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MATHEMATICS FOR THE STUDENT APPRENTICE*

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IN *Industrial Arts Magazine*.

WHEN a Ford Motor Company foreman was asked to state the weakest point he had found in the education and training of the Carlisle Indian boys who were enrolled in the apprentice school of the Ford automobile factory he said, "Mathematics. Their manual dexterity and industry are excellent, but they are very weak in mathematics. They experience great difficulty in comprehending the rule, and are slow and uncertain in their calculations."

The Indian does not possess a mathematical mind. Reasoning in the abstract is very difficult for him. His teachers have not, as a rule, been able to interest him in arithmetic. It is believed that much of the difficulty lies in the method of instruction employed. The following article should, therefore, prove of special interest to teachers and instructors in Indian schools.—EDITOR.



IN these days of rapid industrial progress, shop mathematics assumes a more and more important place in the training of the future mechanic. New types of machine tools, the greater complexity of present day work, and the increased accuracy which is required by the modern system of interchangeable manufacturing, all demand a knowledge of arithmetic and mathematics far beyond that required of the mechanic of fifty or even twenty years ago. As a

direct result of the conditions enumerated above, the old-time shop man, with his large fund of practical knowledge, and his meager supply of technical information, is rapidly succumbing to the inexorable law of the survival of the fittest. To meet present day requirements, therefore, the training of the apprentice should include a generous share of mathematical instruction.

With the need of a thorough course in shop mathematics for the apprentice admitted, the question arises at once, What should be included under the heading, and how should it be

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taught? This article is an attempt to answer these questions, and the writers hope that the suggestions herein made may be found useful, not only by the industrial teachers who are now engaged in the work of educating the recruits of our vast industrial army, but also to the mechanic who aspires to take up the teaching of industrial subjects as a vocation. The discussion is based on the experience which we have gained teaching shop mathematics for several years, to classes of young men who are indentured in the following trades: machinist, toolmaker, patternmaker, boiler-maker, templet-maker, blacksmith, foundryman, and draftsman.

In order to show just why we pursue the methods which we outline below, it would be well to say a few words about the personnel of our classes. A typical apprentice class contains from fifteen to twenty pupils, whose ages range from 16 to 24 years. Their previous education varies as much as their ages. To complicate matters the different members of the class are usually not indentured in the same trade, but may be apprenticed in any of the above enumerated callings. Furthermore, the newcomer may find himself seated beside a classmate who has almost finished his apprenticeship. Then, too, the exigencies of shop conditions frequently require that a boy who belongs to one class be changed to a class meeting on a different day. With these rather complicated conditions in mind, it becomes apparent that class instruction in mathematics is out of the question. Let us then study the procedure which is followed when a new student is enrolled.

The applicant is first given a simple entrance examination, which is designed to test his knowledge of arith-

metic, up to and including fractions. The results which we have obtained from these tests prove that most of the boys who enter our classes require a thorough review in elementary arithmetic. This condition is due no doubt to the fact that the new apprentice has been away from school for a space of time which varies from a few months to several years. He has had little or no chance to make use of the arithmetic which he previously learned, and hence has forgotten most of it. The first thing, then, is to arouse new interest in the subject by choosing the problems, not from textbooks found in the graded schools, but from the everyday requirements of the shop. The outcome of the above mentioned test determines whether the boy can be advanced, or if further review is necessary. If the newcomer shows that he is conversant with the elementary work, he is at once advanced to the more technical part of the course. We have found, however, that even high school students cannot be allowed to omit too much of the first part of the course, for the reason that shop mathematics, like technical English, is a branch of its own, and needs careful study.

It may be well to say a few words here about the method of instruction which is to be followed with a given class. The instructor will quickly discover that a plan which works out admirably with one class will be ill adapted when applied to another. If a given class can be divided into groups, the members of which are all engaged upon the same lesson, the instructional work will be much simplified. But this cannot be done in many cases, and individual instruction must be resorted to. For this reason the course in shop mathematics

is divided into lessons which are assigned individually as each student progresses.

The advantages of this last system are:

(a) Each student is an independent unit, and for that reason the work which is assigned to him may be totally different from that of any other member of the class.

(b) The pupil's progress is suited to his personal ability.

(c) Absence from class does not upset the lesson plan; when the pupil returns, he starts from the point where he left off.

The disadvantages are:

(a) The individual lesson plan takes away the incentive of competing with others who are engaged upon the same task.

(b) A pupil may hand in creditable work, week after week, and yet not fully understand the principles which are involved in the subject matter which he has covered.

With these objections in mind, corrective measures must be applied to remove them. To furnish somewhat of the competitive spirit, each lesson has been given a time allotment within which a slow, average, or rapid pupil can finish the work. A chart upon which the time allotment for each lesson is shown is posted in the classroom, and the pupils, when they have finished a lesson, are sent to compare their time with that of the chart. It has been found that most pupils readily fall in with the idea, and strive to finish their lessons in record time. At the start, the time allotment was arbitrarily set, and then corrected later on, when definite information had been obtained from the actual working time required by the different grades of pupils.

To overcome the second objection,

frequent quizzes in the form of lessons on miscellaneous problems are given. These tests must be designed in such a manner that they will disclose the weak points in the pupil's grasp of any part of the subject, and if the results of the examination warrant it, the student is required to review that portion of the course in which his knowledge has been found deficient. The review lessons, in all cases, are supplementary to the regular work, so that the student has new problems to solve, although the principles which are involved are the same as in the regular lessons which have been previously taken.

Many pupils find it an incentive to know the nature and the quantity of the work which is ahead of them. In order to satisfy this commendable curiosity, the beforementioned chart was amplified so that it contains, besides the time allotment for each lesson, the following information:

(a) The number of the lessons.

(b) The special subject to which each lesson is devoted.

(c) A condensed summary of the principles which are involved in each lesson.

Besides the foregoing information, the chart contains a number of rules, formulae, and constants, which are used throughout the course, and to which the student can refer whenever occasion arises. The habit thus formed by the student who looks up his own information, instead of asking the instructor for it, is of great value in the shop where charts and tables must frequently be referred to, when certain machine operations are performed. To still further impress the pupil with the value of information which one has personally collected, each member of the class is requir-

ed to furnish himself with a note book in which useful data, formulae, and the like must be copied as he advances.

A word of explanation as to the lessons which are used in our classes may now be in order. Numerous textbooks can be found in the market, under the name of "Shop Arithmetic," "Shop Mathematics," "Industrial Mathematics," etc., but not all of them are available for use in apprentice classes. Some of these books contain admirable subject matter, but nearly all of them are open to the objection that they are arranged primarily for the machinist. It is true, much of the elementary work in arithmetic which these books contain can be profitably studied by boys who are indentured in any trade. Each trade, however, has distinctive problems, and it is natural that the apprentice should evince the most interest in those problems which are applicable to the trade which he is learning. To satisfy the wants of the pupil, therefore, it is necessary for the teacher to write up many of the lessons. In order to devise the proper kind of problems, a thorough understanding of the requirements of the trade for which the lesson is designed is of course presupposed. If the teacher has no practical experience in the given trade himself, the suggestions of an able journeyman may be profitably followed. Visits to the shops and talks with foremen often result in information from which valuable data for lessons can be obtained. Trade catalogues form another source from which many hints can be gathered upon which to base a lesson. Thus, many problems on pulley and gear speeds can be worked up from information obtained from machine tool catalogues. Rules on the reading of

micrometers or vernier calipers, notes on the calculation of gear tooth sizes, the kind of gear cutters to be used, the shrinkage allowance to be made, and many other helpful facts can be obtained from the same source. We have investigated many textbooks, and call attention to the following list of books which we think are worth commending.

Shop Arithmetic, Norris and Smith, McGraw-Hill Book Co.

Advanced Shop Mathematics, Smith and Craig, McGraw-Hill Book Co.

Practical Mathematics, C. I. Palmer, McGraw-Hill Book Co.

Shop Mathematics, E. E. Holton, The Taylor-Holden Co.

Machine Shop Arithmetic, Colvin & Cheney, The N. W. Henley Pub. Co.

Industrial Arithmetic, White and Colgrove, Webb Pub. Co.

Machinery's Jigg Sheets, The Industrial Press.

Machinery's Reference Books, Nos. 18, 19, 52, 54, and 55, The Industrial Press.

Industrial Mathematics, H. W. Marsh, John Wiley & Sons.

Vocational Mathematics, W. H. Dooley, D. C. Heath & Co.

After several years of experimentation, however, we have developed a series of lessons in mimeographed form, which we are now using in our classes. In these lessons we have embodied some of the things we deem helpful to the apprentice, and which we have not found in any shop arithmetic textbook. For instance; we have included a lesson on trade discounts in our course in order to prepare our apprentices to check up bills for machine tools or shop appliances which they may be called upon to install. Of course, the auditing department usually takes care of the checking up of bills, but in many small shops the foreman or superintendent is held responsible for all shop accounts. We have also devised numerous lessons for patternmakers, toolmakers, black-

smiths, boiler-makers, templet-makers, draftsmen, foundrymen, etc., which we were not able to find in any textbook. Some of the lessons which we have prepared contain explanatory matter and examples, while others consist of problems only.

The instructor who attempts to use the individual lesson sheet plan will find it necessary, almost from the start, to have all the lessons for a given course in readiness for use. The proper kind of lesson in shop mathematics cannot be written up on the spur of a moment. Much time and thought has to be put upon each lesson, and the work can be carried on successfully only when a definite plan is followed. To have the classwork run smoothly, therefore, write up the lessons according to a well developed outline, and next have the lessons written up well in advance of the pupils. A few good auxiliary textbooks will be found very useful for assigning extra problems and for reference work.

In the arrangement of our lessons, we were very careful to avoid making the lessons so lengthy as to be tiresome. A short lesson, which contains the right kind of information, emphasizes a principle fully as much as a long, tedious task. The object of each lesson must be to impart a given amount of information. After the boy's attention has been called to this information, he must be shown how to apply it to his work, and then receive enough drill to fix the facts in his memory. This can readily be done by including similar problems in succeeding lessons. In this way the information is brought before his mind again and again, and yet the repetition does not become tedious.

We have also refrained from plac-

ing too great an emphasis on the memorizing of definitions. Many persons know how to solve a problem involving subtraction, and yet are totally ignorant of the meaning of the terms minuend, subtrahend, etc., and this ignorance in no wise detracts from their ability to work the problem correctly. Of course there are some students who wish to be fully informed as to these terms but this information should not be over-emphasized. If a pupil has been shown the method of working a problem and is found able to apply the proper rules and thus obtain an intelligent solution, the instructor can feel satisfied that the boy is really getting something worth while. It must be understood, however, that we do not advocate the omission of all definitions. The teacher must use good judgment in deciding which definitions to retain and which to cast out. The contention has been made that it is folly to teach apprentices how to find the least common denominator, because the practical man has no use for such knowledge. We believe that this is rather an extreme view to take, and hold that the mathematical training of the apprentice should not be limited to a few rule of thumb methods, but should be as broad and as thorough as possible, even though the practical side receives special emphasis.

In choosing problems for our course, we were also careful to avoid those having no other function than to keep the pupil busy. There is so much work to be accomplished that mere busy work has no place in the arithmetic which is to be taught to our future mechanics. It is equally necessary, however, that care be exercised in choosing such problems as

the student may reasonably be expected to meet in his work. Thus the problem: find 7-16 of 8 17-325, though it may furnish excellent practice in multiplication, has absolutely no practical value, and should therefore be avoided. Problems which require a reversed method of attack for the solution should also be avoided, unless they are found to arise in practical work. For instance, an example which requires the student to determine the number of bolts which can be bought for \$1.50, when the price of one bolt is $2\frac{3}{4}c$, is impractical, because such a case would not arise in the ordinary way of buying goods, while a problem in which the student must calculate how many bolts, each of which requires $5\frac{3}{16}$ inches of stock, can be cut from a bar eight feet long, would be thoroughly practical, for such calculations must be made, in many instances, before the stock for a certain job can be ordered.

The instructor will find it advantageous to have numerous models and mechanical aids to assist the class in visualizing mathematical work. We have found one-inch boards of various lengths and widths, scribed off into one-inch cubes, very helpful in the explanation of problems involving areas and volumes. A piece of tin cut into an eight by eight square, and another piece of the same tin cut into an eight-inch circle, may be separately weighed on a suitable scale, in order to show the pupil that the area of a circle is equal to about $\frac{3}{4}$ of the area of the square with sides equal in length to the diameter of the circle. We also make use of several wooden discs, of different diameters, each of which is accompanied by a strip of paper equal in length to its respective circumference. On these circumference strips,

the diameter is laid off (see Fig. 1) so that the pupil can plainly see how the value of "pi" was originally obtained, and what that value is. The same discs can be used to form miniature belt transmission systems where-with to demonstrate pulley speed and speed ratio problems. Cutting speeds, surface speeds, rim speeds, etc., can be made real to the student, by using a disc to represent a piece of lathe work for which the cutting speed is to be figured out; or the disc may be used to represent the emery wheel for which the surface speed is wanted; or fly wheel or pulley, for which the rim speed is to be calculated. To illustrate, take a problem like the following: How many revolutions must an 8-in shaft make in a lathe to have a cutting speed of 30 feet per minute? To assist the student in picturing this problem, the model shown by Fig. 2 is made use of. A tape line or a strip of drawing paper can be fastened to hook H, and wound once around the disc D. Then by revolving the disc in the reverse direction, the tapeline or paper strip will unwind, and the student can readily see that the length of the chip, for one revolution, must be equal to the circumference of the work. This circumference must of course be expressed in feet. It may be well to explain to the pupil that great accuracy is not required in problems of this kind, and that approximate answers are sufficiently close for practical work. For this reason the value of "pi" may be taken as 3, and hence, the chip in the above case, for one revolution, would be

$$\frac{8 \times 3}{12} = 2 \text{ feet in length.}$$

The student usually has no trouble in giving the correct answer to the question: If a chip two feet in length is obtained

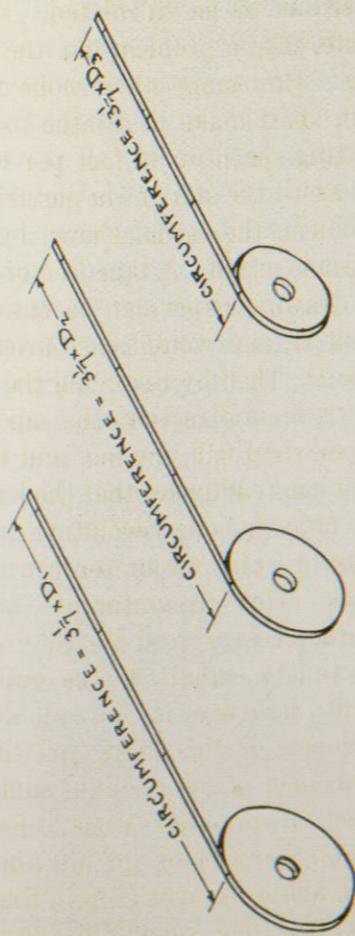


Fig. 1.

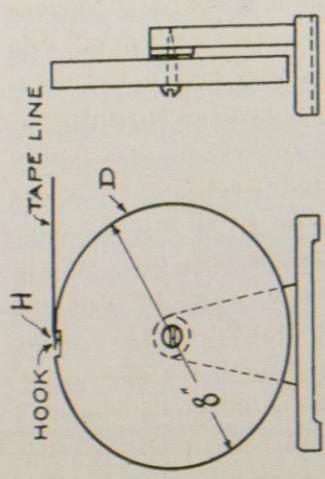


Fig. 2.

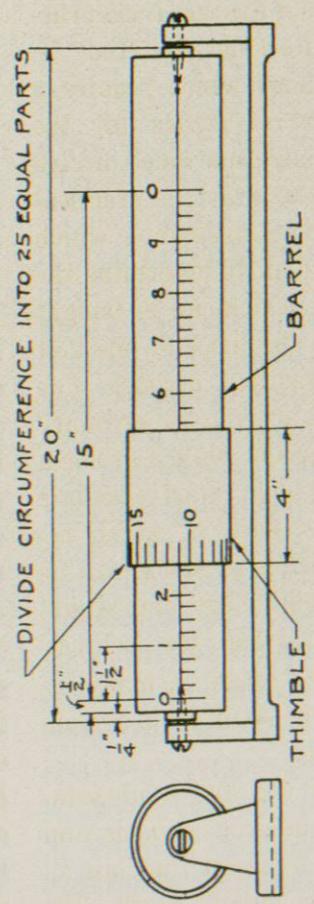


Fig. 3.

when the work makes one revolution, how many revolutions must it make to cut a chip 6 feet long? The student thus reasons out just what arithmetical operations he must make use of in the solution of this problem, and the method becomes more real to him than if he had worked from a formula only. After the demonstration with the last mentioned piece of apparatus, the formula

$$n = \frac{12C}{3d} = \frac{4C}{d}$$

can be explained, and the pupil should be allowed to use it for similar problems. For the pattern-maker, the revolutions required by 12-in circular saw to obtain a certain cutting speed, say 900 feet per minute, may be substituted in the above problem.

For teaching the reading of the micrometer, it is well to use an inch-micrometer, and have the student measure a definite piece, the dimensions of which are known to the instructor. We have a measuring piece of machine steel, about $4\frac{3}{8}$ inches long, on which seven steps, each $\frac{5}{8}$ inches in length, are turned up. The steps have been turned to the following dimensions: .409 in., .510 in., .594 in., .647 in., .754 in., .812 in. and .943 in. The pupil measures this piece and writes down the diameters so that the instructor can check the readings when the lesson is finished. In some schools the cost of the micrometer may act as a deterrent to the adoption of the plan just outlined, and the teacher must devise some other means to obtain results. A very credible substitute may be made with a large mailing tube (one which is about three inches in diameter answers nicely) which fits snugly over a wooden cylinder, as per Fig. 3. The mailing tube takes the place of the thimble, and the wooden cylinder rep-

resents the barrel of the micrometer. Both tube and cylinder should receive several coats of orange shellac, and the graduations can then be marked on with black shellac. The tube can be revolved and set at will on the cylinder, and thus any setting on the real micrometer can be duplicated. A further advantage of this improvised piece of apparatus is, that its size will allow it to be used for class demonstrations, which can not be done with the ordinary micrometer.

A few words on the question of checking and grading lessons may be of assistance. When a pupil has finished a lesson, it is at once checked up. If any of the problems are worked incorrectly, they have to be worked over. This means that when the lesson is finally handed in, all the work is correct, and that if the lessons were graded in the ordinary way, a mark of 100 would have to be given. This would obviously be unfair, because some finished lessons are much neater than others. Furthermore, one pupil may finish his lessons in one hour, while another would spend five hours on the same task. We have therefore devised the following scheme. The minimum passing grade is 70 per cent. If a lower mark than this is obtained, another lesson with similar problems has to be worked. To take cognizance of the time element as well as neatness, a normal grade has been assigned to each of the three classifications which are named on the time allotment chart. Thus, a pupil who does neat work and finishes any lesson in the time set for the rapid class, gets a mark of 95 per cent. The same grade of work finished in average time 85 per cent, and if finished within the slow time limit 75 per cent. The following table shows how this

normal grade is increased or decreased by greater or less speed or neatness:

	Rapid	Average	Slow
Very neat.....	97%	87%	77%
Neat.....	95%	85%	75%
Fairly neat.....	93%	83%	73%
Passably neat.....	90%	80%	70%

If a lesson is finished 10 per cent to 25 per cent ahead of time, add 3 per cent to the above ratings.

If 10 per cent to 25 per cent more than the allotment is required to finish a given lesson, deduct 3 per cent from the above ratings.

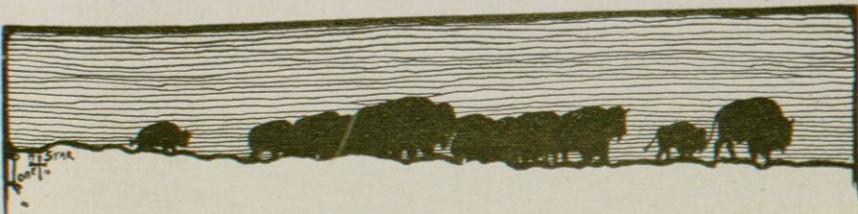
From the above table it is evident that when a pupil finishes his lesson in less than the average time, and does neat work, he gets a grade of 87 plus 3, 90 per cent, which is the same as that obtained by a pupil who does passably neat but rapid work. The method of grading outlined above need not of course be strictly followed. The table was devised merely as a basis, so that the grading becomes more a matter of calculation than of chance.

In order to expedite the checking up of the lessons, an answer book has been arranged which contains the answers to all the problems in the course. A few pertinent questions have been written beneath the answers belonging to each lesson. When the instructor is checking up a paper which a pupil has just

handed in, these questions can be put to the student, and it becomes apparent at once whether the principles which are embodied in the lesson have been acquired and understood. The instructor is thus saved the mental strain involved in recalling the proper question when he checks up a lesson. This will be found to be a greater aid than one would imagine at first sight, because the lessons which are completed in a single half day range from the elementary to the most advanced.

To summarize, mathematics for the apprentice is of such vital importance that it deserves the best efforts of the teacher. The first step in successfully teaching the subject is to make the pupil feel that shop mathematics is one of the elements upon which his success as a mechanic depends. To further arouse interest, the lessons must be vitalized with practical rather than abstract problems. Every effort must be made to assist the student in visualizing problems which he does not understand, so that the underlying principles are brought within his grasp.

When we have succeeded in making the future mechanic see that the solution of a shop problem requires the application of common sense, rather than an effort to unravel a mystery, then we can truthfully say that we are pursuing the right course, and that we are approaching the goal for which we are striving.



SUBJECTS FOR LANGUAGE LESSONS

SECOND AND THIRD GRADES

By JEAN O. BARND,

Teacher, Maricopa Day School.

MR. BARND, instead of attempting to teach Indian children English out of a book, makes up his lessons from the everyday activities and objects with which his pupils are familiar. He puts into English words and sentences the names of things and of facts in which the children are interested. To teach after this fashion means more work for the teacher, but then such teaching is worth more. It gets results. Teachers who experience difficulty in getting Indian children to talk would do well to study Mr. Barnd's method.—

EDITOR.



WITH non-English speaking pupils *confidence* is essential to make progress. He progresses as his confidence develops. A lack of confidence, a feeling of misgiving or uncertainty will cause hesitation and embarrassment; these result in timidity and usually an objection to trying to recite; but with confidence comes the desire to do his part.

Confidence must be cultivated from the day the child enters school. The teacher should see that the child's confidence is not disconcerted by severe criticism, by ridicule, scoffing or irony. Often a fear that older pupils will laugh at him will make it difficult for a younger child to gain the necessary confidence before he is willing to repeat names or objects; or say his own name.

I have found that nothing will kindle confidence in the younger pupils like the use of subjects with which they already have some knowledge. At first he is only able to think in his native language; but as his familiarity with English increases objects with which he has knowledge form an unlimited source for discussion and essay writing in language work for the Second and Third Grades.

Birds, for example have been used throughout an entire term, one day each week for discussion and one day for essay writing. Drawing pictures of the bird under discussion was part of the drawing lessons for each week; so at the end of the week each pupil had a general knowledge of the bird and could discuss its individual characteristics. He also has an essay in his composition book and a picture of the bird.

Other subjects; as *wood, animals, seeds, bugs and worms, clothes, food, houses, games, articles used in school, school garden, iron, glass, farm implements, farming, sewing, water, cooking, cities*. Each of these may be divided into many subjects with each of which the pupil has some knowledge. This knowledge will give him confidence to tell what he knows; especially if he can be persuaded that he is telling something the teacher does not know; for it is the delight of every pupil from the beginner to the university graduate to be able to tell his instructor something.

Following is an example of use made by the Second and Third Grades of the subject, *the school garden*.

The method used in presenting the lesson is given in the lesson *our school garden*: which was the review lesson for the term. The other essays are the result of each language lesson.

The sentences given by the pupils in reply to the questions are written on the board. After the discussion is completed the sentences are erased, except one or two of the most important words are left for reference by the pupil when he writes his essay.

Teacher: Did the pupils plow the garden?

Pupil: The garden was plowed by a *man*.

T: What did the pupils do?

P: The rows were *not straight* and we took our *hoes* and made them straight and the ground good.

T: After the rows were straight and the ground ready, what did you do?

P: We *irrigated* the garden.

T: Could we plant the seeds the day we irrigated?

P: *Three days* after we irrigated it was *dry* enough to plant.

T: There are fourteen pupils in your two classes and we planted fourteen vegetables in the garden. You may each tell the name of something we planted.

The following names were given. Each pupil endeavoring to name something before some other pupil said what he wanted to name.

Lettuce, peas, carrots, corn, squash, spinach, onions, peppers, radishes, melons, beets, potatoes, beans and cucumbers.

T: Jasper may tell something about the lettuce.

Jasper: The *lettuce* was *good* and we ate it every day.

T: William may tell us something about the peas.

William: When the peas were ready the *boys* *picked* them in the morning and when they brought the peas in their pans the *girls* *shelled* them and *Mrs. B*— *cooked* them for our dinners.

T: What can you tell about the carrots, Elizabeth?

Elizabeth: The *carrots* grew *good* and we had them *many* times.

T: Who can tell something else about the carrots?

Pupil: We eat carrots like we eat *apples* and do *not cook* them. We each had *two carrots* with our dinners today. We all *like* carrots.

T: What can Gladys tell us about the beets.

Gladys: The *beets* grew good and I think we will have beets to take *home* with us *tomorrow*.

T: Did the onions grow, Achsa?

Achsa: We planted *onions* and they grew good and we had them *many* times.

T: James may tell us what the beans were like we planted.

James: We had *two kinds* of beans. One kind was *yellow* and the other green.

T: Have you had any potatoes to eat?

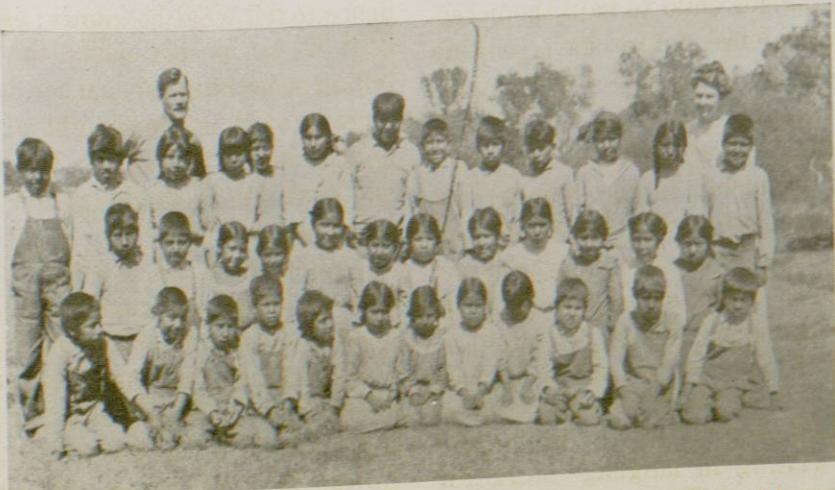
George: The *potatoes* are *growing* and are *not ready* to eat.

T: What did we do with the spinach, David?

David: We cooked the *tops* of the *spinach* and ate them.

T: Tell us about the peppers, Agnes.

Agnes: The *peppers* did *not have* any peppers on them; but the *tops* grew.



TEACHERS AND PUPILS—MARICOPA DAY SCHOOL, LAVERN, ARIZONA

T: Did the canteloupe and cucumbers grow, Maidie?

Maidie: The *canteloupe* and *cucumbers* did *not* grow.

T: Salome, may tell about the corn.

Salome: The *corn* is growing nice and *big* and I think it will be ready after school is out this summer.

T: Is there anything anyone else can tell about the garden?

Bertha: The *squash* are growing good and *big* and the *radishes* are very *good*. We had them *many* times at school and took some *home*.

Eleanor: We had the *best garden* we ever had.

PREPARING THE GROUND FOR THE SCHOOL GARDEN

The ground was covered with weeds and we all took hoes and rakes and cut them and raked them up in piles. Then we burned them.

The school garden was plowed by one of the Indian men. First he plowed like he plows when he is plowing for wheat. Then he made rows. The rows are long and he did not get them all straight.

We used hoes and hoed the rows straight. The big boys hoed and the girls and little boys picked up the weeds and roots the big boys hoed out.

We worked two days cutting weeds and three days hoeing the rows and making the ground smooth.

We carried a pile of chicken manure in cans and in the wheelbarrow and put it on the rows where we planted the seeds. It will make the seeds grow better.

The ground was dry and hard and it was hard work. We worked in the evening after school from three o'clock to four o'clock.

WILLIAM SMITH,
Age 10, Third Grade.

IRRIGATION

At Maricopa it does not rain very much and we make the water run on the fields from the river. We call this irrigation.

We get the water from the Salt River. The Maricopa Indians have a dam in the river east of Maricopa.

The dam is made of dirt and stones and arrow weeds. When the river gets high it makes a hole in our dam and the men haul

arrow weeds and logs and dirt and fix the hole.

The dam makes the water go into a ditch that carries the water to our farms. When the ditch gets to the reservation it is made into many ditches and they run to all the fields.

When the ditches gets full of dirt the men take shovels and all work together and throw the dirt out of the ditch. When they are to work in the ditches the ditch Captain stands on his house and calls to them and tells all the men where they are to go to work.

The ditch Captain turns the water out of the Indian ditch and it runs into the river again when the men work on the ditches.

Another name for ditch is canal.

For the school garden we have a big ditch called the School Ditch. We run water from the big ditch in a small ditch to the garden. We put a big cloth we call a tappoon in the ditch to make the water go from the big ditch to the little one.

From the little ditch it is turned into ditches between the rows. When the ditch between the rows is full we shut it off with dirt and turn it into another ditch between the next two rows. When the rows are all full of water we take the tappoon out of the big ditch and the water does not run to the garden any more.

Before we planted the seeds we irrigated the garden and then planted the seeds right where the water came up on the rows. When we plant the seeds first and irrigate the garden after we irrigate, the ground will get hard and the seeds cannot come up. This ground is like the people use to make adobe bricks and is called adobe.

JASPER DONAHUE,
Age 9, Second Grade.

LETTUCE

The lettuce came up first. We planted two kinds of lettuce. One kind did not make heads and the other kind made heads like cabbage.

It came up very thick so we thinned them out. The lettuce we pulled up to make room for the other lettuce we washed and divided with all the children and put salt on it and ate it with our dinners.

This lettuce was not as good as the head lettuce that grew ready later. We cut the

head lettuce into pieces and ate them. The head lettuce was not hard to bite and was almost white inside.

We had much head lettuce and took some home to our mothers and fathers and had some almost every day.

AGNES BREAD,
Age 10, Third Grade.

PEAS

We planted peas in November and the chickens found them and ate all. We planted them again the first of December and the chickens ate them. In February we planted two kinds of peas. One kind had big pods and the other had small pods.

When the peas were ready to eat the boys went to the garden and picked them and the girls shelled them. We took the peas from the inside of the pods and Mrs. B—— cooked them for us.

We all have cups to drink out of and we had our peas in the cups. We have spoons and we ate the peas with our spoons when we ate our dinners. The peas are good and we all like to eat them. We had peas three times with our dinners.

There are peas that have flowers on them and do not have peas to eat. We call them sweet peas. Peas raised for hay are cow peas.

Peas grow in pods on the vines and we



GLADYS YARAMATA ELIZABETH SUN

have to pick the pods off the vines and then shell the peas out of the shells.

We planted the peas a little more than an inch apart and did not thin them out like we did the lettuce. All grew where they were planted.

ACHSA COLT,
Age 9, Second Grade.

BEANS

The beans could not be planted in cold weather for they freeze.

We had two kinds of beans. One kind was yellow and the other was green. Beans grow on vines like peas. We did not shell the beans like we did the peas. We broke the beans in pieces.

The green beans did not have strings on them and after the boys picked them the girls broke them into little pieces and washed them and Mrs. B—— cooked them for our dinners. They are very good and we like them.

There are many kinds of beans. The yellow beans had strings on them. We broke the beans in two pieces and pulled the strings off.

One kind of beans is called, "Pole Beans." They are planted around a pole and when they grow they climb up the pole.

The other beans we planted in rows like we planted the peas.

When the beans came up they each had the bean on top that we had planted in the



AGNES BIRD
ELIZABETH CUMAYHIA AGNES BREAD
ASTER JOHNSON

ground and the two leaves came out of the bean.

There is another kind of beans called, "Lima Beans." They are very large. We did not have any Lima beans in our garden but my father bought some at the store.

We cultivated the ground around the beans many times to keep it loose.

My father has a big field of beans he raised for us to eat and he takes some to Phoenix to sell. They are white beans. He does not pick the beans like we do at school. He pulls the vines all up and hauls them in a wagon to a big pile and drives horses round and round on them and the horses tramp out the beans and we pick them up and put them in sacks.

The horses eat the vines.

We have brown beans we call "frijole." I think we call them that because the Mexicans raise that kind and the Mexican name for beans is frijole.

ELIZABETH SUN,
Age 9, Second Grade.
Nine in my class.

CARROTS

We planted carrots in November. It was cold and they did not come up for three weeks.

When they came up there were so many we had to pull some out to make room for the others to grow.

We all like carrots and like to eat them without cooking. We pull them up and cut off the tops and wash them and they are good to eat.

We had two kinds of carrots in our garden. Some were long and the others were not long. They were bigger around. We like both kinds.

We had many carrots and could have carrots when we wanted them.

Carrots are raised by farmers to feed to cows and horses.

Carrots are yellow like an orange.

GEORGE LORING,
Age 9, Third Grade.

ONIONS

We plated onion seeds and onions came up. They grew tall and when ready to eat we pulled many of them and had green onions. The onions we did not pull grew big and round and white.

We like green onions and onions after they grow big. We cleaned them and ate them with our dinners. We put salt on them.

Last year we did not plant seeds. We had onion sets to plant. Onion sets are small onions that grew where seeds were planted very close together. The sets grow faster than seeds and when we did not pull them up for green onions they grew to big onions.

Some of the onions we ate when they were green and some after they were large and did not cook them. Mrs. B— cooked some for us after they were large and they were good.

I think some onions are called Bermuda Onions because they come from a country called Bermuda.

DAVID MCKINLEY,
Age 9, Third Grade.

CORN

We planted corn in our garden early in April. We put five grains in each hill and planted the hills three feet apart. When the corn came up we hoed around the hills and killed all the weeds and made the ground loose around the corn.

There are three kinds of corn, sweet corn, field corn and pop corn.

The field corn is planted in fields and is fed to pigs, horses and cattle when it is hard and dry.

Pop corn is not large like field corn and is popped before we eat it. I like to buy pop corn in Phoenix. We do not raise pop corn on our farm.

Sweet corn is pulled when it is green and is boiled to cook it. We put salt on it and ate it with our dinners.

Corn was raised by Indians before white people came to this country. It is called Indian corn.

Corn plants grow very tall and the ears are on the sides of the stalks. The men cut the corn stalks and stand them up so they will not lay on the ground and get wet. We call these shocks.

My father picks out the best ears each year and saves them to plant. He calls these seed corn. He hangs the ears he keeps up in the house where it is warm all winter. He does not shell it until he is ready to plant it. The Maricopa Indians do not plant much corn. They plant wheat and cotton.

When my mother grinds corn to make corn meal she has a big stone called a mor-

tar. She lays the corn on the mortar and rubs it with another stone.

My mother makes corn bread with corn meal. She can make cakes with the corn meal. We like to eat syrup on the corn bread.

Corn stocks are fed to horses and cows and corn husks are used to make paper. We made a doll with a corn cob.

Many years ago when the first white people came to America it was winter and they did not have much to eat. The Indians that lived near where they got off their ship were kind to them. They showed the Pilgrims how to plant corn. They showed them to put a fish in each hill to make the corn grow good. In November the Pilgrims had a big dinner because they had had such a good harvest. They asked the Indians to come to the dinner. This was the first Thanksgiving Day. Every November we have a Thanksgiving Day, We thank God for the good corn, wheat and cotton.

ELEANOR SUN,
Age 10, Third Grade.

POTATOES

Potatoes are not planted like corn and other plants that have seeds. Potatoes have eyes on their sides and we cut the potatoes in pieces with one eye on every piece. When we planted them we dug a ditch down the row we made before and planted the potatoes in the middle of the row and not on the sides like we planted carrots and lettuce when we made two rows on each row.

When the potatoe plants grew big we hoed the dirt up on the plants.

When the plants had flowers on them we dug down in the ground and found little potatoes.

Potatoes grow in the ground and we had to dig in the ground around the roots to find the potatoes.

Every time we irrigated we hoed the potatoes.

When we cooked the potatoes we washed them and put them in boiling water and when they were not hard we peeled the skins off and cut the potatoes in little pieces and fried them.

In the war some of the soldiers had bread made with potatoes. My bread is made of wheat. Some of my bread is made of corn meal. I think the country where they did not have wheat and corn bread only had potatoes to make the bread.

The potatoes we grow are called Irish potatoes. We buy potatoes we call sweet pota-

toes. We did not grow any sweet potatoes in our garden.

GLADYS YARAMATA,
Age 9, Second Grade.

MELONS

We like to eat watermelons, canteloupe and muskmelons. I think I like to eat watermelon best of all.

The melons did not grow in the school garden.

My father had a big field of watermelons and sold many to the Indians and white people. He took many loads to Phoenix. He made more than two hundred dollars. He said he would plant more melons next year.

We planted the melons in March. We planted twelve seeds in one hill.

The hills are six feet apart.

The vines grow all over the ground and we hunted for the melons. My father can tell when a melon is good by hitting it with his fingers and thumb. I do that and sometimes they are not good.

Some of our watermelons are long and some are round like a ball. I think I like the round ones best.

We planted canteloupes and cucumbers and the frost killed the first ones and we planted them again and they did not grow good.

JASPER DONAHUE,
Age 9, Second Grade.

BEETS

Last February we planted our beets and in May they were big enough to eat.

When we planted the beets we laid the seeds on the ground one inch apart and when the plants grew big so the leaves touched the other we pulled them out and they were four inches apart.

We did not throw the little plants we pulled up away. We washed them good and Mrs. B— cooked them for our dinners. they were very good. I did not know leaves are good to eat.

We pulled the beets when they were as big as apples and cut the big leaves off and Mrs. B— cooked them for our dinners.

I know about three kinds of beets. One kind grows in our school garden for us to eat.

One kind is called stock beets and farmers raise them to feed to cows where it is cold and grass does not grow in winter.

Sugar beets are raised to make sugar. The good sugar we buy is made with beets. Some sugar is made with sugar cane.

ELIZABETH CUMAYHIA,
Age 9, Third Grade.

SQUASH

When the days were warm we planted the squash in the corn field and they did not freeze.

The hills are six feet apart and we put three seeds in a hill. We put six seeds at first and when the plants were big we pulled up three. We left three big plants.

The squash are growing very good and will not be ripe before school is out.

Some of our squash are round like a ball and some are round and have a neck that is not straight. It bends like a handle.

When squash are ripe they are cut in pieces and cooked in an oven. We do not eat the peeling. We dig out the inside like we do when we eat a melon.

JAMES QUOROH,
Age 9, Second Grade.

RADISHES

Our radishes are very good. We planted many seeds and when they grew we pulled out some and the plants were two inches apart.

Some of our radishes are long and white. Some are round and have white tops and red down under.

We did not eat the radish tops like we did the beet tops. We did not cook the radishes like we did the beets.

We washed them good when we pulled them up and ate them without cooking. We had the radishes many times.

I like the things that grow in our school garden and I think I will ask my father to plant a garden at home next year. Our teacher said he would get all the seeds we want and show us how to plant them.

ASCHA COLT,
Age 9, Second Grade.

COTTON

We have a nice field of cotton. Mr. Barnd said it is one half acre. It is long staple cotton. We call it that because the cotton is long and short staple cotton is short. Long staple cotton will grow here and will not grow where it rains very much.

Long staple cotton is worth more money than short staple cotton.

We planted our cotton last year in March. We had a cotton planter and a horse pulled it. The seeds fell out an inch apart and the planter put dirt on them and a wheel rolled on the ground and pushed it down hard. When the seeds came up we pulled out many. They were six inches apart.

We hoed the cotton many times and a man came and plowed it in the summer when we were not in school.

Our cotton did not have cotton on until we came to school this year.

It had cotton blossoms and bolls and cotton on all at one time.

We all picked our cotton and sold it for forty five dollars.

We told Mr. Barnd what we wanted him to buy with the money and all wanted a phonograph. We bought a phonograph and records and we can play our phonograph after school if we are good in school. I do not like it when some of the children are bad and we cannot play the phonograph.

We bought two dolls for the girls to play with. We have a bed and a little table and a set of dishes for the dolls and we made dresses for them.

We have a set of croquet we all like to play. We bought it with the money we earned. The boys have a base ball and a foot ball and we bought many other games with our money.

ELEANOR SUN,
Age 10, Third Grade.



AGNES BREAD
ELIZABETH SUN HAZEL CAMERON DOROTHY MCKINLEY MADIE BREAD

Notes on Educational Progress

CURRENT PRESS COMMENTS ON DOINGS IN THE VOCATIONAL FIELD

Printers' School.

The printers' school is not yet opened because all plans are not decided, but it is expected that they soon will be. The school is to be conducted under the Federal vocational law and will be operated as a real trade school. Pupils, if plans are carried out, will be given credit for work done, which will grade their apprenticeship in regular shop work.—*Cincinnati (Ohio) Star*.

Vocation for Soldiers.

Ayer, Mass.—At an educational conference at Camp Devens recently a committee was appointed to form an educational bureau to provide vocational education for soldiers leaving the service. The committee is composed of Everett W. Lord, dean of Boston University, and other educators. The question of giving New England soldiers a chance to obtain a better educational equipment for earning their living was discussed by several speakers, Major General Henry P. McCan and Payson Smith, Massachusetts Commissioner of Education.—*The Christian Science Monitor*.

Vocational Training.

"In Canada countless disabled men are earning more now than they ever earned before entering the service." Mr. John D. Gray, ex-county auditor, made this assertion yesterday while speaking of the Federal Vocational law recently passed by congress. "The United States expects to fit 20,000 men per year to go back into the industrial life of their own communities, specially trained for some vocation, and able to earn more at a more congenial occupation than would have been possible had they never gone to the front. The American Red Cross has been invited by the Federal Board to cooperate in this work. The families of men who are in training will be the special responsibility of the Red Cross. This will be a very essential service.—*Petersburg (Ind.) Democrat*.

400 Soldiers Ask for Vocational Training.

Applications for vocational training have been received from more than 400 discharged and disabled soldiers, by the federal board for vocational education.

Harry W. Jones, district director, today said the educational institutions would receive a large part of these men for special training by February 1.

Records of disabled soldiers who returned to their homes in Minnesota, Montana, North Dakota and South Dakota will be considered by the district case board which meets next week.—*Milwaukee (Wis.) News*.

Vocational School Need of Muskegon.

The introduction of a system of vocational training into the public school system of Muskegon, for the benefit of those who because of inclination or of economic pressure are unable to attend a higher institution and many of whom cannot complete even the local high school, and the establishment of a junior high school for the more individual training of the boys and girls in the adolescent years, were advocated by Superintendent Paul C. Stetson of the Muskegon schools in an address before the Muskegon Kiwanis club at its noon luncheon today.

The present school system, said the superintendent, is built up on aristocratic lines, solely designed for the training of the student who is expecting to go to the university, whereas the great number never will go there.

Many who are labeled as incorrigible, he declared, are so merely because they are manual-minded and the course of the ordinary school does not appeal to them. They should have training that does, he declared.

The superintendent spoke in favor of the Smith bill in the senate for the creation of a department of education in the president's cabinet and declared that it is time we began thinking of education in national terms.—*Muskegon (Mich.) Chronicle*.

Idleness is the key to beggary.—SPURGEON.

Appropriation is Made for Vocational School.

An auto school instituted under the Smith-Hughes act by the Board of Education is justifying the board in authorizing the first of the vocational schools in Cincinnati, according to the report of John B. Arundel, director of vocational education of the public schools, submitted at the board Saturday.

Dr. Randel J. Condon, superintendent of schools, in his report recommended the appropriation of \$3,000 from the contingent fund for supplies and equipment for vocational classes, which recommendation was concurred in by the board. — *Cincinnati (Ohio) Commercial-Tribune*.

More Money for Teachers.

More money for teachers throughout the state, in both rural and urban districts, more assistants in the state office, greater vocational educational aid for the growing number of illiterate in this state, the need of a second normal school in Montana for training additional teachers, an addition to the office force of a high school supervisor, correct distribution of library funds in rural schools and the need of better business methods in handling rural school districts are the subjects taken up in the 15th Biennial report of Miss Mae Trumpet, state superintendent of public instruction.

Montana has the reputation for paying higher salaries in all walks of life than the majority of states, yet the amount paid teachers in shamefully meager. All too often teachers' salaries are considered as so much a month, and many patrons feel that \$80, \$95, or whatever it may be, sounds like good pay, but it is a different matter when we consider that the pay envelop stops at the end of three or four months or even sooner with many, six or seven months with many more and always by the end of nine or ten months, and yet those same people receiving those pay envelops must go on living and paying for doing so during the remainder of the year. Every summer finds an increased number of teachers seeking employment because of the increased cost of living, even if they must accept positions in which unskilled labor is required. Although the cost of living has gone up by leaps and bounds, the average salary of men teachers in Montana had increased in 1917-18 only \$5.52 a month since 1910 and of women \$10.34 a month. — *Helena (Mont.) Industrialist*.

Begin Training of War Cripples.

Reconstruction work has begun at Camp Custer with the arrival of Charles Silverstone, director of vocational instruction for Federal Board No. 8 with offices at Chicago, and his assistant, O. Kohsiek. These men are setting in motion the machinery for training soldiers discharged for physical disability.

The plan calls for training all men who have become physically unfit in the army through wounds, accidents or illness acquired in the service here or abroad. The soldiers may select their own vocations, but in case they are uncertain the board will make recommendations. They will be sent to one of three great universities, Michigan, Illinois or Wisconsin, for training. These are the only reconstruction schools in this district.

While attending school the men will receive the compensation provided to bring their monthly wage to a minimum of \$65. The maximum is \$75 for men with families. — *Grand Rapids (Mich.) Press*.

The Federal Board for Vocational Education was established by the government for the purpose of directing the employment and training of soldiers, sailors and nurses who have been permanently disabled by their war service. It is found, however, that many applications are made to the various branches of the Board by men from the service who have suffered no injury or permanent disability, but who, nevertheless, are eager for any opportunity for further education.

Manifestly the Board, as constituted, has all it can do in the vocational training of those more unfortunate of our country's servants who never again will be well and sound. The New York branch alone has placed in jobs or in vocational schools 3,100 such men since the middle of September, when the bureau was started.

Of course the instruction of the disabled should be the nation's first concern, but the longing of these others who every day, in great numbers, make application for help must not be disregarded. Every man should find within his grasp the facilities of learning.

If safety for the world depends upon feeding the starving millions in Europe, safety for America depends no less upon her gratification of the hunger of thousands for edu-

cation—an appetite whetted by the exercise of minds which before the war lay in sluggish inactivity, but now are keen with the desire to know.

After the fundamentals which must constitute all primary education, the vocational or trade school probably will best serve the needs of the great mass whose lives must be devoted to earning a living.

If the need is to be met as broadly as it deserves, there must be local and federal co-operation in the revision and extension of educational systems.—*Aberdeen* (S. D.) *American*.

To Aid Disabled Men.

With demobilization of our overseas force hardly under way, the Federal Board for Vocational Education, 810 Western Indemnity Building, has the names of 2,000 partially disabled men about whose vocational needs they are gathering information. Recommendations regarding the training of fifty of these men have already gone forward to Washington, and they are expected to be in training by the end of the month. They will be among the first and immediate beneficiaries of the system by which the government intends to fit those wounded or shattered in health through military service to face again the battle of life. Several men are already in training in the institutions with which the Government has contracts to provide the needed training, according to Dr. James C. Miller, field organizer for the Federal Board of Vocational Education, who is here conferring with W. F. Doughty, district vocational officer.

"We are prepared to take care of the situation all over this district, which includes Texas, Oklahoma and Arkansas," declared Mr. Doughty. "We are doing so now, with the active co-operation of the Home Service Section of the Red Cross and the Federal Employment Bureau."

In order to care for the expanding activity of the board, seven new members have been added to the district staff the last week. At every army and navy hospital and camp these representatives are to be found, where they meet and interview men discharged or shortly to be discharged who have suffered wounds or illness which will curtail their earning power. Some 300 have already been interviewed with a view to determining their vocational needs, and the number is increasing daily, according to Dr. Miller.—*Dallas* (Tex.) *News*.

Vocational Training for Disabled Men.

The United States government, through the Federal Board for Vocational Education, is doing good work in behalf of disabled soldiers and sailors. Disabled men should not be permitted to become objects of public charge. The Federal Board is asking sweethearts, wives, mothers, sisters and other relatives not to beg that their loved ones be sent home immediately, if a little further separation will mean much for the men in later years.

The federal government intends to see that every disabled American soldier or sailor has a chance. If the man cannot work at his customary occupation he will be specially trained, at the nation's expense, so that he will be fitted to do something useful and lucrative. While this training is in progress the soldier is paid a stipulated sum and money also goes to his actual dependents. Many a man who was an unskilled worker before the war and who now physically unfit to follow his old pursuit may be trained for work that will pay him far more than he ever drew before.—*Flint* (Mich.) *Journal*.

Shop Course Open.

The St. Paul branch of the state-wide vocational education movement to train men and women as shop teachers was opened last night at the Mechanic Arts high school. Thirty-five persons were present at the opening class.

The work is being carried on by the extension division of the University of Minnesota. The object of the courses, which are meant for industrial shop workers, although others having requirements may put in applications to attend the classes, is to train the students to be teachers of their trade.

After the completion of the course the successful students will be employed as teachers and will work either in the public schools or in shops, but the plan is to carry on the work of shop education through the public school educational department whether the classes are conducted in the shop or elsewhere.

Similar classes have been started in Duluth, Virginia and Minneapolis. Eight instructors are on the teaching list and each will visit the four cities twice during the course.—*St. Paul* (Minn.) *Pioneer-Press*.

"CRIMES generally punish themselves."

U. S. Employment Service to Co-operate with Federal Board for Vocational Education.

In order to perform its whole duty to the returning disabled soldier or sailor, the United States employment service has entered into an agreement with the federal board for vocational education, providing not only employment, but compensation and a chance to be retrained for civil life, to every discharged man who has served with the American forces.

The agreement, issued January 2, 1919, is immediately effective and all local offices are urged to comply strictly with its terms and spirit. Forms forwarded to the federal directors of Kansas City are to be filled out and returned to the federal board for vocational education and the war risk insurance bureau, who will bring to the attention of the disabled soldier or sailor, his further rights and privileges.

In compliance with the spirit of the law, the United States employment service offices here, at 804 Grand avenue, will fill out reports on every disabled ex-soldier or ex-sailor coming to their attention and forward the report to the rehabilitation office of the federal board for the district in which the man is located. They will further assist in the working of the law, by distributing to every man wishing to make application for compensation, the forms necessary for the purpose; and by assisting such men to secure employment pending the determination of their status under the war risk act. The placement of rehabilitated men will also be one of the duties of the employment service under the new agreement.—*Kansas City (Mo.) Journal*.

New System for School Adopted.

Principals of Minneapolis grade and high schools have adopted the three-term public school plan previously recommended by superintendents, supervisors and a special committee of principals. The new schedule permits the all-year school feature of frequent promotion. Pupils will be graded A, B, and C.

The new plan is effective immediately, work done so far this year being considered the first term; the second semester will end in March, and the remainder of the year to June will mark the third term.

Normally each term will be thirteen weeks long, leaving a thirteen weeks' vacation

period. The new schedule will permit more frequent reclassification of pupils and give the bright pupils credit for ability.

It is expected that the summer school soon will be merged, giving Minneapolis the all-year plan recommended by a special committee of the local school board, which investigated the all-year schedule at Newark, New Jersey. Pupils could enjoy a vacation when desired by dropping out for one term—*Christian Science Monitor*.

Vocational Night School Classes.

The most interesting feature of the vocational classes in the Richmond night school is the rapid advancement made by the foreigners who enter the English language class. Last night a Pole joined the class. At the beginning of the hour he could neither speak nor read English, more than to say a timid "yes" and more timid "no." By the end of the hour this pupil with the help of Guy Sipple, the teacher and another Polish speaking member of the class was able to write his name quite well in English and had added several words to his formerly limited vocabulary.—*Richmond (Ind.) Palladium*.

Vocational Guide to Assist Soldiers.

J. Adams Puffer of Kansas City, one of the leading authorities of the nation on vocational guidance will arrive in Fort Sill Monday to spend four days addressing the soldiers on the subject of vocational training and preparation for securing the greatest advantages offered by civilian life. Mr. Puffer has just concluded a series of lectures at Camp Travis, where he made a highly favorable impression upon the military authorities. He is now touring the Southern Military camps under the auspices of the National War Work Council of the Y. M. C. A.

Science today is taking more and more a part in helping men find their proper niche in the industrial life of the nation. Mr. Puffer's work is to try to show the individual how to go about finding his proper place, why he should swing to it once he has found it. His lectures have provoked considerable interest and discussion among military psychological experts and educators, with the result that a well defined program is now being carried out at Camp Travis and will be attempted in other camps.—*Lawton (Okla.) News*.

Said of the Indian and His Way

THIS DEPARTMENT IS OPEN FOR CONTRIBUTIONS CONCERNING THE INDIAN AND HIS PROGRESS EVERYWHERE

Yakima Indians Getting Rich.

L. M. Holt, supervising engineer of the Indian Service here in charge of the Wahpeto project, in discussing the nation's wards said, "today the pruning-hook and plow-share are the Indian's best friends. On the past year's crops, including leased lands, they received more than a million dollars."
—*Seattle (Wash.) Times.*

Rich Indian Takes Wife.

Bismark, N. D.—Old Dog, chief of the Gros Ventres, one of the four tribes which lives in peace and harmony on the Berthold Reservation, has brought Mrs. Old Dog to a hospital here for treatment. Old Dog is a full blooded Gros Ventres, and is one of the wealthiest and most progressive Indians on the reservation. He has thousands of acres of good land, several thousand head of registered cattle and hundreds of fine horses. Last summer he built a nine room home in which he installed a modern heating and plumbing system.—*New York (N.Y.) World.*

The Indian's Right.

The heroism and loyalty displayed by the American Indian on the battlefield and on the ships at sea calls imperatively upon the American people to grant the red men full rights of citizenship. It is an absurdity to assume that there can be the most remote danger in extending these rights. No class of Americans have supported war activities at home more generously, no class has shown greater gallantry in the midst of shot and shell. Posing as we do as the champion of the rights of man and peoples, it is not easy to explain even to ourselves now why the race that we drove out by conquest should be longer treated as slaves.—*Fort Wayne (Ind.) Gazette.*

Claims They Had Woman Suffrage.

An article in a Western newspaper, speaking of the hard lot of the American Indian wife, called forth, the other day, a letter

from an educated Indian woman to point out how little the writer of the article knew about Indian domesticity. Far from becoming a drudge and slave, the Indian woman, when she married, became "a wife, a companion, doing her acknowledged share for the life of her people, just as her ancestors had been accustomed to do for ages." The wife kept the tepee, cooked, made clothing, and attended to the spiritual education of the children; the husband tilled the soil, hunted, and did the heavier kinds of hand-work about the home. More than that, women were treated with high respect, and took part in elections and councils, "the only government in the world," says this modern Indian woman speaking for Indian women of the past, "in which woman suffrage was granted and given a full chance to develop."—*Boston (Mass.) Christian Science Monitor.*

Navajo Blanket, Woven as Shroud for Indian Yank, Sent Home to White Father.

The son of Hosteen Nez Baza, woman of the Navajos, was in France, fighting for the honor of his country and his forefathers.

When he left for duty overseas he carried with him a wicked scalping knife. The knife was a relic of the days when the warriors of his race were wont to claim the scalps of their victims as token of victory. The knife was presented to him by Hosteen Nez Baza. He said he would use it. He had spoken.

After her bronze son had been in France months and months, Hosteen Nez Baza, who lived in the arid wastes of Arizona, became worried. In the days of her fathers, when the warriors were victorious, they returned at short intervals to partake of various delicacies. Then they returned to battle.

Fearing that her son was dead, Hosteen Nez Baza, who was an expert blanket maker, weaved an exquisite Navajo blanket in which to bury her son on the four high poles. This was in accord with the customs of her ancestors, who bowed to the Great Manitou.

But the spirit of Americanism had crept

into the blood of Hoosten Nez Baza. So instead of weaving the blanket in colors of sombre hue, she made the blanket of thirteen stripes, varying red and white. And in the upper corner was a blue field with forty-eight stars. An American flag.

But the son of Hoosten Nez Baza was not dead. He was living. He had killed Germans. He had satisfied the clamoring honor of his ancestors. And he had upheld the honor of the Americas.

Instead of using the flag for a burial shroud, Hoosten Nez Baza, the woman of the Navajos, sent the flag to the Great White Father in Washington. A gift of gratitude.

The flag is now displayed in the big corridor of the new Interior Department building, at the corner of F and Eighteenth streets northwest.

Crowds passing through the halls daily stop to examine the exquisitely woven flag, and admire its thick, woolen texture. It is longer than a tall man, and nearly as wide as it is long.

And when the warrior son of Hoosten Nez Baza, woman of the Navajos, returns from France, he will go to the Interior Department building, to view the flag intended for his shroud. It is the custom of the Navajos to obey the wishes of their ancestors. Hoosten Nez Baza says the Great Manitou has so spoken.—*Washington (D. C.) Times.*

The Case of the American Indian.

We are in receipt of the thirty-sixth annual report of the board of directors of the Indian Rights Association, a volume which we have had no opportunity as yet to read, but which we expect to read.

Meanwhile, be it said that while we make no pretense whatever of having expert knowledge of the Indian, we nevertheless entertain, loosely, a tentative view touching one aspect of the "problem," and that is this: "Indian rights?" It is a plausible and touching phrase; but we really should like to know just what rights the Indian has not, but which is a source of worry to him. If the Indian wants anything particularly except to be let alone, his desire has not been sufficiently loudly voiced to make an impression upon our mind. But the Indian would like to be let alone, we fancy. He doesn't desire any responsibility. He prefers not to

work. He prefers not to be disciplined in personal matters. He wishes plenty of time in which to rest, nod, fish and hunt.

Manifestly even the Indian Rights Association cannot hope to restore all the rights of the red man, and we assume that it does not entertain any such purpose.

A Rousseau could take a typewriter and prove that so far as the rights are concerned the American Indian is entitled to a restoration of his lost American territory to him as in fact, in the light of some developments of the season, it is marvelous that the Indians have not sent a delegation to the Peace Conference to demand the return to the Indian of forty-eight lost provinces and also the writing by that Congress of an Indian Bill of Rights whereby all of the things which the Indian has shown himself temperamentally and intellectually incapable of acquiring may be vouchsafed him nevertheless.

However, lest the suggestion put bad notions in the head of some of our lady-like gentlemen reformers, who desire a free trip to Paris, so they can get in the President's way, let the same be properly modified at once.

It is true that the Indian was swindled right and left by the white man. Say all that it is the custom to say on the moral issue involved here. But that was a superficial aspect of the differences between the two races as they came together in the wilderness of an isolated continent, one to plant a civilization, another to combat it, but to go down in the struggle, perhaps never to rise again.

The Indian could not stand the competition of the white man, even on ground chosen by the Indian, every inch of which was familiar to him—that is the crux of it. Biological laws denied to the Indian the virtue of industry and ambition, but gave the same to his competitor in over-running measure. These laws gave no imagination to the Indian and little native capacity for reasoning; the same were vouchsafed his competitor in great abundance. It would even seem that the Indian as a race was not destined to stay long upon the earth, for his was never a prolific race. It has been estimated that at no time was the population of the North American Indian greater than a half million. The white man multiplies and replenishes the earth. He conquers and holds to his gains.

The Indian was not neighborly. Naturally he was suspicious of his white neighbors (surely he had cause to be) naturally he was jealous of their encroachments. In consequence he practiced butchery against the white man. This made it necessary for him to be repressed by stern measures.

It has ever been that the savage had to give way to the advance guard of civilization. At least he faced the dilemma of accepting civilization or being exterminated and pushed back by it. The Indian did not choose, as a race to accept civilization.

If it be said that the Indian's natural right to all the land and privileges of the continent on which he was found is so conclusive as to have denied the white man the original right as a navigator and explorer to touch the Indian's soil, is to deny also the right of the human race to advancement, to civilization, to enlightenment; and the same is to assert also the doctrine that North America belonged to the Indian from the beginning of time, whereas your geology will show you that the mastodon and sloth at least had a prior claim, for they existed first. The Indian either immigrated from some other clime, which he abandoned, or he grew up in the forests of North America like moss and ivy, without conscious purpose, or without the means of escaping the growth.

In passing, let fantasy hold the imagination for the moment. Let us suppose that an "economic revolution" should take from the dominant white race in America the property, liberty, privileges and the power which it now enjoys, and bestow all of them upon the Indian as he sits with a blanket over his shoulders in his for-off reservation, meditating upon the day when the Happy Hunting Ground shall open to him. If the Indian were five times as numerous as he now is, we might then visualize, roughly, the thing that has happened in Russia by which the poorest and most ignorant, have through force, acquired (and dissipated) everything which previously had been accumulated by the intelligent and industrious.

But here again we are reminded of a trait in the Indian's character which contrasts him strikingly with the white man and with the yellow man of the Orient: Such a fantastic picture as we have suggested could never be true because the Indian, as a race, appears to be without economic ambition or

social or political aspiration. The Indian is a warrior, but he is not a revolutionist, except when white blood goes into his veins and makes of him a Mexican half-breed and except when the environment and leadership of white men make him a kind of revolutionist in Mexico. The North American Indian proper is entirely lacking in the spirit and philosophy of the revolutionist.

But even the Russian moujik is a revolutionist, and likewise the heathen Chinese; though the Oriental, including the Russian, is not only less disposed to accept political changes than any other type of people, but generally speaking *laissez-faire* is a passionate religion with the Oriental. To the extent that he is entirely indifferent to change the North American Indian resembles the Oriental, though it can scarcely be said that opposition to change is a religion with the Indian.

As a rule the Indian—at least he has made such an impression upon us—doesn't give a continental which way the river runs just so it doesn't run him away from his fish, his deer and his bears.—*Montgomery (Ala.) Advertiser.*

Getting Civilized.

Martin Portra, a half breed living on the Turtle Mountain Indian Reservation, was arrested recently on a federal warrant, charging he had brewed beer and given it to Indians. He is being held on a bond of five hundred dollars, and will have his hearing at the Devils Lake term of federal court.—*Grand Fork (N. Dak.) Herald.*

Stops Appropriation from Tribal Fund.

Members of the Minnesota delegation, led by C. B. Miller, "did things" to the Indian appropriation bill before it finally went through the house. They succeeded in eliminating the item of \$165,000 for the support and civilization of the Chippewas of Minnesota, which comes from the tribal fund, and which the Indians allege was spent largely for the payment of salaries of employees in the Indian Service throughout the state.

An appropriation of \$10,000 was placed in the bill, to pay the expenses of the Chippewa council in spite of the opposition of the Indian Bureau.

WE rise to fortune by successive steps; we descend by only one.—STANISLAUS.

Standing Solidly Behind Government They Have
Purchased \$75,000 of Liberty Bonds.

Eleven hundred and eighty-five Indians of the Berthold reservation now have \$75,000 invested in the four Liberty loans and have contributed \$4,500 to the Red Cross and associated war organizations and paid in \$333.70 in the Christmas Red Cross roll call.

Major E. W. Jermack, superintendent of the Berthold agency, made this casual report recently in response to a request for some information concerning the patriotic activities of his redskin wards.

The Gros Vetres, (Hidatsas) Arickaras, (Sanish) and Mandans, (Minitaries) who comprise the Indian population of Berthold reservation invested \$10,500 in the first Liberty loan; \$47,500 in the second, when the reservation assumed responsibility for half of McLean's quota, which the reservation raised, although McLean county did not stop with its quota; \$6,500 in the third, and \$11,000 in the fourth.

On the Fourth of July the Berthold Indians of Raub and Elbowoods staged the greatest patriotic celebration in North Dakota, for the benefit of the Red Cross. Five thousand people attended; the gross receipts were \$5,900, and the net income for the Red Cross was \$3,000. In addition there was endowed with the proceeds of this celebration a hospital cot costing \$700.

"Our Indians," said Major Jermack recently, "have never been more prosperous than they are today. I have records of \$800,000 in tribal funds on deposit in fifty bonded depositories in North and South Dakota to the credit of the Berthold Indians. We own one of the best purebred Hereford herds in North Dakota, and we have 618,000 acres of allotted Indian lands under fence. We have 4,500 head of good cattle, 4,000 head of horses, with 1,400 active leases, aggregating \$85,000 acres, which is rented to white farmers or ranchers. Last year the Indians themselves had under cultivation 15,500 acres, and we leased for grazing purposes 245,000 acres. During the last year the Indians on Berthold built more than 100 frame homes, costing from \$600 to \$2,800."

Major Jermack first became interested in Indian affairs when he went to Washington in 1897 as secretary to Congressman Reeder of the Sixth Kansas district. He entered the Indian office in March, 1901, and his first agency position was with the Osage Indians

in Oklahoma, where he supervised the making of many of the oil leases which have made their owners the wealthiest Indians in the world. He came to Elbowoods in 1913, and this reservation has shown constant progress since that time. The major is proud of his Berthold Indians, willing to stake them against any native Americans in the country for progress, prosperity and good citizenship.—*Bismarck (N. D.) Tribune.*

Indians in the War.

During the time of the terrible fighting in France, dispatches frequently brought word of the great service the American Indian was rendering. "Indian warfare" was a term often employed by the correspondents, and much in praise is spoken of the skill, cunning, daring and fearlessness of the red man.

It is the testimony of William Mason, otherwise Chief Tahola of the Quinaielts, whose reservation is in the Puget Sound country, that every able-bodied man of his tribe is in the army, and that many of them are now or have been in France. Reports received by the chief are that his soldiers have "made good."

"The war has given the American Indian an opportunity to prove that he is as patriotic a citizen as his white brother," says Tahola, and he adds that his charges have bought many thousand dollars' worth of Liberty bonds and war savings stamps.

The reservation occupied by the Quinaielts is in the heart of the spruce timber country south of Gray's Harbor, Washington, and the tribe owns some of the finest spruce forests in the world. The government now is building a railroad to the timber and the owners will prosper from the sale of material for airplanes.

Of course, the Quinaielts are not the only Indians who responded to the call of the government, for many companies were raised upon reservations in various parts of the west. It is of record that the tribesmen proved themselves exceptionally efficient in certain classes of work, notably in scouting and observation.—*Salt Lake City (Utah) Tribune.*

THE reputation of a man is like his shadow: It sometimes follows and sometimes precedes him, it is sometimes longer and sometimes shorter than his natural size.—FRENCH PROVERB.

THE COMING OF THE AMERICANS

FROM *The Boston Herald and Journal*.

YES, Milton or Shakespeare or Homer even should be living now. Material for an epic such as their hands alone have ever fashioned fills the air these days—like stella nebulae awaiting planetary creation and setting in beauteous order forever. We fain would entrust such a magic task to attested powers like theirs. But lacking their return, may we not hope that an adequate soul will yet arise to envisage the epic of our day?

Such a voice must be looked for, in all probability, on the other side of the Atlantic. For no one in America can fully realize what the coming of our troops, now a million strong "over there," meant to peoples whose homes were in the war's maelstrom. The practical military aid which this event achieved across torpedoed leagues of sea, affords nations long wasted by unspeakable sufferings and losses, is readily enough conceived. But its meaning to their blasted, yet unyielding hearts' is inevitably beyond our power of full comprehension; and herein is the story's dramatic grandeur. This is a romance of the human spirit which will doubtless glow in the coming literature of France or Italy or Belgium, of England or racy Scotland—some day, when the widely variant genius of those lands shall have recovered power to gleam forth in full splendor.

Let the strange security of a child's mind against disabling gloom serve to give token of what may find full expression by and by. A thirteen-year-old girl in France was asked by her teacher to write a theme on the coming of the Americans to help drive out the invaders. This is what she wrote:

It was a little river—almost a brook. It was called the Yser. One could talk from one

side to the other without raising one's voice. The birds could fly over it with one sweep of their wings. And on its banks there were millions of men, the one turned toward the other, eye to eye. But the difference which separated them was greater than that between the stars in the sky. It was the difference which separates justice from injustice. The ocean is so great that the seagulls do not dare to cross it. During seven days and seven nights the great steamships of America, going at full speed, must drive through the deep waters before the lighthouses of France come into to view. But from one side to another hearts are touching.

ODETTE GASTINEL.

There is something Homeric in this writing of a child. What classic detachment, what freighted simplicity, what fullness of serene insight along with utter freedom from mention of revolting actualities mark its rhythmic chasteness! What charm of deftly handled details is in these lines, exemplifying the dictum, "in description, how greatly the particular excels the general!" Nothing could more adequately gather up into words the awful array on the opposite banks of the little river than the brief lines about the difference separating those opposing hosts being greater than that between the stars in the sky—for "it was the difference which separates justice from injustice." And surely no words could give more consummate interpretation, more genuine crowning, to her thought of the coming of the Americans, than the contrasting of the vast ocean with the little Yser, and the single added sentence, "but from one side to another hearts are touching."

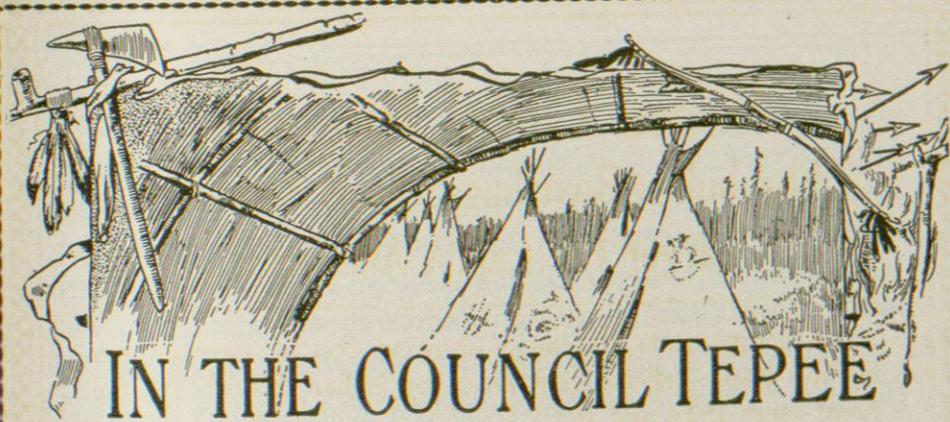
EVERY man's powers have relation to some kind of work, and whenever he finds the kind of work which he can do best—that to which his powers are best adapted—he finds that which will give him the best development, and that by which he can best build up, or make, his manhood.—J. G. HOLLAND.

Some Good Reasons Why Indian Boarding Schools Require a Larger Per Capita Allowance

A comparative statement showing cost of twenty-three leading staple articles purchased by Indian Schools for the fiscal years 1914 and 1919.

ITEMS	COST IN 1914	COST IN 1919
Beef, net, per 100 lb.....	\$8.89	\$16.69
Flour, per 100 lb.....	2.10	5.09
Sugar, lb. ....	.0415	.088
Lard, lb. ....	.13	.24
Pork, mess, lb.....	.10	.275
Beans, pink, lb.....	.0398	.0617
Dried fruit, lb.....	.08	.1075
Potatoes, bu.....	.75	1.50
Rolled oats, lb.....	.036	.075
Hominy, lb. ....	.025	.05
Corn meal, lb.....	.025	.05
Rice, lb. ....	.055	.065
Syrup, gal. ....	.1789	.486
Fuel gas (per 1000 ft.).....	.13	.25
Uniforms, boys	6.00	13.65
Gingham, yd. ....	.075	.275
Sheeting, yd. ....	.085	.229
Hose, doz. ....	.80	2.05
Blue serge (for girls' uniforms) yd.....	.60	2.25
Seersucker, yd. ....	.085	.245
Blankets, cotton	1.50	3.00
Mattresses	2.80	4.97
Overalls .....	.75	1.50
TOTAL.....	\$26.2762	\$53.1972

INCREASE IN COST OF ABOVE SUPPLIES 102 PER CENT



THE JOURNAL'S NEW AIM AND PURPOSE

WITH the January number the JOURNAL took a little step forward in the way of broadening its scope to cover more thoroughly the educational field with the view of furnishing to educators in the Indian Service more complete information as to current present day educational thought and progress. It aims to print interesting and instructive articles on educational topics, inspirational high lights for the encouragement of teachers and instructors, and helpful suggestions and information for all wide-awake, progressive workers who are ambitious to learn and keep abreast of the times.

In each issue, under the heading, "Notes on Educational Progress," will be found numerous press comments on the activity and interest that are being displayed in vocational education and training throughout the nation. The "Smith-Hughes" and the "Smith-Sears" Acts, which are being administered by the Federal Board for Vocational Education, are apparently destined to work great and immediate changes in the national conception and aim of education, and teachers everywhere should watch the activities of this new federal movement. It will be the aim and purpose of the JOURNAL to keep its readers posted as to the trend of educational thought and progress as expressed in the leading newspapers and educational publications throughout the country. The measure of the educator today is the radius of the sphere in which he is thinking. The JOURNAL will supply you food for thought and help you to lengthen that radius.



AVERAGE ATTENDANCE AND PER CAPITA ALLOWANCE

RECENTLY the Superintendent of one of our important (and usually well conducted) nonreservation schools wrote us saying: "When it (the per capita allowance) was determined by taking enrollment the schools had a chance to make good. As it is now we spend most

of the time trying to escape bankruptcy. We have to cut too close on food and clothing and do without at least two absolutely necessary employees. . . . We are permitted to expend such a small per capita that it necessitates the requirement of pupils eating less than they should, and wearing clothing and shoes the condition of which makes them dissatisfied with general school conditions."

This is not at all surprising. The wonder of it is that many of our Indian schools have been able to keep going at all on the money allowed for their support. All any one need do to be convinced is to look at his own family expense account for the past twelve months and compare it with that for a similar period before the present era of high prices. To quote statistics, compare the cost of supplies now with their cost before the war, would seem trivial and a waste of time. Everyone understands and admits the truth of the simple statement that the cost of living is almost double what it was four years ago. It is folly to argue over so self-evident a truth. Whereas, if it cost \$167 per capita to conduct Indian boarding schools before the war, it should require between \$250 and \$300 per capita to properly conduct them now. This, we believe to be a very conservative statement—one that any reasonable, fair minded man who is familiar with the facts will admit to be true without question or quibble. How, then, can a school facing these conditions furnish its pupils with an abundant amount and variety of wholesome food, ample supplies of shoes and clothing, in addition to providing books, instruction, heat, light, and all the various other necessities of a properly conducted boarding school, at a cost not exceeding \$200 per annum based on the average attendance for the "entire fiscal year" and not any "fractional part thereof?" Based on the average attendance for the entire fiscal year the per capita cost at Chilocco this year is estimated at about \$300. We are able to meet this high cost only by reason of the large returns from our 8,640-acre farm. But no other Indian school is so fortunate as Chilocco in this respect.

We know Superintendents who have spent sleepless nights during the past year trying to figure out how properly and adequately to feed, clothe, nurture and provide instruction for healthy, growing, husky boys and girls on a per capita allowance of \$200 a year and less. We have tried it too, but realizing the impossibility of performing such a feat we gave it up. The per capita allowance should be increased and based on enrollment and then the number of Indian schools should either be reduced, or the appropriation for Indian education increased. There seems to be no other way out. You can't put a quart measure into a pint cup.

**LET THERE BE NO
"GOLD-BRICKING"**

A few weeks ago there was held in Chicago the annual meeting of the Vocational Education Association of the Middle West. There were the usual heated discussions between the advocates of the old cultural and liberal plan of education, and those representing the present day vocational trend. There were charges that high schools which include vocational training in their courses of study are "gold-bricking the public," according to newspaper accounts.

While we regard the old cultural plan as inadequate and made specially for the benefit of the comparatively small per cent of students who complete high school and go on through college with little regard as to the needs of the other 90 per cent, still we believe that there is a happy medium somewhere between the positions of the extremists who take opposite views as to what should constitute a practical education.

One of the speakers at the Chicago meeting was Dr. David Snedden, professor of vocational education at Columbia University. We have long been accustomed to look upon Dr. Snedden as one of the foremost leaders in vocational education in this country. We are, therefore, somewhat surprised at some of the statements he makes. Few of them apply to Indian schools as they are now conducted, but our readers may be interested in what he says of vocational education in the high schools. We quote here a few of them:

The high schools should give up the pretense of teaching vocational subjects and should go back to the old cultural and liberal education plan.

I am fighting everything the modern high school is teaching today because we don't know how to teach the courses that are given. I don't believe in mixing vocational and general education. Our industrial education scheme has to have a new start.

We must recognize the change of conditions which the war has brought and train men and women not in the passing handicrafts, but as operators of machines.

In vocational schools it is ridiculous to try to teach 16-year-old girls anything about home-making, for they are too far away from the proper mental attitude for the studies. Thus far we have only been playing with vocational education.

He then outlined what he considered a proper course for girls as follows:

Preparation of the family breakfasts, including buying, for one month.

Repair and general upkeep of clothing of three children for one month.

Family laundry for two weeks.

Outing care of an infant for two weeks.

- Morning washing and dressing of infant for two weeks.
- Preparation and serving ten successive dinners.
- Care of two bedrooms for twenty-five days.
- Keeping family accounts for two months.
- Renovating and cleaning furniture of two rooms.
- Care of invalid, afternoon and evening hours, for two weeks.
- Entertaining and supervision of three children under 5 years of age for twenty afternoons.
- Making infant's layette.
- Making bread, hot and cold, for six persons for two weeks.

This is an excellent course for girls and the Course of Study for Indian Schools provides for practically all of the training here suggested. Where the "model home cottage" plan is employed and properly conducted the training may be given on the family unit basis, which is a most important detail when it comes to making it of real practical value to the students.

Dr. Snedden says, "We must train men and women not in the passing handicrafts, but as operators of machines."

Perhaps this may be true. No doubt much time is wasted on "the passing handicrafts." But shall we not train our boys and girls in other things than the operation of machines? Because a boy is learning a vocation requiring him to work with his hands, shall he be denied training in appreciation for the good and the beautiful in literature, music and art, and in the artistic side of home and social life? May he not also be encouraged to cultivate life's higher ideals and aspirations and to hearken to the voice of the Cosmic Urge?

The German schools taught their pupils to operate machines. In this respect they probably surpassed all other schools in the world; but we are sure Dr. Snedden would not maintain that the German system is what is needed in American schools. Let us teach our pupils to operate machines, and to do other useful work, by all means; but let us also teach them appreciation for all the good things that make for the fuller and nobler enjoyment of life. Let us guard against industrial serfdom and the spirit of bolshevism by providing proper cultural education in our schools as a companion for vocational education. And why not mix vocational and cultural education? There is no good reason why we should not have both. Let there be no "gold-bricking the public" in this matter of vocational or other education on the part of the schools and educational leaders. We are Americans still, and this is a democracy.



FIELD



NOTES



COMING EVENTS

February 21-22: National Society for Vocational Education, Annual Convention at St. Louis. President Dr. David Snedden, Columbia University, New York.

February 21-22: National Council Normal School Presidents, at Congress Hotel Chicago. J. A. Pitman, Salem, Massachusetts, President.

February 24 to March 1: Department of Superintendents, N. E. A., Chicago. J. W. Crabtree, Secretary N. E. A., Washington, D. C.

March 6-8: East Central Oklahoma Educational Association, at Ada, Oklahoma. President, V. H. Durham, Holdenville, Oklahoma.

June 29 to July 5: Annual Meeting of the National Education Association, Milwaukee, Wisconsin. Secretary, J. W. Crabtree, Washington, D. C.

Education has been defined in many ways according to the age and country in which the teacher lived; but when it is all summed up, we find that what people need is the kind of teaching which will make it possible for them to do their part in the world's work.—
P. G. HOLDEN.

We are in receipt of a letter from the Superintendent of one of our very best reservation boarding schools containing the following inquiry: "How on earth are schools going to continue under the present computation and the present per capita and, at the same time, not even the sky the limit on costs of staples, etc.? We can run on our allotment but not on the limitations placed on its use."

We are compelled to confess our inability to answer this reasonable and pertinent question.

Some folks have a way o'doin' nothin' that can hardly be distinguished from work.—
—ABE MARTIN.

Only by utilizing all the resources at our command and by studying ways and means of interesting our pupils may we hope to become proficient in the great art of teaching. Unless we ourselves show interest and enthusiasm in our work, we can not hope to awaken interest in our pupils. We must be students and thinkers as well as doers. We must use our spare moments in planning our lessons, preparing illustrative material, and in otherwise better fitting ourselves for carrying the message to Garcia. "The vital breath of the teacher is professional research and study."

The Smith Education Bill (S. 4987) provides \$100,000,000 annually for certain types of education in the various States as follows:

1. For the removal of illiteracy, \$7,500,000.
2. For the Americanization of foreigners, \$7,500,000.
3. For the equalization of educational opportunities, particularly in rural and village schools, \$50,000,000.
4. For cooperation with States in the promotion of physical and health education, \$20,000,000.
5. For extending and improving the facilities for the preparation of teachers, \$15,000,000.
6. The Bill also provides for the creation of an Executive Department to be known as the Department of Education, with a Secretary in the President's Cabinet.

Sherman Institute reports that they have three vocational classes in Agriculture, Carpentering, Blacksmithing, Engineeing, and by having this instruction given from 7:30 to 8:00 A. M. both the school and the work divisions of these classes combine for this instruction which gives each class two lessons a week. They also find that by having the vocational lectures in Engineering, Blacksmithing and Carpentering conform to a schedule in which the first year lectures in each of the three departments are given on

a certain day or days in the week, the second year on other days, and so on, that it greatly simplifies the arrangement of the classes in mechanical drawing.

This school also reports that in the vocational academic classes the departmental plan is working to good advantage, the work of the four grades being handled by three teachers. The vocational teachers have general exercises, literature, penmanship, civics and current events in their own classrooms, the other work being divided as follows: Mathematics, Insects & Insecticides and Rural Economics to one; Field Crops, Plant Diseases, Physics, Industrial Geography and Agricultural Botany to another, and to the third, English. Instead of the pupils rotating from class room to class room the teachers change class rooms with much less confusion and loss of time.

The Salem Indian School, Chemawa, Oregon, has this year a pupil-teacher class of ten girls, and they are an intelligent, ambitious lot of girls too. They are teaching five divisions in the primary department under the direction of a supervising teacher. They receive regular instruction in methods and elementary psychology in addition to their practice-work. When the Salem School opened last fall there was a shortage of teachers and an unusually large enrollment of primary pupils which necessitated the "drafting" of teachers from the advanced pupils of the school. While this experiment grew out of necessity it even now promises to become a regular feature of the Salem School. It is the aim to train industrial instructors as well as academic teachers and this normal course is said to be a very popular one, due largely to the fact that it trains students for a definite work. Indians, when properly trained, make excellent teachers and there is no reason why a Normal Department under the direction of a competent Normal teacher should not prove a success. At the Salem School there are a number of Alaskan pupils who are ambitious to return to Alaska and there take up teaching as an occupation among their own people, and to introduce into those schools the vocational features of our Course of Study. It would seem that the Salem School has a great opportunity to extend the influence of our Indian schools to the native schools of Alaska. We are glad to note that Salem is taking advantage of her opportunity in this respect.

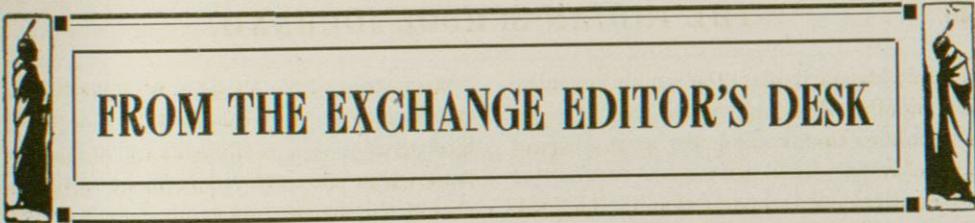
According to Dr. Charles W. Eliot, whose recent address at Carnegie Hall, New York, has caused such widespread discussion, America's post-war educational program should include the following:

1. Appropriations from Congress to help the States eliminate illiteracy.
2. Immediate expenditure by the National Government to aid States and municipalities to teach English to adults of alien birth.
3. A national program of education against venereal disease, in which all American schools shall cooperate.
4. Considerable expansion by the National and State Governments of the functions of the medical examiner, the school nurse, and the district nurse.
5. Addition to all school programs of instruction in the sciences of observation in the arts and crafts, and in the elements of music, drawing, modeling, and architecture.
6. Teaching of agriculture to be an important feature in the education of every child in both the urban and rural population.
7. Reduction in number of school periods assigned to memory subjects and to mathematics; utilization of more hours in the school day and summer vacation.
8. Better buildings; better laboratory equipment; better teachers; and more money for education.
9. Support of the National Government of better secondary schools and normal schools.
10. A complete course in physical training for every child, the National Government to plan and enforce the course and pay part of the expense.
11. Development of spirit of patriotic, cooperative service on the part of all boys and girls; "team play."
12. Conveying of fundamental religious ideas to every American child and adolescent in the schools.

PROGRESS

Eternal progress is the law of nature. No matter how battered and blood stained the traveler may be, or how low down in the Valley of Despair. Above and beyond are the everlasting mountains, their crystal summits towering to the blue heavens and beckoning upward and onward. He shall hear their call, and rising with renewed strength surmount all obstacles and achieve final victory.—A. S. AMES.

"Song forbids victorious deeds to die."



FROM THE EXCHANGE EDITOR'S DESK

"The National Builder," Chicago, Ill., is a monthly magazine containing articles on house-building, concrete work, painting, etc., which makes helpful material for instructors of classes in the building trades.

"The Building Age," published by The Architectural and Building Press, Inc., 237 West 39th Street, New York City, contains each month a fund of valuable reference material for instructors of classes in mechanic arts.

"Correct English" is the name of a very interesting monthly publication edited by Josephine Turck Baker, and published by Correct English Publishing Company, Evanston, Illinois. Teachers of English will find in this magazine many helpful suggestions and much supplementary material for class use. Send to the publishers for sample copy.

"The Survey" for January (Survey Associates, Inc., Publishers, New York City) prints, under the heading, "Pin-Money for Teaching," the following illuminating, and withal depressing, paragraph:

"Parents of children in the public schools of Philadelphia have been invited to ponder the spectacle of their teachers themselves turned pupils, and attending classes in retail salesmanship as an occupation for Saturdays and after-hours before Christmas; of teachers leaving their classrooms to become filing clerks; of 400 vacancies in the city's teaching staff; of a little girl in pig-tails set over her playmates as temporary teacher—of these and other conditions occasioned by Philadelphia's antiquated salary schedule for the instructors of its youth. If poverty makes for character, these Philadelphia teachers should be super-women. They have been caught in the plight of most salaried professional folk paying war-time prices, and they have the additional handicap of unusually low salaries."

"National Efficiency Quarterly," published by the National Efficiency Society, 119 West

Fortieth Street, New York City, in a recent issue devotes practically all if its space to the "Americanization" problem. The following editorial paragraph reflects the sentiment of an ever increasing number of educators, industrial managers and social workers everywhere:

"The knowledge of the language of America is the first step in rendering workers more efficient. The man who can understand orders will carry them out properly. He will be able to get the spirit of America, and put it into his day's work. The general training of his mind through study and reading will fit him for higher grade work and greater responsibility. This is not mere theory, but the experience of the most successful corporations in America. They conduct English classes because it pays.

DEMOCRACY IN EDUCATION

No country is a democracy that pays its teachers less than a thrift wage. No country is a democracy that does not educate all children for citizenship in a democracy. No country is educating its children for citizenship in a democracy that demands that teachers shall teach the children for the love of their children while the taxpayers spend money on limousines or Fords for their boys and on theatre tickets for wife and daughters or, what is worse, hoard it for after-death glory in promoting aristocratic scholarships.

It is hypocrisy raised to the *n*th power for the United States to plead for making the world safe for democracy "over there" without making democracy safe *over here* by giving Americans a real democracy in education.—DR. A. E. WINSAP in *Journal of Education*.

NO SUCH THING AS OVERSTUDY

There is an old notion that students have suffered, sickened, and ruined themselves by overstudy, and that the malady is widespread among the youth of the land. Parents are especially affected with this idea, and physicians have been known to express a

belief in it, particularly when in consultation with parents. Almost all teachers are shamelessly skeptical of the possibility of such a thing. If it exists the results (or possibilities) of it have been absent from their experience, and if a genuine case were produced the educational force would be a surprised people.

After long experience with students, and much observation and thought, it is not difficult to affirm that overstudy is as rare as roc's eggs. There are many things, ills, undoubtedly, that are called by that name, but when carefully considered, are really quite different and arise from wholly different causes. Overstudy—there is no such thing.—EDITH L. BOYD in *Primary Education*.

"School Life" is the official organ of the United States Bureau of Education. It furnishes to superintendents of schools, members of school boards, university, college, and normal school officers, and students of education generally current information concerning progress in education, as obtained through the Bureau's regular channels, including reports from State officials and from field workers of the Bureau. It gives summaries of all the publications of the Bureau, as well as important publications of other agencies.

Terms: Copies will be mailed free to administrative educational officials. Additional copies will be furnished to schools, single or in quantities, at 50 cents per year.

Remittances should be made to the Superintendent of Documents, Government Printing Office, Washington, D. C., and should be by cash or money order. Stamps are not accepted.

A SHOE-REPAIRING COURSE NEEDED

Another industry is calling upon the schools for help. Shoe repairing has long

been a steady and well-paid occupation, but even before the war there was a scarcity of efficient shoe repairers. Like other machine trades that have evolved from hand trades, shoe repairing has not trained men enough to keep up its own supply, not to mention its own skill. The following resolutions adopted at the annual convention of the National Leather and Shoe Finders' Association at Pittsburg in June, 1918, tells the story:

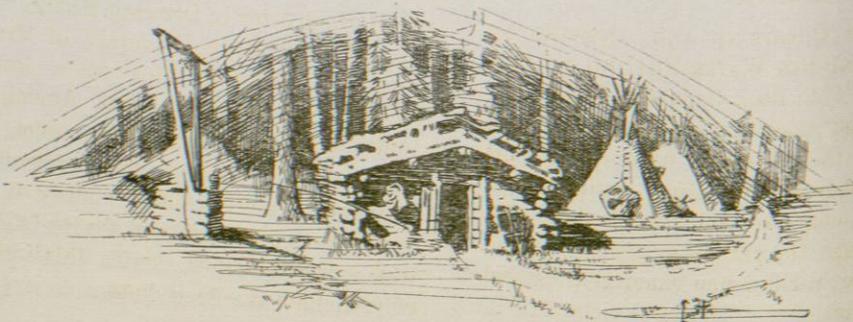
Whereas, The acute scarcity of shoes and leather in the world today, and the decreasing cattle supply caused by war demands will make it an economic necessity for years to come, to conserve leather as we have not done heretofore, and,

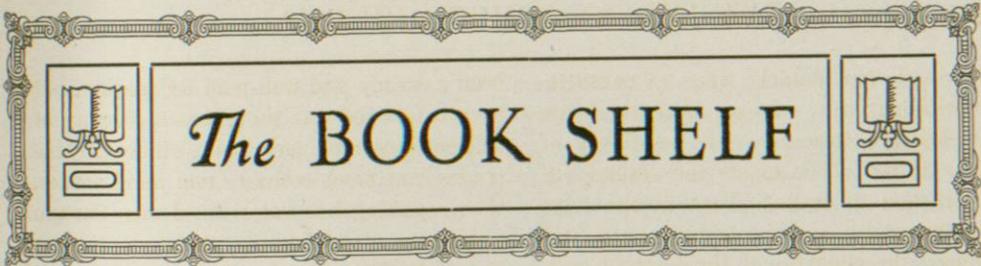
Whereas, The growing scarcity of skilled workmen to meet the increasing demand for high-class shoe repairing, causes us to appreciate the responsibility we owe the public to assist in this needed economy to our twenty millions or more families in the United States, and,

Whereas, It would train for a vocation with increasing opportunities, steady, intelligent young men, with small capital, therefore be it

Resolved, That the National Leather and Shoe Finders' Association, officially and in every way possible, through its group memberships, bring persistently to the attention of all manual training and trade schools throughout the country, the importance of adding a repairing course, where not already started.—Editorial in *Manual Training Magazine*.

The primary duty of the school teacher is to teach. He can have no excuse if, failing in this mission, he does not immediately transfer his services to some other line of useful endeavor. If the thousands of school teachers throughout the country do not understand this, they might better vie with each other in seeking positions in factories, or as book agents, or some other line of service rather than to continue to impose on parents and other members of society.—JOHN H. DAHL in *Journal of Education*.





The BOOK SHELF

ELEMENTARY FORGE PRACTICE, Stanford University Press, Stanford, California, will be found of interest and value to instructors in Forge Work.

TEACHER'S INTRODUCTION TO DEMONSTRATIONS IN WOODWORK, contains valuable information for teachers of rural schools. Write to The Manual Arts Press, Peoria, Illinois, for free copy.

TRAINING THE BOY AND TRAINING THE GIRL, by McKeever, are two excellent books published by The MacMillan Company, Chicago. Disciplinarians and Matrons in Indian Schools will find many helpful suggestions in these books.

APPLIED BUSINESS CALCULATIONS—C. E. Birch, Asst. Supt. and Principal, Haskell Institute, deals with the fundamental processes of arithmetic in a new and interesting way. Price 35 cents. Gregg Publishing Company, Chicago.

ELECTRICIAN'S WIRING MANUAL, by Frank F. Sengstock. Published by Popular Science Monthly, New York. Price \$1.50. Twenty-two chapters of practical information covering all branches of house wiring, told in simple and concise language.

HOW TO VITALIZE THE TEACHING OF AGRICULTURE IN THE RURAL SCHOOLS is a 24-page illustrated booklet published by the International Harvester Company, Chicago. This pamphlet is a part of a Teacher's sample outfit which will be sent free for two 3-cent stamps to cover the postage and packing to any teacher who asks for it. Send for a copy.

STARBUCK'S QUESTIONS AND ANSWERS ON STEAM AND HOT WATER HEATING, published by U. P. C. Book Company, New York. This book takes up systematically and concisely the subjects of boilers, flues, fuel and combustion, radiation, radiator connections, character and use of valves, pipe and fittings, the various systems of steam, hot water, vacuum and vapor heating and ventilation.

RULES OF ORDER FOR EVERYDAY USE and Civil Government Made Plain, by Henry Slade Goff. The Webb Publishing Company, St. Paul, Minnesota, price 50 cents. A popular guide for organizing clubs, societies and other organizations. It contains authentic rules of order for conducting various kinds of meetings.

A GUIDE TO LAUNDRY-WORK, by Mary D. Chambers, formerly instructor in laundry-work, Pratt Institute, Brooklyn, N. Y., is a manual for home and school, suitable for class use and as a hand-book for instructors in laundry-work in vocational schools. Published by the Boston Cooking School Magazine Co., Boston, Massachusetts. Price 75 cents.

FARM BLACKSMITHING, by James M. Drew, Instructor in Blacksmithing, School of Agriculture, University of Minnesota. Published by the Webb Publishing Company, St. Paul, Minn., price 50 cents. For schools that are being equipped for work in blacksmithing this little volume furnishes a simple yet adequate course for farm or pre-vocational students.

FORGING, by John Jernberg, Instructor in Forge Practice, Wooster Polytechnic Institute, is a manual of practical instruction in hand forging of wrought-iron, machine and tool steel, including heat treatment of steel, annealing, hardening and tempering. It contains many valuable suggestions for instructors in blacksmithing. Published by American Technical Society, Chicago, Illinois. Price \$1.00.

LAUNDRY WORK, by Juinita L. Shepperd, A. M., Instructor in Domestic Science, College of Agriculture, University of Minnesota. Price 60 cents. This book is designed especially for a school text. Among the topics discussed are laundry room and utensils, water and its uses, methods of softening water, soap, preparation for washing, removing stains, bleaching, setting and brightening colors, starch, dampening, folding and ironing.

THE ART OF HORSE-SHOEING, by William Hunting, editor of the "Veterinary Record," is a valuable reference book for instructors in blacksmithing. Published by William R. Jenkins Company, Publishers, Sixth Avenue, at 48th Street, New York. Price \$1.25.

METROPOLITAN COOK BOOK, by Lilla Firich, author of "Basic Principles of Domestic Science," is an attractive booklet of 62 pages containing valuable information and suggestions for teachers of cooking. Write to Metropolitan Life Insurance Company, New York, for free copy.

THE LANDSCAPE IMPROVEMENT OF RURAL SCHOOL GROUNDS, Bulletin No. 20, and disposal of Sewage in Rural School Districts, Bulletin No. 17, contain many valuable suggestions for Day School Teachers in the Indian Service. Free copies may be had by writing to Commissioner of Elementary Schools of California, Sacramento, California.

THE FORD CAR—ITS CONSTRUCTION, OPERATION AND REPAIR—Victor W. Pabe, is a complete practical treatise explaining the operating principles of the Ford Automobile with complete instructions for maintenance and repair. The subject is treated in a non-technical yet comprehensive manner. Published by Munn & Company, 233 Broadway, New York. Price \$1.00

TRADE FOUNDATIONS, is a pre-vocational textbook by pre-vocational and vocational directors, instructors and tradesmen for grades 7-8-9, which has just been issued by Guy M. Jones Company, Publishers, Indianapolis, Indiana. This book was designed for the "boy on the fence," to whom it is dedicated, and in addition to being a guide to choosing a vocation it is an excellent reference book, for shop and other instructors in producing industries. Price \$1.25. Write for descriptive circular.

VOCATIONAL PRINTING, by Ralph W. Polk, is a systematic compilation of fundamental principles of the art of printing. It is a new textbook covering two years work and is published by Guy M. Jones Company, Indianapolis, Indiana.

THE GARY SCHOOLS—A GENERAL ACCOUNT, by Abraham Flexner and Frank P. Bachman, is a splendid exposition of this much-talked-of educational plan. A copy will be sent to anyone sending 25 cents to the General Education Board, 61 Broadway, New York.

HAND FORGING AND WROUGHT IRON ORNAMENTAL WORK, by Thomas F. Googerty, has been published to meet the demand for an inexpensive textbook on the subject of hand-wrought ornamental iron work on the part of instructors in manual training. The book contains numerous illustrations from photographs and drawings by the author. Published by Popular Mechanics Company, Publishers, Chicago, Illinois. Price \$1.00.

BIRCH SECTIONAL WRITING CHART; a new educational device, by Principal C. E. Birch, of Haskell Institute, Lawrence, Kansas. Features that appeal: Large, plain, script letters, each on a separate card; small letters join in forming words and sentences; optional capital styles—no flourishing or shading; modified slant, great legibility, practical forms, unique illustrations. Any teacher can present any desired copy in standard invariable style. Portable wall copy-holders which can be arranged to suit convenience. Variety and freshness of copies a valuable aid in teaching primary reading and spelling. Will supplement the teaching of any system of penmanship. With Teacher's Manual it is a complete system in itself. This modern device is on the authorized list of supplies for Indian schools. Write to The University Publishing Company, Chicago, for information.



Indian Service Thrift Campaign

1919

For age and want save while you may
No morning sun lasts a whole day.

—FRANKLIN.



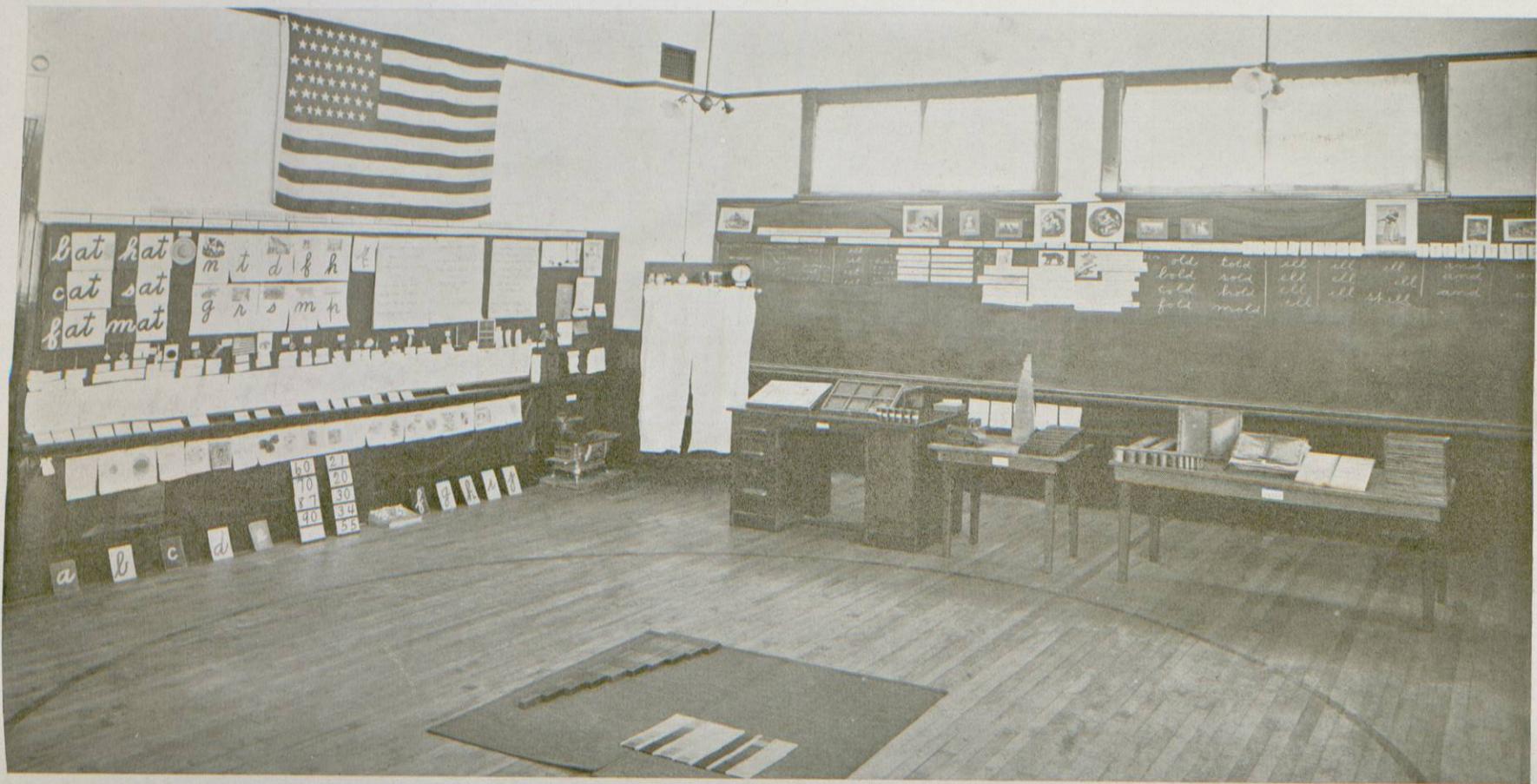
WISH to urge very special co-operation throughout the Indian Service this year with the Government's plan of continuing the sale of war savings stamps. I know of no way that we can better serve our country and ourselves, now that the call to arms is ended. There are great reconstructive expenses that no patriot would evade. No greater privilege ever came to the rank and file of our people than these investments of small savings on the easy terms provided. They should teach us the individual thrift we have long needed. They should create among the masses of our many millions the habits of forethought that would fashion us into a traditionally provident people. The opportunities coming to an uncrowded population amidst incomparable gifts of nature have saved us thus far from the dangers of lavish living. But there must come a revision of past standards of personal economy. We shall have to know more about saving. We cannot afford to have students of foreign conditions saying that the average French peasant would amass a fortune out of the back door waste of the average American family. If we get nothing from this war but the saving habit, it will be worth more than the money expended.

If you would know the value of money, go and try to borrow some.—FRANKLIN.

Our young Indians should get the meaning and worth of this truth. They should be aided to see the importance of money values, as a means to higher attainments and to personal independence.

The thing I now urge upon every Indian Service employee is to bring home to the Indians, especially the young and middle aged, the immediate and lasting benefit of savings made with a right purpose.

CATO SELLS,
Commissioner of Indian Affairs.



MONTESSORI CLASSROOM, TULALIP INDIAN SCHOOL, TULALIP, WASHINGTON
DR. CHARLES M. BUCHANAN, SUPERINTENDENT