M. Johnston

War at Last.

Europe has at last a genuine war on hand. The Greeks and the Turks are now using their guns and bayonets on each other. The conflict will doubtless be brief unless, of course, which is quite within the possibilities, other European nations are drawn into the war. Europe is an armed camp and has been for years. The "war cloud" has often been seen on the horizon, but up to the present the storm has always passed over, giving only a bad "scare" to the "concert." Nearly every nation in Europe is ready for war and it will be almost a miracle if the present trouble does not become continental. The course of events will doubtless be watched with deep interest by us all.

The Speech from the Throne.

In answer to a question in last issue in reference to legislation in the Canadian Parliament during the present session, we may say that, while there will doubtless be much attention given to the tariff and the franchise bill, the subjects of intercolonial extension, cold storage, and prohibition will be prominent matters for discussion by our legislators. The Intercolonial Railway is, as most of our readers know, a government road. It has never been a paying concern, and it is hoped that by extending it to Montreal it will have a greater chance to compete with other through lines. Then, in view of the hostile tariff of the neighboring republic, it becomes a matter of much importance to this country as to how we are to reach the English market with what are termed perishable products. It is proposed to provide cold storage accommodation at creameries, on railways, at ports, and on steamers, by which these products can be preserved at the desired temperature during the whole journey to Great Britain. In the matter of prohibition it is expected that legislation will be introduced providing for the taking of a plebiscite on the subject.

Spain and her Colonies.

It is asserted that there are unmistakable i n d i c a t i o n s that Spain is relaxing her hold on Cuba. Gen. Weyler is removing his troops from the interior of the island to the coast towns. The reinforcements he asked for, it is said, will be sent to the Philippines. The rainy season is approaching, when active operations on the part of the Spaniards must cease, and when yellow fever and other diseases will carry them off by the thousand. Besides, the recent loan is almost exhausted, and the government is at its wits' end to raise the means to supply the army with necessities. The insurrection in the Philippines has proved more stubborn than was anticipated, and Spanish statesmen see that unless they concentrate their forces they will lose both of their rebellious colonies—they must choose between Cuba and the Philippines. To add to their troubles there is no end of distress among the rural population of Spain, and Carlists and Republicans are inciting them against the government.

What's a Jingo?

Our readers have doubtless often heard the term *jingo*. Nearly every country on the globe has its quota of jingoes, sensible Canada not even excepted. The Canadian jingo holds that his country could whip the United States without half trying ; the Yankee jingo is possessed of the idea that the great American republic could wipe the British Isles off the face of the map in a twinkling. Then there are the British jingoes, the German, French, etc. The word seems to have established its place in our language so it may be well to know whence it came. The term "By jingo" is a common Basque oath, the dialect forms being Jingo, Jinco, Jainco, Gincoa, Yinco, and Yainco. The jingoes (in a strict etymological sense) are therefore the swearers, those without moderation or restraint, prone to premature explosions, boastful, vain, over-confident. After this explanation of the term, we are confident that there will be no jingoes among our readers.

Remember that you can obtain from us the past five years' examination papers for either the Entrance or the Leaving for 10 cents, or in clubs of two or more for 7 cents. Pamphlet form and subjects grouped for class use.

We are pleased at the reception of THE CANADIAN TEACHER. Subscriptions are coming from all parts of the country. We can supply copies from March 15th, 25 cents to Sept. 1, or $1 per year.

In the next issue there will appear on this page a cut of a map of the Dominion showing the new districts.

ANSWERS.

(1) Guatemala and Costa Rica. (2) See this issue. (3) By the "diamond jubilee" we mean the celebration of the sixtieth year of Victoria's reign. (4) Nearly all the St. Lawrence canals have a depth of only nine feet. (5) President Kruger is the ruler of the Transvaal Republic against which Jameson led the raid. (6) Col. Vassos is the commander of the Greek army of occupation in Crete. (7) General Gascoigne. (8) Prof. Drummond ; *Natural Law in the Spiritual World, Ascent of Man,* and *Greatest Thing in the World.* (9) Canada's regular line of connection by steamship, on the west, is from Vancouver to Japan. The C.P.R. has a line of boats on this route. (10) Canadian poets : Charles Roberts, William Kirby, Archbishop O'Brien, John Reade, Bliss Carmen, Frederick J. Scott, Pauline Johnston, Ethelwyn Wetherald, Archibald Lampman, Duncan Campbell Scott, Jas. D. Edgar, and Wilfrid Campbell. (11) George I., king of Greece, is the son of the present king of Denmark. He came to the throne of Greece in 1863. (12) The king of Greece is a brother-in-law of the Prince of Wales and uncle of the Czar.

QUESTIONS.

(1) How did King George of Greece get his crown and what nations contribute to his income as king ? (2) What is meant by the "Dingley Bill ?" (3) A Toronto merchant recently visited a European city in connection with the diamond trade. What city was he most likely to visit ? (4) What is meant by *heir apparent ? heir presumptive ?* (5) What is the debt of Cuba, its population, and its chief exports ? (6) Distinguish between a *democracy* and a *republic.* (7) Who has been named as the next governor-general of Canada ? (8) What is the public debt of Turkey and what nations are its chief creditors ? (9) Of what value is Crete to Turkey ? (10) What cities will be included in Greater New York on the passing of the bill of incorporation ? (11) Why has there been a large export of corn from the United States to Europe the past few months ?

"Good words" are reaching us daily in reference to our "History Notes." In ordering remember that we have three note books in history: " The Entrance Canadian History Notes," by G. E. Henderson, price 12 cents ; "The Entrance British History Notes," by G. E. Henderson and Chas. G. Fraser, price 15 cents ; and "The Canadian History Notes," by the same authors, price 15 cents. The last mentioned is written more in detail than "The Entrance Canadian History Notes."

Miss E. MacMath, Goderich : "Your 'History Notes' and THE ENTRANCE are used by all the members of my fourth class, by whom they are much appreciated."

The Central Business College, Toronto, gives the right kind of training for business positions, and assists its students to secure them. Unexcelled advantages. Catalogue free. Write to W. H. Shaw, Principal, Yonge and Gerrard Streets.

Geography.

SOURCES OF CANADA'S WEALTH— FISHERIES.

1. The fisheries of Canada are the most extensive in the world. The salt water inshore fisheries cover 15,000 square miles, and the fresh water fisheries 36,350 square miles. The value of the products of the fisheries is $23,000,000 per annum.

2. The salt water fish in order of total value are : Cod, herring, lobsters, mackerel, salmon, haddock, sardines and oysters.

The fresh water fish are : Whitefish, salmon-trout, herring, sturgeon, bass, pickerel.

3. Engaged in the fishing industry are 70,719 men using boats, nets, and other gear valued at $9,439,116.

4. To preserve the fisheries protective laws have been passed and the government have established a lobster hatchery at Bayview, N.S., from which 168,200,000 young lobsters were distributed to stock the Canadian waters. We have also 13 fish hatcheries from which 125,840,000 young salmon, trout, whitefish and salmon-trout have been sent and planted in our lakes and rivers. The work of restocking the oyster beds at Shediac, N.B., and Tracadie, N.S., is also being carried out ; in 1895 there were planted 168 barrels of oysters in Nova Scotian waters.

5. Our lake fisheries are the most extensive in the world and employ 4,155 men. They are carried on by hoop-nets, gill nets, pound-nets and seines. British Columbia canned $2,366,000 worth of salmon in 1894.

6. The product of our fisheries is exported to the following countries : United States, $3,054,-000 ; Great Britain, $2,981,000 ; British West Indies, $1,206,000 ; Spanish West Indies $1,098,-000 ; Brazil, $585,000 ; British Guiana, $210,000 ; France, $109,000 ; Italy, $34,000.

GOVERNMENT.

A government administered by representatives elected by the people is called a Republic. When the people directly make the laws the government is called a Democracy. When the government is entirely in the hands of a single ruler it is called an Absolute Monarchy. Examples of these : The United States, Ancient Greece, or town meeting, Russia.

A warden is appointed by vote of the county council each year. A sheriff is appointed by the local government and holds office until removed by the same authority. A judge is appointed in our

country by the governor-general with the advice of his cabinet, in other words, by the Dominion government; he holds office for life and good conduct. A mayor is elected by the electors of a town or city each year. A school inspector is appointed by the county council and holds office until removed by the same authority. A premier is chosen by the governor-general or the lieutenant-governor, as the case may be. (Pupils probably know that the term "premier" is given to the *leader* of either the Dominion or Provincial governments). He holds his position as long as his party outnumbers the "opposition" in the house. A lieutenant-governor is appointed by the governor-general with the advice of his cabinet, or as we usually say, by the Dominion government. He holds office for five years. A governor-general is appointed by the British Sovereign with the advice of the ministry, that is, by the British government. His term of office is five years.

Drawing.

BY A. C. CASSELMAN (NORMAL SCHOOL, TORONTO).

We give below the paper set at the Entrance examination of 1896. The answers will appear in our next issue. Our young readers will give the best answers to the questions themselves, and compare their work with that published in the next number.

We have had several communications in reference to drawing for the third and primary or first book classes. From conversation with the editor of THE CANADIAN TEACHER we can assure our friends that the needs of the profession will be fully met in the enlarged paper of next year.

1896.

Examiners { D. ROBB.
{ J. J. CRAIG, B.A.

NOTE.—*Rulers not to be used.*

1. Draw a doorway with a panel door partly opened outward. The drawing to be four inches high, and of proportionate width.

2. Draw a common water-pail lying on its side on the ground below your line of vision, with the bottom turned towards you.

3. Draw a square the side of which is three inches long. Draw diagonals. Then divide the square into nine equal squares by means of horizontal and vertical lines; and draw as large a circle as possible in each of the small squares having no diagonals; and finally join the centres of these circles by means of six straight lines.

Values : 1. 9 ; 2. 8 ; 3. 8.

ANSWERS TO LAST ISSUE.
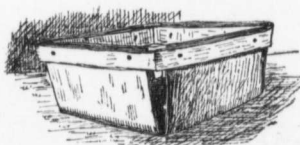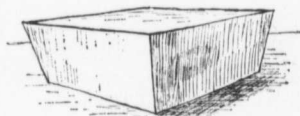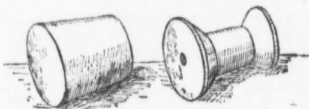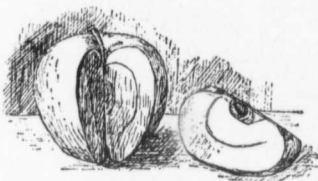
Our young readers will be anxious to know something about THE ENTRANCE for next year. Space will not permit us to give even an outline of the changes to be made. We can tell them, however, that THE ENTRANCE will be enlarged to a sixteen-page paper. There will be two editions as at present—the fourth class and the fifth class, or leaving edition. Each edition will contain sixteen pages, of which *twelve* or *more* will be devoted to reading matter. We say *more* because we do not know where we shall stop. We are building for a perfect paper, and if it requires the whole sixteen pages to carry out our plans we intend to use them. Advertising will be a secondary consideration with us in our work for next year.

E. J. A. Johnston, Nobleton, says : "Am now using over two dozen of your "Canadian History Notes," and pupils are making excellent progress in the subject. They are just the thing for busy teachers."

M. A. Fraser, Combermere, sends along a good order and says : "Find your paper helpful and your notes complete. Shall likely send you further orders."

Central Business College, Stratford, Ont. A popular school. Students may enter at any time. Circulars free. W. J. Elliott, Principal.

P. S. Leaving Literature.

THE REVENGE.

• The historical basis of this ballad is found in an incident which occurred in 1591, during the reign of Elizabeth. She had fitted out seven ships under Lord Thomas Howard with Sir Richard Grenville as second in command to intercept the Spanish treasure ships on their way from the West Indies. Philip of Spain, however, hearing of their intention, sent a fleet of fifty-five sail to guard the treasure ships ; and Lord Howard not daring to meet such fearful odds, returned with six of his vessels to England. This left Sir Richard Grenville with one ship to do battle with the entire Spanish fleet. The best account of this exploit is found in Hakluyt's *voyages*. The following is an abridgement of his narrative as given by Hume :

" Sir Richard Grenville was engaged alone with the whole Spanish fleet of fifty-three sail, which had ten thousand men on board ; and from the time the fight began, which was about three in the afternoon, to the break of day next morning, he repulsed the enemy fifteen times, though they continually shifted their vessels, and boarded with fresh men. In the beginning of the action he himself received a wound, but he continued doing his duty above deck, till eleven at night when, receiving a fresh wound he was carried down to be dressed. During this operation he received a shot in the head, and the surgeon was killed by his side. The English now began to want powder ; all their small arms were broken or become useless ; of this number, which were but a hundred and three at first, forty were killed, and almost all the rest wounded ; their masts were beat overboard, their tackle cut to pieces, and nothing but a hulk left, unable to move one way or another. In this situation Sir Richard proposed to the ship's company to trust to the mercy of God, not to that of the Spainards, and to destroy the ship with themselves, rather than yield to the enemy. The master gunner, and many of the seamen, agreed to this desperate resolution ; but others opposed it, and obliged Grenville to surrender himself prisoner. He died a few days after; and his last words were : ' Here die I, Richard Grenville, with a joyful and quiet mind ; for that I have ended my life ss a true soldier ought to do, fighting for his country, queen, religion, and honor ; my soul willingly departing from this body, leaving behind the lasting fame of having behaved as a valiant soldier is in duty bound to do.' The Spaniards lost in the sharp, though unequal action, four ships and about a thousand men. And Grenville's vessel perished soon after with two hundred Spaniards in her."

EXPLANATORY NOTES.

STANZA I.

A Ballad. That is, a short poem, containing an account of some heroic, tragic or touching event, developed by strong and abrupt strokes.
The fleet. The royal navy.
At Flores in the Azores. One of the nine islands comprising the group. The Azores are a group of islands lying in the Atlantic off the coast of Spain and in the direct path of vessels from the West Indies.
A pinnace. A small, two-masted, schooner-rigged vessel.
Notice the alliteration and the simile in the second line. The schooner with all its white sails set is fittingly compared to a bird with out-spread wings.
In line 3 we have a strong onomatopoetic effect. Tennyson evidently hears this signal given by a speaking trumpet. In fact—it would now be transferred by signal flags. Read it aloud and catch the sound of the "trumpet's warning voice."
Out of gear. Not supplied with proper requisites.
Ships of the Line. The larger war ships. Notice in Lord Howard's speech the way in which the great haste of preparation is suggested by the short, abrupt phrases. Read it aloud to appreciate this. Contrast this with, "and the sun went down," etc., on page 375.

STANZA II.

You fly them for a moment to fight with them again. It was no sign of cowardice on the part of Lord Howard to retreat before such odds ; it was his duty to save his six English ships to fight the Spaniards again.
These inquisition dogs and the devildoms of Spain. Permanent courts of inquisition for *inquiring into* offenses against the Church had existed since 1248, but the supreme general court of inquisition was established in 1484, in Seville, by the celebrated Queen Isabella, and the infamous Thomas de Torquemada was made the first inquisitor-general. He alone is said to have burned 9,000 heritics. Read Longfellow's "Torquemada" in the "Tales of a Wayside Inn." The inquisition was abolished by Napoleon in 1808, restored in 1814, and finally abolished in 1820. Tennyson pictures strongly the intense horror and passionate hate with which the British sailor regards these "Devildoms of Spain.

STANZA III.

Past away. Past is archaic for passed. We can justify its use here since Tennyson is imitating the old ballad style.
Notice the great beauty in the line, "Till he melted like a cloud in the silent summer heaven." The white sails as they floated farther and farther away appeared as the light fleecy clouds of summer resting on the horizon.
Notice the sympathy and care shown by Sir Richard in his treatment of the sick men. This made them love the old " lion of England."
Bideford in Devon. Many of England's greatest sailors had come from Devon and Cornwall.
Ballast. A load placed in the stern of a ship to raise the bow in the water.
To the thumbscrew and the stake for the glory of the Lord. Notice the fine contempt in the phrase, "for the glory of the Lord." The Spaniards thought they were glorifying God when submitting others to the cruelty of the "thumbscrew" and the "stake."

STANZA IV.

With his huge sea-castles heaving on the weather bow. Sea-castles. Many of the Spanish vessels were four-deckers, a disadvantage in fighting with smaller ships, as the cannon balls would pass harmlessly over the lower ship. "Heaving on the weather bow." What an expressive picture? We see the Spanish vessels rising and falling on the rolling waves. Weather bow, the direction from which the wind was blowing.

We be all good Englishmen. The colloquial form of expression in Devonshire.

Seville. The old capital of Spain, the site of the inquisition.

Don or devil. Notice the alliteration. Don was originally a Spanish title of nobility, now used as a synonym for Spaniard.

STANZA V.

Sir Richard Spoke—hurrah. A very fine climax.

Sheer into the heart of the foe. Straight into the midst of the Spanish fleet.

Long sea lane. What a melodious phrase. Repeat it aloud. The open sea between the Spanish vessels like a lane between fences.

Thousands of their soldiers. Notice the repetition of the word "thousands." This repetition of a word or words at the beginning of successive clauses, members, or sentences is called Anaphora, ăn-ăf'-ō-ra. You will notice how it imparts singular dignity to the passage.

Mountain-like "San Philip." A poetic exaggeration, hyperbole. Hī-pĕr'-bō le.

Yawning tiers of guns. The cannon, the mouths of which could be seen from the port-holes, are said to yawn. How forcible it makes the passage to thus speak of the cannon as if alive and yawning to swallow their prey! This is again used in "breath," in the next line, where the little vessel is made instinct with life and said to be breathing through her sails.

STANZA VI.

Hung above us like a cloud. Compare and contrast this with the cloud in stanza 3; the one about to burst in thunder on their heads, and the other gently floating away.

Galleons. A four-decked, armed merchant vessel.

Larboard and starboard. Larboard, on the left hand; starboard, on the right hand, as one stands facing the bow of the ship.

Battle thunder. Roar of cannon. What a fine figure of a storm there is in this stanza! Notice "hung," "cloud," "thunderbolt," "battle-thunder."

STANZA VII.

Having that within her womb. This may mean that the *San Philip* was the magazine ship, and carried the powder; but more probably she was so riddled by cannon balls, on or below the water line, that she was beginning to fill with water.

Came aboard us. Boarded us, that is, the Spanish sailor climbed into the *Revenge*, and fought the British sailors hand to hand on her decks.

Musqueteers. Musketeer. A soldier armed with a musket.

As a dog that shakes his ears. This is a very effective simile; but you will notice the only point of similarity between the British sailors and the dog is the contempt with which the actions are performed.

STANZA VIII.

The next stanza is very beautiful. What a graphic picture of the action is given us! Notice the beauty of the alliteration and rhythm in the first line. Notice also the stately dignity secured by the anaphora in lines 3, 4, and 5. And, last, do not miss noticing the fine climax; commencing with the smiling calm of the sunset, and passing on through the ever-heightening horrors of the scene to close with the wild defiance and desperate resolve of the thrice wounded British Lion.

Her dead and her shame. Shame because fifty-three could not conquer one.

Grisly wound. Horrible wound.

(To be continued.)

QUESTIONS TO BE ANSWERED IN OUR NEXT.

1. Write the story in your own words, reproducing the spirit of the original.

2. What does the poem itself reveal of the person who is supposed te give utterance to the lines?

3. What marks of the "ballad style" do you observe in the poem?

4. Show, giving examples, how the poet has given force and beauty to the poem.

Grammar.

THE FOLLOWING QUESTIONS WILL BE FULLY ANSWERED IN OUR NEXT ISSUE.

'When here with Carthage Rome to conflict came,
An earthquake, mingling with the battle's shock,
Checked *not* its rage ; *unfelt* the ground did rock,
Sword dropped not, javelin kept its deadly aim,—
Now all is sun-bright peace. Of that day's shame,
Or glory, not a vestige seems *to endure*,
Save in the Rill, that took from blood the name
Which yet it bears, *Sweet Stream! as crystal* pure.
So may all trace and sign of deed *aloof*
From the true guidance of humanity,
Through *Time* and Nature's influence, purify
Their spirit; or *unless* they for reproof
Or warning serve, thus let them all, on ground
That gave them *being*, vanish to a sword."

1. Write in full the several dependent clauses, state their relation, and classify.

2. State the relation and the grammatical function of the italicized words.

ANSWERS TO QUESTIONS IN OUR LAST ISSUE.

(a) As one who *walking* in a forest sees
A lovely landscape through the *parted* trees,
Then sees it not for boughs that intervene ;
Or, as we see the moon sometimes *revealed*
Through drifting clouds, and *then* again concealed,
So I behold the scene.

(b) *Go.* ask the infidel what *boon* he brings us,
    What charm for aching hearts he can reveal,
    Sweet as that heavenly promise Hope sings
        us,
        " Earth has no sorrow that God cannot
        heal."

ANALYSIS.

Extract (a) is a complex sentence consisting of one principal clause and five subordinate clauses.
1. Clause—All of extract (a).
Kind and connection—Principal assertive.
2. Clause—
" As one (beholds the scene) who walking in a
    forest sees
A lovely landscape through the parted trees,
Then sees it not, for boughs that intervene."
Kind and connection—Adverbial of manner, modifying " behold."
3. Clause—
" Who walking in a forest sees
A lovely landscape through the parted trees."
Kind and connection—Adjectival, restrictive, modifying " one."
4. Clause—(" And who) then sees it not, for boughs that intervene."
Kind and connection—Adjectival, restrictive, modifying " one "; and co-ordinating copulative with clause (3).
5. Clause—" That intervene."
Kind and connection—Adjectival, restrictive, modifying " boughs."
6. Clause—
" Or, as we see the moon sometimes reveal'd
Through drifting clouds, and then again concceal'd."
Kind and connection—Adverbial of manner, modifying " behold " ; and co-ordinating, alternative with clause (2).

Extract (b) is a compound complex sentence consisting of two principal clauses and six subordinate clauses.
1. Clause—" (You) go."
Kind and connection—Principal imperative.
2. Clause—
" (You) ask the infidel, what boon he brings us,
What charm for aching hearts he can reveal,
Sweet as that heavenly promise hope sings us,
Earth has no sorrow that God cannot heal."
Kind and connection—Principal imperative.
3. Clause—" What boon he brings us."
Kind and connection—Substantive, direct object of " ask."
4. Clause—
" What charm for aching hearts he he can reveal,
Sweet as that heavenly promise hope sings us,
Earth has no sorrow that God cannot heal."
Kind and connection—Substantive, direct object of " ask."
5. Clause—As that heavenly promise hope sings us (is sweet)."
Kind and connection—Adverbial of degree, modifying "sweet."
6. Clause—" That hope sings us."
Kind and connection—Adjective, descriptive, describing " promise."

7. Clause—" Earth has no sorrow that God cannot heal."
Kind and connection—Substantive, in apposition with " promise."
8. Clause—" That God cannot heal."
Kind and connection—Adjectival, restrictive, modifying sorrow."

PHRASES.

1. Phrase—In a forest.
Kind and relation—Adverbial of place, modifying " walking."
2. Phrase—Through the parted trees.
Kind and relation—Adverbial of place, modifying " sees."
3. Phrase—For boughs that intervene.
Kind and relation—Adverbial of cause, modifying " sees."
4. Phrase—Through drifting clouds.
Kind and relation—Adverbial of place, modifying " see revealed."

PARSING.

1. *Walking.* Relation—" Who walking."
Kind—The imperfect participle of the verb *to walk.*
2. *Parted.* Relation—" Parted trees."
Kind—The perfect participle of the verb *to part.*
3. *Or.* Relation—" (Beholds) or sees."
Kind—Conjunction, co-ordinating, alternative.
4. *As.* Relation—" Behold as see."
Kind—Conjunction, subordinating adverbial of manner.
5. *Reveal'd.* Relation—" Moon reveal'd."
Kind—The perfect participle of the verb " *to reveal.*"
6. *Then.* Relation—" Then concealed."
Kind—Adverb of time, simple.
7. *Go.* Relation—" (You) go."
Kind—Verb, finite, intransitive, irregular, active, simple.
8. *Boon.* Relation—" Brings boon."
Kind—Noun, common, abstract, simple.
9. *Sweet.* Relation—" Charm sweet."
Kind—Adjective, qualifying, appositive, restrictive, simple.
10. *As.* Relation—" Sweet as (is sweet)."
Kind—Conjunction, subordinating adverbial of " degree."

FULL PARSING.

1. *Sees.* Relation—" Who sees."
    Classification—A verb, transitive, finite, active, strong, simple.
    Inflection — Third person, singular number, indicative mood, present tense.
    Function—Used to make an assertion about " who."
2. *That.* Relation—" That intervene."
    Classification—Relative pronoun, simple.
    Inflection—Plural number, nominative case.
    Function—Used subjectively as the subject of " intervene."
3. *Concealed.* Relation—" Moon conceal'd."
    Classification—A perfect participle.
    Function—Used as the objective complement of the verb " see."
4. *That.* Relation—" That promise."

...n — A demonstrative, pronominal
...e, simple.
...ion—Singular number.
...nction—Used attributively to modify "promise."

5. *Promise.* Relation—" Promise is sweet."
Classification — A noun, common, abstract, simple.
Inflection—Singular number, nominative case.
Function—Used abverbially as subject of " is sweet."

6. *Us.* Relation—" Sings us."
Classification—A personal pronoun, simple.
Inflection—First person, plural number, objective case.
Function—Used objectively as the indirect object of " sings."

7. In line (2) " can " is used as an auxiliary.
In line (4) " can " is used independently.
See H.S.G., chap. viii., sec. 138.

Algebra.

EXERCISE I.

Factor the following :

1. $20x - 4.$
2. $x^2 - 18x + 45.$
3. $12x^2 + x - 1.$
4. $acx^2 + adx - bd.$
5. $a^3x - a^2bx - 6ab^2x.$
6. $2x^2 + 9x + 4.$
7. $3x^4 - 16x^3 - 12x^2.$
8. $4x^3 - 3x^2 - 24x - 9.$
9. $12x^3 - x^2 - 30x - 16.$
10. $x^3 - 2x^2 - 13x - 10.$
11. $x^3 - 5x^2 - 99x + 40.$
12. $x^3 + 2x^2 - 8x - 16.$
13. $x^3 + 4x^2 - 5x - 20.$
14. $x^3 - x^2 - 5x - 3.$
15. $x^3 + 3x^2 - 8x - 24.$
16. $a^3 - 5a^2x + 7ax^2 - 3x^3.$
17. $x^4 + x^3 - 3x^2 - x + 2.$
18. $2x^3 - 5x^2 + 11x + 7.$
19. $6x^3 - 3x^3 - x^2 - x - 1.$
20. $3x^3 - 3ax^2 + 2a^2x - 2a^3.$

EXERCISE II.

1. $x^4 + ax^3 + a^3x + a^4.$
2. $4x^3 - 10x^2 + 4x + 2.$
3. $x^3 + 3x^2 - 4.$
4. $729x^6 - y^6.$
5. $10x^2 + 79x - 8.$
6. $3x^3 + 6x^2 - 189x.$
7. $a^3 - 8b^{15}.$
8. $x^4 - x^2 + 2x - 1.$
9. $m^3 - n^3 - m(m^2 - n^2)$
   $+ n(m - n)^2.$
10. $2x^3 + 7ax^2 + 4a^2x - 3a^3.$
11. $a^3 + 2a^2 - 13a + 10.$
12. $4x^4 + 11x^2 + 25.$
13. $1 + 2x^2 + x^3 + 2x^4.$
14. $x^3 - 5x^2 + 7x - 3.$
15. $3a^3 - 3a^2b + ab^2 - b^3.$
16. $5x^2 + 11x + 2.$
17. $60x^2y + 32xy + 4y.$
18. $x^4 + a^2x^2 + a^4.$

EXERCISE III.

1. Find two factors of $x^{3n} - y^{3m}$ where m and n are positive integers.
2. Write the quotient of $16 - 81a^4$ divided by $2 - 3a$.
3. Find two factors of $x^3 - y^3 + 1 + 3xy$.
4. Prove that
   $a(a + 1)(a + 2)(a + 3) + 1 = (a^2 + 3a + 1)^2.$
5. Divide
   $(ac + bd)^2 - (ad + bc)^2$ by $(a - b)(c - d)$.
6. Find the product of
   $m - n - p - q$ and $m + n + p + q$.
7. Find the difference between the squares of 3503 and 3497.
8. Multiply the square of the sum of the cubes of a and b by the cube of the sum of their squares.

9. Find the square root of
   $(x^2 - 3x + 2)(x^2 - 4x + 3)(x^2 - 5x + 6).$

10. Find a number such that if three-eighths of it be subtracted from 20, and five-elevenths of the remainder from one-fourth of the original number, 12 times the second remainder shall be one-half the original number.

11. A farmer bought a certain number of sheep for £57. Having lost eight of them, he sold the remainder at 8s. a head more than they cost him, in order to make up the deficiency. How many did he buy ?

12. A merchant bought some pieces of silk for $221. Had he bought 4 pieces more for the same money, he would have paid $4 less for each piece. How many did he buy ?

13. A father gave his son a certain sum, telling him that at the end of every year he would give him as much as he then had left ; the son spent $100 a year, and at the end of 4 years had nothing left. How much did he receive at first ?

Bookkeeping.

EXERCISE VI. IN APPENDIX TO H. S. B-K. PAGE 215.

TO BE FULLY ANSWERED IN OUR NEXT BY SINGLE ENTRY.

1896.

April 15.—Commenced business, investing as follows : Cash on deposit in Bank of Commerce, $1,000. Goods in stock, $600. Rent for ½ month paid in advance, $16. Office furniture on hand, $40. I owe C. H. Laidlaw, on account, $25.

April 16.—Bought of Turner & Sons, Toronto, goods as per invoice No.—, $160. Remitted in payment a draft purchased per cheque. Exchange 25c. Paid freight per cheque, $10. Cash sales, $42.30.

April 17.—Sold C. H. Laidlaw on account, 15 yds. Can. tweed, at $1.20 ; 5 yds. velvet, at $1.70. Deposited in bank, cash, $20. Paid cash for stationery, $2 10. Cash sales, $38.75.

April 18.—Sold M. Langham 100 yds. ¾ sheeting, at 30c. ; 25 yds. farmer's satin, at 50c. Received in payment an order on A. H. Wilson, which Mr. Wilson accepts. Cash sales, $19.90.

April 21.—Deposited in bank, cash, $25. Paid cash for coal oil, $1.20. Cash sales, $25.65.

April 22.—Lent K. L. Gibson cash, $15. Gave General Hospital, per cheque, $7.50. Cash sales, $32.90.

April 24.—Bought of Caldwell & Co., Hamilton, on my acceptance, at 30 days, payable at the Bank of Montreal, goods as per invoice No.—, $80. Paid freight per cheque, $2.30. Cash sales, $25.

April 25.—A. H. Wilson settled his account in full with his note at 10 days payable at the Bank of Commerce. Cash sales, $42.60.

April 27.—Sold S. W. Perry, 120 yds. English tweed, at $1.40. Received in payment his cheque on Bank of Ottawa for $100, the balance on account. Cash sales, $19.75.

April 29.—Deposited in bank, cash, $30. Paid cash for delivering goods, $1.20. Cash sales, $27.85.

April 30.—Paid clerk's salary per cheque, $30. Inventories, April 30.—Goods on hand, $367.85; office furniture on hand, $38.50.

In answer to J. F. and to E. L. regarding the net loss in the book-keeping set published on March 15th : You will see that we invested $684.25, and owed Turcotte $21, making a net worth of $663.25 on May 1st, but of this on May 7th we purposely gave away $5 ; this, therefore, cannot be considered as a loss, but as a withdrawal, leaving $658.25 of our original capital in the business. Now from our statement of assets and liabilities we find we are worth, on May 13th, $558.31. If we had neither gained nor lost we should have still had $658.25, therefore we conclude the net loss is $658.25 − $558.31 = $99.94. Your difficulty must be in not entering the $5 withdrawn in your Day Book, and therefore not carrying it to your stock account as a withdrawal, but treating it the same as the $5 which was loss, which is evidently wrong.

Arithmetic.

1. A riding a 24-inch wheel, B a 26-inch wheel, and C a 28-inch wheel, found that after riding together a certain distance each wheel had made a certain number of complete revolutions. How far had they ridden ?

2. On a hypotenuse 6 feet long it is desired to construct a right-angled triangle whose perpendicular and base are equal. Find the length of the base.

3. The difference in interest between a $600 loan at 6 per cent. per annum and a $750 loan at 5 per cent. per annum for the same time is $1.05. Find the time.

4. An article listed at $25 and bought subject to trade discounts of 20 per cent., 10 per cent., and 5 per cent., was sold for $22.23. Required the per cent. of gain on the investment.

5. A speculator purchased 100 shares of Adams express stock at 150, brokerage ⅛ per cent., held the shares until a quarterly dividend of 2 per cent. was declared and received, and then sold at 149⅛, brokerage ⅛ per cent. How much was his gain by the transaction ?

(Remaining papers crowded out.)

Euclid.

1. Define *point*. What positive property has a point? What has it not? Could any number of points placed side by side form a line? Explain.

2. Define *line*. What positive properties has a line? What has it not? Could any number of lines placed side by side form a surface? Why? Is the mark made by a pencil on paper a line? Explain.

3. Define *straight line*. Can you draw two lines which intersect each other in two points? Can two straight lines be so drawn? Can two straight lines enclose a space? Hence infer a definition of a straight line. Give Euclid's definition.

4. Define *superficies or surface*. What positive properties has a surface? What has it not?

Could any number of surfaces place. another form a solid? Explain.

5. Define *plane surface*. Strictly spea. any plane surfaces exist? Name surfaces w. we may speak of as plane surfaces. Name some some which we may not speak of as plane surfaces. If a straight line be drawn on a plane surface and then produced, where will the produced part lie? Would it be possible to draw a straight line on a surface that is not plane? If so, give an example.

5. Define *angle*. What are the arms of an angle? What is the vertex of an angle? On what does the size of an angle depend? Draw diagrams to show that the size of an angle does not depend in any way on the length of the arms. Name, in all the ways possible, the angles in the figures given below.

Fig. 1.   *Fig. 2.*   *Fig. 3.*
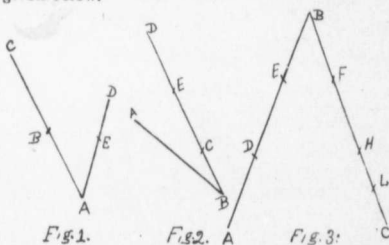
Is the angle ABC, in Fig. 3, larger than the angle EBF in the same figure? Do you increase the size of an angle by producing the arms? Draw two equal angles with unequal arms. Draw two unequal angles with equal arms. If the two arms of an angle are respectively equal to the two arms of another angle, are the two angles necessarily equal? What do you mean by a rectilineal angle? What is the opposite to a rectilineal angle called?

6. Define *right angle* and *perpendicular*. If two adjacent angles are equal, must they necessarily be right angles? Draw a figure to illustrate your answer. What do you mean by the sum of two angles, by the difference of two angles, by the bisector of an angle?

7. Define *acute*, *obtuse*, *adjacent*, *vertically opposite* angles.
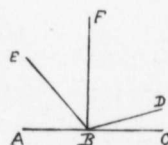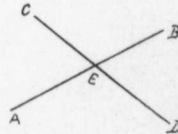

Fig. 1.   *Fig. 2.*

Name in the figures above all the right angles, all the obtuse angles, all the acute angles, all the adjacent angles, all the vertically opposite angles, any bisector of an angle, any perpendicular, any angles which are the sum of two other angles, and any angles which are the difference of two other angles.