class of picture will fully compensate for the present crowded state of his walls with worthless pictures.

School desks were shown of various pattern, all carefully designed to give comfort so that the child can now work, quite free from that cramped condition which must exist in the old backless seats, and which generally are so close to the desk that the child has great difficulty in finding room for his body. Under such conditions good work in free-arm drawing, &c., was out of the question, but, with the introduction of the new desks, there will be no excuse on this score.



What is most marked in the new blackboards is that the weight of the boards is considerably reduced. The material from which they are constructed allows of the boards being made of much more extensive surface than the old heavy boards now in use. Another great advantage, appreciated by teacher and pupil alike, is that in the new boards, the surface preparation used gives a beautiful "flat matting," so that we no longer have the troublesome complaint, "the shining board." The preparation (hyloplate) used in the surface can be procured from this firm. In addition to the black colour in general use, a very nice shade of green was shown.

With the blackboards were seen the dustless erasers, a very simple arrangement indeed, but a valuable aid to the teacher and pupil in their work on the blackboard, far surpassing the untidy and unhealthy "duster" to be found in many of our poorly equipped schools.

Another teacher's aid that attracted notice was the rubber-tipped pointer, an excellent thing in the hands of the teacher, who may use it on the blackboard without fear of injury to the surface of the board.

Not the least valuable exhibit was the new chalk to be used in blackboard drawing. This chalk has a much firmer body than the ordinary chalk, and therefore allows of a much clearer line being drawn, free entirely from the dust inseparable from the common chalk in use.

The Merriam Co. is the publisher of *Webster's International Dictionary*, and quotes special terms of purchase for the benefit of teachers.

Another publication by this firm is the *Art Reader*, which should be appreciated. This is a very condensed and descriptive work, and deals with such picture subjects as are comprised in Merriam's exhibit. In the hands of the teacher about to select his school pictures, this little work is invaluable.

Maps were shown in cases of various design, so that when not in use the map could be automatically rolled in the case. The cases can be obtained to hold any number of maps required.

#### P. H. McELROY.

Mr. P. H. McElroy made a very interesting display of electrical apparatus, both complete, and in parts ready to be put together.

Mr. McElroy makes a point of supplying, at reasonable cost, material for the handy man and boy who can "help himself" in constructing useful electrical devices. On view were batteries of various kinds for the generation of electricity, and model motors in parts. These are so simply made, and the instructions are so clear that the student cannot fail to make a motor which will work.

The special apparatus for class demonstrations was exceptionally good, especially the voltmeters and ammeters with clear dials of large dimensions.

One interesting exhibit, which deserves special mention, showed the stages in the manufactures of the Robertson incandescent lamp from the cotton-wool, from which the carbonized filament is made, and the rough bulb to the pretty little finished lamp.

Rotating fans, electric locomotives, magnets, pocket galvanometers, and telegraph instruments were to be seen.

The electric top, to illustrate the Wollaston colour experiment, was an attractive little piece of apparatus. It is entirely new, and will spin for hours at high speed. Beautiful illusions may be produced by means of coloured discs, and by varying the rate of speed of revolution. It is also a perfect running motor.

Many other pieces of electrical apparatus were shown, and altogether Mr. McElroy's exhibit was useful, attractive, and novel.

## JOHN MURRAY.

(London. Local representative, J. W. Kettlewell, 273 George-street, Sydney.)

Mr. John Murray, the well-known London publisher of books, is well abreast of the new movement in education, and has recently published some good manuals, notably Consterdine and Andrews' *Practical Arithmetic*, which has been endorsed by the Education Department of New South Wales. Consterdine and Barnes' *Practical Mathematics* is used in a large number of schools throughout New Zealand, and Andrews' *Geometry*. Mr. Murray has also published a good series of primers on philosophy, physiology, use of words, logic, &c. Those on philosophy, physiology, and logic are used by the Sydney University students.

Leonards' *Practical Science*, with full directions for experiments, is an admirable treatise on this fascinating branch of education. It is well illustrated, and has been set for the teachers' examinations in New South Wales. *The Face of Nature* tells the story of geology, botany, astronomy, and the records of the rocks, in a novel and interesting manner, and can be used as a class book, or as a series of lectures.

His *Grammaire Française* has been compiled on the principle of the new and direct method of teaching French, which has been found to be far more effective than the older systems. Other books displayed in this collection are:—Watts' *Nature Teaching*, based upon the general principles of agriculture for the use of the schools, a recent addition to the already long list of nature-teaching manuals. Warrens' *Commercial Knowledge*, a manual of business methods and transactions, practical and concise, and containing much information of value to students of business routine and usages; *Book of British Songs for Home and School*, with music and words, a representative collection of the standard songs of all nations; Fream's *Agriculture*; Hall's *The Soil*; *The Boy and His School, what it can and cannot give him*; the new issue of the *Complete Classical Atlas*; enlarged editions of Smith's *England, Rome, and Greece*; and the well-known series of students' manuals, University extension manuals, progressive science series, musical manuals, and many other valuable educational publications, which students in all parts of the world have used and are continuing to use.

## THE ORANGE JUDD CO.

The Orange Judd Co., the notable American publishers, recently issued Jackson and Daugherty's *Agriculture through the Laboratory and School Garden*. It has especial interest for Australians, for it contains the very latest methods of nature-study, and, like the majority of American educational books, is lavishly illustrated with photo. plates. It is set for the teachers' examinations in New South Wales.

## G. PHILIP AND SON.

(London. Australasian representative, J. WILSON HUELIN, 49 Elizabeth-street, Melbourne.)

G. Philip and Son, Ltd., of London, occupied the end of the North Gallery. The whole of this exhibit was sent direct from London for the State Schools Exhibition.

The exhibits were many and varied. First in importance was the display of large physical maps of the continents, that of Asia being particularly fine. These maps are really excellent, and should supply a long-felt want. It is to be hoped that, to the above, will be added physical maps of the Australian States. One very fine map of New Zealand was shown.

The pictorial map of the world, showing the natural products of every country; the new Habenight Sydow map of Australasia, giving the German view of geographical science; the elliptic map of the world, and the fine small school-room maps at 3s. 6d. and 5s. 6d. are worth attention. The new Relievo Test maps are also exceedingly useful, as are the test, mercantile, and orographical maps.



In diagrams the display was also good. That of geographical terms, large size at 14s., is very attractive, and the firm is willing to supply the "Southern Cross" in place of the "Great Bear," and indicates shadows at noon to suit Australia. A small diagram of terms is also published at 5s. Pictorial diagrams of geographical interest are—*Ancient History Pictures*, *History of Civilization in Europe*, *Types of Nations*, *Races of Mankind*, *Easy Astronomy*, *Statistical Diagrams*, *British History Pictures*, *Object-lesson and Nature-study Pictures*, and *Industry Diagrams*. From these, teachers should be able to choose diagrams which would be of much educational value.

Some fine work was shown in the *Typical Series of Masterpieces*, *Metric Weights and Measures*, *First Aid to the Injured*, *Landseer Natural History and Culture Series*. These would make good school-room decorations.

As time-savers for teachers, the map-building sheets in sets of six for 9s., *Blackboard studies*, *Atlas of the World's Chief Industries* (2s.), and the new "Map-tester," at 6d., are all deserving of attention.

An immense variety of atlases, from 6 guineas to 3d. were on view, suitable for teachers' or scholars' use, comprising physical, relief, classical outline, &c.

Dr. Yeats' text-books on natural history and commerce were on view, also all the text-books used at the Naval Colleges at Greenwich and Portsmouth.

Globes made a good display, and included school, relief, "slate" for demonstrations, and celestial with a tellurion.

This exhibit also showed anatomical models of the human frame, and of various animals; also models of engines and dynamos.

The books on brushwork were many and varied, both for teacher and scholar, while those dealing with geometry, drawing, sloyd, gardening, and nature-study were abundant. Geography manuals and readers in great variety were shown.

One is apt, perhaps, to make the mistake of associating the name of Philip and Son mainly with maps and atlases, but a visit to the exhibit shows that almost every branch of education is dealt with. The firm offers to put its immense stock of plates, litho. stones, &c., at the service of publishers, and reproduce or reduce any desired diagrams. The local representative of this firm is Mr. J. Wilson Huelin, 49 Elizabeth-street, Melbourne.

### ISAAC PITMAN AND SON.

(London. Local representative, J. W. Kettlewell, 273 George-st., Sydney, New South Wales.)

The name of Pitman has always been associated with the Universal System of Shorthand, but their display of educational manuals denotes the energy and development of this progressive firm. Their *New Era Geographies*, a series of eight books, are such as at once attract the eye of the teacher.

The photo. illustrations, coloured plates, paper, type, arrangement and selection of the reading matter, &c., form a fine combination of mechanical skill and literary judgment.

*The Evolutionary History of England* treats historical facts in a practical manner. The article on the growth of church, law, parliament, trade, literature, expansion of Empire, instead of being scattered throughout the book, are so grouped, that each subject appears under its particular heading, forming a continuous narrative of each section. The illustrations are copies of the *Nation's Pictures*. *The Commercial Reader for Senior Classes* is profusely illustrated. It is a concise account of the great inventions and industries of the world.



Their technical and commercial books, geography, history, correspondence, book-keeping, business training, arithmetic, &c., are in use throughout Australia and New Zealand.

The vertical and upright style of writing evidenced in *Jackson's Copy Books* is a system easily acquired, and is a near approach to typewriting in its legibility.

Hugo's Institute for Teaching Foreign Languages issues books in self-tuition in French, German, Italian, and Spanish. The phonetic system of pronunciation is a great assistance.

MRS. CHAS. G. PRESTON, LL.B.

(285 Collins-street, Melbourne.)

This exhibit was marked by several features of special interest. Besides providing for the ordinary needs of the school, Mrs. Preston caters for the special requirements of the kindergarten and infant room, and for drawing and colour work with pencil, chalk, and brush in all grades.

The educational value of the "paper occupations" of the kindergarten is largely drawn from the beauty and purity of colour of the material employed. The Milton-Bradley papers displayed as a "spectrum circuit" amply fulfil this condition, and constitute a good working basis for a definite scheme of colour-teaching, upon which may be developed a refined taste and keen perception of colours in nature and art. Colour blindness is said to occur seldom when the eye has been exercised in colour at an early age, and, in many manufacturing operations, a nice discrimination of colour has a definite commercial value. The colour top forms an integral part of the Bradley colour scheme.

The primitive industry of weaving is represented in the exhibit by examples in paper and raffia, the former affording value in colour, the latter in permanence and utility. In the light of modern physiological and psychological knowledge, the old-fashioned fine weaving is now discouraged for young children, and the paper mats displayed showed strips not less than one-third of an inch wide. Similarly, in the occupation of sewing, cards are now provided with sample outlines of natural forms with large holes for coarse thread, instead of the fine and intricate geometrical designs which obtained in an earlier stage of Froebelian thought and practice.

The Milton-Bradley building gifts, I. to VI., of Froebel, are of finest material and workmanship. The new curvilinear gift recently introduced by Miss Elizabeth Harrison in her book on the building gifts illustrates the divided cylinder, much in the same way as gifts I. to VI., illustrate various modes of division of the cube. Wooden beads in six colours give a further expression of the three fundamental forms, while the enlarged coloured sticks, 3-16ths in. square, and of various lengths, are an advance upon the sticks in general use for the occupation of stick-laying, being more effective and substantial in use.

For picture-lessons and inexpensive wall-decoration, the "Story Pictures" (20 inches by 26 inches) may be mentioned, a series of pictures in course of publication by Mrs. Preston. The subjects are of everyday interest to the child, illustrating some incident of home or social life, or well-known story, so as to fit the pictures for use with a large class of children. The subjects shown are "Two Geese" and "Miss Muffet," and these will be followed by others.

Among the materials shown, the "Kinipale" goods take a high place. The Kinipale papers are shown in art shades and in sheets of different sizes, or made up into books, some interleaved with ruled paper for correlating writing exercises with drawing. The inexpensive kindern chalk does effective work, as shown, while samples done with the kinipale chalks were much admired. Numerous samples of water-colour work from Californian schools gave an idea of the methods of work in that State, and testified to the brilliance and purity of the Milton-Bradley water-colours.

Nature and geography excursions were suggested by the sight of a notebook containing ruled paper and plain cartridge alternately—just the thing for notes and sketches.

A number of American educational books and periodicals, special books on kindergarten principles and practice, stories, readers, &c., are also deserving of notice.

### GEO. ROBERTSON AND CO. PROPY. LTD.

(107-13 Elizabeth-street, Melbourne.)

In the north-east balcony, the firm of George Robertson and Co., one of the oldest publishing firms in Melbourne, has made a very fine display, every available portion of the large space allotted to them being filled.

Recently this firm has developed the side of its business dealing with school supplies, special attention being given to State school needs, and this department, under the care of Mr. L. Watson, is worth spending considerable time in.

The extensive exhibit, embracing the work of such firms as Bacon and Co., Edward Arnold, T. C. and E. C. Jack, Meiklejohn and Holden, Johnston and Co., Newmann and Co., and Blackie and Son, covers every possible phase of the primary and secondary school courses.

On examining the wall display, the amount and variety of fine teaching aids impresses one, and it is somewhat difficult to single out any one firm. The historical and geographical wall sheets of T. Nelson and Son, and of Dent and Co., strike one as being very fine aids in teaching these subjects, especially is this so in the department of Roman history.

Bacon and Co. have many excellent wall maps, strongly mounted on rollers. Those dealing with the physical features are very good, and for class work make a good substitute for model relief maps. This firm has also some fine blackboard drawing and brushwork sheets.

Dent and Co.'s fine wall sheets for teaching French are very good. It requires no imagination to understand how beneficial these would be in acquiring thoroughly a French vocabulary.

Alf. Cooke and Co.'s pictures for infant rooms attract attention by the brightness of their colouring. They are finely drawn and brightly coloured illustrations of nursery tales and fables, and are well suited for infant school work. The humour in some of them is irresistible, even to grown-ups, and little ones would thoroughly appreciate this set.

Before leaving this portion of the exhibit, special mention must be made of the "Bird's Eye View" wall sheets of R. Johnston and Co. Those dealing with geographical subjects are very fine, so also are the views of Paris, London, &c.

The endeavours of the firm to meet the demand for school libraries is shown by their issue of the "Unique Library." This series is composed of some of the best tales ever written for boys and girls. The aim has been to include in the series only what will interest, and to present the matter in the most attractive form. Such books as *Westward Ho*, *Kenilworth*, *Souhey's Nelson*, *Swiss Family Robinson*, *Tom Brown's Schooldays*, *Coral Island*, *Gulliver's Travels*, and many others dear to the juvenile heart appear on their lists. They are moderate in price (1s. 6d.) and they are strongly and attractively bound. Another series that appeals to one is the "Told to the Children" series. Each volume is illustrated with eight pictures, in colours, by well-known artists. Stories culled from such sources as *The Annals of Robin Hood*, *The Pilgrim's Progress*, *The Heroes*, *The Morte d'Arthur*, rivet the attention. They are told in simple language by those who understand the needs and capacity of the child-mind, while preserving the original atmosphere. Another striking series is that of *Animal Stories*. These are retold from that famous children's magazine, *St. Nicholas*, and will be read with delight. The list of authors comprises the great American story-tellers, and the many beautiful illustrations are by the best artists.



One of the most attractive of all the series is that entitled "Every Man's Library." These are ideal little volumes, and well worth attention. Lastly, but by no means least, is the "Little Classics," published by Blackie and Son. The series includes not only well-known works, but many rare and almost forgotten works, interesting in themselves, and important in the development of a national literature.

Meiklejohn and Holden's lists of excellent works include some of great importance. Their *History of English Literature* is a very fine work, and well repays many hours' reading.

There is one book here which is deserving of special mention. It is in the process of manufacture, and strikes one as being far superior to anything of the sort we have hitherto had in our schools. The book I refer to is the *Rational Atlas*. For many years the want of an atlas that shows clearly the physical features of a country, especially the mountains, in relief, instead of as centipedes, has been keenly felt, and now, at last, in this atlas, we have one that combines clearness of the political with proper attention to the physical side of geography. The book has eighteen relief model maps, each opposite the political map of the same country, Australia being favoured by having five of these, with Victoria treated separately. This atlas is sure to be in great demand by pupils and teachers. It will be published at 9d., and will contain fifty-three maps.

To children with a scientific turn of mind the *New Games and Amusements*, by Meredith Nugent, will be a great source of pleasure. The amusements are directed into scientific channels, and all the experiments, although simple, are instructive. It is wonderful what the author contrives to do with simple things.

A portfolio that arrests attention is *The Complete Course of Free-arm and Industrial Drawing*, a series of charts for the blackboard, in coloured crayons, on a dark ground, with full descriptive and directive letter-press, for schools of all grades, from the kindergarten to the school of art.

An ingenious machine for sharpening lead pencils is shown by this firm. It is simple and effective. By turning a handle 80 pencils can be tapered to needle points in 15 minutes. It would be received in large infant schools with a sigh of relief. Blackboard rulers, set squares, T squares, compasses, and combinations of protractor, set square, and ruler are here, and all the aids necessary to the teacher. A combination lesson frame with beads, blackboard, colour and form chart, showing the primary and secondary colours, with the elementary forms, on one stand is a very compact piece of apparatus. Aids for teaching the metric system are here in abundance, the measure of capacity being specially noticeable.

An account of the exhibit of this firm would not be complete without referring to the fine series of *Nature-study Readers*, by Troeger. They are well-bound in attractive covers, finely-illustrated, and printed in excellent type.

### H. B. SILBERBERG AND CO.

(443 Bourke-street, Melbourne.)

The glittering glassware of H. B. Silberberg and Co.'s display of scientific apparatus was a source of great attraction. The achievements in the manufacture of glass called for admiring comments, while an exhibit of glass "wool," spun by electricity from pure glass, aroused curiosity and wonder. Both teachers and public were interested in the simple experiments shown at this exhibit. A Cartesian diver of satanic aspect caused much amusement, and a fat extractor, showing how grease can be extracted from any substance for chemical investigation, received a good deal of attention. A toy boat was set in motion by placing a small piece of camphor in such a position in the boat that it just touched the water, and, in this, teachers saw another opportunity of showing the force of surface tension.



There was a splendid display of balances from the well-known cheap varieties up to an assay balance by Ainsworth, turning to <sup>13000</sup> part of a grain. Beakers, flasks, retorts, burettes, spirit lamps, and gas generators made a brave show on the lofty staging in the rear, while working models of pumps, steam-engines, and hydraulic presses claimed attention at the front.

Thick, clear glass troughs, so useful for class demonstrations, wire-gauge squares with asbestos centres, great stands of U, T, and Y tubes were regarded with envious eyes by many teachers, who saw the possibilities before them, if only a small supply of the treasures displayed so lavishly on the shelves could be transferred to the science benches in their schools.

On the whole, this enterprising firm is to be congratulated upon its varied and educative display.

#### W. WATSON AND SONS.

(78 Swanston-street, Melbourne.)

Messrs. W. Watson and Sons, of No. 78 Swanston-street, Melbourne, exhibited a very fine selection of scientific instruments. The exhibit, as a whole, was of educational value, and the various instruments which formed the exhibit were of particular interest to teachers and others connected with school life.

The exhibit included optical lanterns, microscopes, drawing instruments, cameras, and also a fine astronomical telescope. A special display was also made of pocket magnifiers, and apparatus used for collecting natural-history specimens.

#### WHITCOMBE AND TOMBS LIMITED.

(Little Collins-street, Melbourne.)

This firm's exhibit was shown on a stand which was tastefully arranged, and decorated in harmony with the general scheme of the Exhibition.

In addition to their Victorian publications, which are so well-known to all teachers, and have proved such valuable helps to them, a number of recent publications by their New Zealand houses were shown.

Amongst these were two series which should be useful to Victorian teachers, viz.:—*Word and Sentence Building*, in three books, for Classes I., II., III., and the *Southern Cross Geographical Readers*, also in three books, for Classes III., IV., and V. and VI. combined.

Amongst their general publications were two very finely illustrated books, *Animals of New Zealand* and *Plants of New Zealand*. These are splendid specimens of the printer's art, and highly creditable to the firm.

A most interesting feature of the exhibit was the case containing the various stages of a three-colour print. The illustrations shown were some dainty little pictures painted by Miss Rix for the *Second Austral Primer*, and the whole process—from the artist's sketch to the finished coloured plate—was shown and explained.

#### “THE AUSTRALIAN YOUTH.”

The ever-growing demand that Australia shall supply all things for the Australians has resulted in the establishment of this little magazine. Many excellent children's magazines, printed in England, are in circulation among Australian children, and are deservedly popular, but there is no reason why our children should not be catered for, in this direction, by magazines written and printed locally.

*The Australian Youth* is making an attempt, with fair success, to supply the want of an Australian paper for children. To successfully compete against those already in demand, whose large and well-established circulation allows of much outlay on the reading matter and illustrations, is no

small undertaking; but, in *The Australian Youth*, the germ of success is present, and it needs only the patronage of patriotic Australians to insure its development to a stage even beyond that reached by the imported magazines.

#### "THE AGE."

The proprietors of *The Age* are to be commended for their very valuable and most instructive exhibit. Their process of newspaper printing was shown in its every detail. Each stage of the process was shown in its proper order:—

Linotype brass matrices, from which the lines of type are cast, each matrix having a letter indented in it; sections of pages of *The Age*, *The Leader*, and *Every Saturday*, set by the linotype machine; moulds or impressions of pages of type, after plate is cast off it; metal plate cast from mould from which the paper is printed. About two hundred of these plates are cast for a Saturday's issue of *The Age*, the metal used being a mixture of lead, antimony, and tin. Samples of paper on which *The Age* is printed were also shown. The bulk of the paper comes from Canada, and is manufactured from wood pulp, with the addition of chemicals. Over 80 tons of paper are used weekly, and this, if spread out in a continuous length the width of a copy of *The Age* opened out would reach a distance of over nine hundred miles.

The process used in preparing the illustrations was demonstrated by the exhibit of line etching on zinc, also showing the original line drawings as follows:—The original line drawings; the line negatives from the original drawings; the line etching on the zinc; the proof print from the zinc block.

The process of photo-engraving was demonstrated by the following exhibits:—The original photograph; the half-tone negative from this original photograph; the print on the zinc; the print ready to etch; the etched half-tone block ready to proof; the proof print from the block.

The subjects used in demonstrations represented some views of bush scenery from Warburton and Gippsland, bird subjects, and some figure subjects, &c.

Some photographs were shown of the huge printing presses used in printing *The Age*. These machines are capable of printing 72,000 copies of *The Age* an hour.

#### THE STEREOSCOPE IN OUR SCHOOLROOM.

(Underwood and Underwood, New York. Australasian representative, A. K. Zimmerman, 117 Collins-street, Melbourne.)

Among the exhibits well worthy of notice was that of Messrs. Underwood and Underwood. Here were displayed complete series of stereoscopic views portraying every phase of nature-study, industries and productions, children in many lands, and history.

One of our noted professors recently remarked that we acquire over 90 per cent. of our knowledge through the eye. If this is so, the Underwood system of visual instruction should certainly be used in every school throughout the world. In place of reading or talking about the many physical features of a country, teachers can bring their classes face to face with mountains, valleys, rivers, deserts, glaciers, volcanoes, and many other striking features of their country as well as of other lands. In this way, also, can be studied the growing and manufacture of cotton, hemp, flax, sugar, tobacco, rubber, fruits, nuts, &c., and the conditions of the mining, fishing, and other industries. One can gain more useful knowledge in reviewing several series of stereographs in half-an-hour than could be acquired by many hours of reading.

The stereoscopic photograph is very different from a single lens photograph, inasmuch as it gives not only height and width, but also the third dimension, depth (or perspective), thus securing a highly valued impression of reality.

## BALANCE-SHEET.

*Receipts.*

5th September to 22nd September, 1906—	£	s.	d.
To Takings at Turnstiles ... ..	5,137	11	5
„ Amount received for Rent from Publishers, &c. ... ..	225	2	0
„ Amount received from Advertisers in “Souvenir Book” ... ..	37	10	0
„ Amount received from “Merry-go-round” ... ..	35	10	7
„ Amount received from Refunds ... ..	4	0	0
„ Amount received from “Souvenir Book” ... ..	90	11	0
„ Amount received from Programmes ... ..	9	17	0
„ Amount received from Excursions ... ..	20	12	8
„ Amount advanced by Education Department ... ..	100	0	0
„ Amount received from Grand Stand ... ..	47	17	3
„ Amount received from Sale of Glass Cases ... ..	17	0	0

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 £5,725 11 11
*Expenditure.*

September, 1906—	£	s.	d.
By Contractor (J. Moore) ... ..	1,368	0	0
„ Advertising ... ..	171	13	0
„ Printing ... ..	308	11	0
„ Rubber Stamps ... ..	6	8	0
„ Badges ... ..	20	14	10
„ Bill-posting ... ..	9	0	0
„ Sign-writing ... ..	3	17	6
„ Glass Cases—hire and purchase ... ..	70	17	3
„ Music—Band, &c. ... ..	77	15	0
„ Insurance ... ..	6	15	0
„ Stationery, &c. ... ..	55	2	3
„ Ironmongery ... ..	2	19	3
„ Films (moving pictures) ... ..	60	0	0
„ Fire Brigade ... ..	16	9	0
„ Lighting—Gas ... ..	£167	19	3
„ Electric Light ... ..	154	14	8
„ Fireworks ... ..	322	13	11
„ Flags ... ..	80	0	0
„ Hire ... ..	46	4	10
„ Repairs ... ..	28	17	4
„ Cookery Centre—Fittings, &c. ... ..	21	16	0
„ Freight ... ..	27	6	3
„ Sanitary Work ... ..	116	6	9
„ Entertainments ... ..	10	0	0
„ Medical Attendance ... ..	41	6	8
„ Wages ... ..	3	3	0
„ Athletic Association ... ..	480	1	6
„ Rent of Exhibition ... ..	392	18	3
„ Refunds—Education Department ... ..	380	0	0
„ Lost Property ... ..	£100	0	0
	1	4	6
	101	4	6
Carried forward ... ..	4,230	1	1



*Expenditure—continued.*

					£	s.	d.
Brought forward					4,230	1	1
By Secretary's Expenses	...	...	...	...	66	11	10
„ Caterer	...	...	...	...	12	15	9
„ Supervisors' Expenses	...	...	...	...	204	12	11
„ District Expenses	...	...	...	...	45	6	10
„ Rent of Halls	...	...	...	...	19	10	0
„ Sundries	...	...	...	...	58	12	6
„ Petty Cash	...	...	...	...	8	0	0
„ Auditors	...	...	...	...	4	4	0
9th July, 1907—							
To Bank Balance	...	...	...	£1,112	17	3	
Less outstanding cheques					37	9	3
„ Balance	...	...	...	...	1,075	8	0
					£5,725	11	11

Audited and found correct, 9th July, 1907.

(Signed) JOHN A. BAKER, Lic. Auditor.

(Signed) W. J. LORMER, Auditor.

(Signed) JNO. BYATT, Treasurer.

(Signed) GEO. H. CARTER, Org. Sec.

NOTE.—The credit balance is to form the nucleus for a fund for decorating schools.









