

## ELEMENTARY SCIENCE SECTION

### COFFEE

TOWARD the end of the third century some monks, fleeing from persecution, found refuge in the highlands of Abyssinia. This ancient country is in north-eastern Africa across the Red Sea from Arabia. The monks supported themselves in Abyssinia by tilling the soil and raising flocks of sheep and goats.

One night one of the good fathers whose turn it was to watch the herds came running to the monastery, pale and trembling.

"The animals are bewitched," he panted. "They jump and play as if it were a bright, cool morning."

"Peace, my son; you have been dreaming," said the father superior. "Rest here and I will go and look at the flocks."

But he, too, found the animals jumping and playing in the moonlight instead of sleeping as they should. Night after night this continued.

By observing what plants the animals fed on, the monks were at last convinced that the sleeplessness and the playing of the sheep and goats were due to their eating the leaves and fruit of a certain unfamiliar shrub which grew there in profusion. Picking some of the ripe fruits, one of the monks chewed the seeds,

and found that he, too, felt very much refreshed and was wakeful that night.

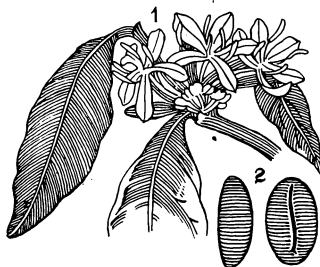
Thus coffee was discovered, according to one of the many legends which the Arabs tell. However fanciful the story may be, the fact remains that Abyssinia and Arabia were the original homes of the coffee plant. We also know that by the 15th century pilgrims to Mecca, the holy city of Arabia, used a drink made from the roasted coffee bean in order to prevent sleepiness during the long religious services of the Mohammedan religion.

From Arabia the practice of drinking coffee passed to Constantinople (now called Istanbul), a city in Turkey, then to Venice in Italy, and then to England, France, and other European countries.

Until the end of the 17th century all the coffee of commerce came from Arabia, being shipped from the city of Mocha on the Red Sea. The Dutch were the first to cultivate coffee in countries of which the plant is not native. In about 1690 coffee seeds were taken to Java, the most important island in the Dutch colonial possessions in the East Indies. These seeds were planted in Java and produced fruit. Soon cof-

(Please turn to page 257.)

### THE COFFEE PLANT



1. Flowers  
2. Seeds  
and Leaves

## SYMPHONY ORCHESTRA

*(Continued from page 244)*

sued to dreamy, melancholy music. It has all the reediness and tender expressiveness of the oboe. While it is sometimes used to express the joys of the pastoral life, there is always a suggestion of sadness and loneliness in its voice.

While playing the English horn, the player must hold his breath under great control. This produces considerable tension in the lips, lungs, and chest. Therefore the English horn, like the oboe, is a difficult instrument to play.

*The Clarinet*

The clarinet (illustrated on page 243) has been called "the queen of the woodwind" because it is capable of doing many things.

It is a single-reed instrument about two feet long.

Much has been said in praise of the tone quality of the clarinet, which has been described as noble, refined, mellow, lonely, weird, and somber. It is the dramatic soprano of the woodwind section.

The modern symphony orchestra usually employs two clarinets, although more are sometimes used.

*The Bass Clarinet*

By looking carefully at the picture of the bass clarinet (page 243) you will notice that it is larger than the clarinet. For this reason it can play lower tones than the clarinet can play.

The bass clarinet looks something like a saxophone, which is made of metal and does not have such a good tone as the bass clarinet has.

The bass clarinet is made of wood, and its voice is powerful and reedy. It sounds like the lower tones of a pipe organ.

*The Bassoon*

The bassoon (illustrated on page 243) is a double-reed instrument which plays the bass (the lowest part) for the woodwind choir. It is a large instrument. It has been called "the clown" of the orchestra, because it can play in a grotesque manner.

There are usually two bassoons in the orchestra, but sometimes more are used.

*The Contrabassoon*

By looking at the picture of the contrabassoon (page 243) you will notice that it is larger than the bassoon. Because it is larger, it can play lower tones. Al-

## COFFEE

*(Continued from page 246)*

fee was cultivated in other tropical countries of Asia and South America.

The varieties of coffee which have been permitted to grow wild are 20 feet or more in height, but the cultivated bushes are kept trimmed to 6 or 10 feet, so the berries may be picked more readily.

The leaves of the coffee plant are green and glossy on the upper surface. The flowers are white and sweet-scented. The fruit is of an oval shape and of a dark-red color when ripe. Each fruit contains two cells, and each cell has a single seed which is the coffee as we see it before it is roasted. (See the illustration on page 246.)

Great attention is paid to the culture of coffee, especially in Arabia. The  
*(Please turn to page 259.)*

---

though it has a different appearance, it is played like the bassoon. A bassoon player in the orchestra usually plays the contrabassoon when it is needed.

Next month we shall discuss each of the instruments of the brasswind section.

*(Please turn to page 260.)*

## THE OLDEST CHURCH

*(Continued from page 242)*

brought from China leads one to the second floor. The stair-case is worth seeing, as are also some of the numerous paintings which hang in the church and convent.

In the upper part of the convent is a library. The British, during the invasion of 1762, are charged with having carried away a number of the rarest books and the most important documents and manuscripts, so that at present only a few valuable books and manuscripts remain in the library.

There are numerous other rooms and corridors in the church and convent, such as the recreation hall, cloisters, a private chapel, the dining room, etc. One may descend by a curious circular stairway to the former dispensary and storehouse and the old dining room with its unique decorations on the ceiling.

The convent was designed by the same great architect, Herrera, who designed the church, but his plans were not entirely followed, and many minor changes and additions have been made during the intervening centuries.

## COFFEE

*(Continued from page 257)*

shrubs are raised from seed sown in nurseries, and afterwards planted in moist and shady places on sloping ground. Care is taken to plant the shrubs so that at certain seasons the roots will be constantly surrounded with moisture.

When the fruit is ripe a cloth is placed under the tree and the fruits are shaken down. Then the berries are placed on mats and dried in the sun. The husk is later removed by heavy rollers.

The best coffee comes from Mocha, but Java and Central America also produce large quantities of excellent coffee. Brazil in South America grows abundant crops — more than any other country. Coffee is also grown in the Philippines to some extent.

It has been estimated that the world's supply of coffee is more than two billion pounds a year. The

Anyone who will take the time to be shown through this noble edifice by one of the accommodating fathers in charge will find a visit to the Church of Saint Augustine, oldest church in the Philippines, to be most interesting.

greatest coffee-consuming countries are the United States and the countries of northern Europe.

The refreshing action of coffee is produced by a drug called caffeine (pronounced caf-een). The pleasant smell is produced by an oil which is largely developed by the roasting process.

Coffee is an important article of commerce. The coffee exported each year from Brazil alone is valued at more than 500 million pesos.—*Adapted from the Concise and the Compton Encyclopedia.*

## STORY OF A FAILURE

*(Continued from page 250)*

having always followed the dictates of his conscience and of having always done his best?

Thus lived and died Apolinario Mabini, a man who considered himself a failure. Whether or not Mabini was a failure, you, reader, will decide for yourself.—*Adapted from Philippine Prose and Poetry.*

## WEATHER QUESTIONS

*(Answers from page 233)*

- |        |        |
|--------|--------|
| 1. Yes | 5. Yes |
| 2. Yes | 6. Yes |
| 3. No  | 7. Yes |
| 4. No  | 8. No  |

## THE OLDEST CHURCH

*(Continued from page 242)*

brought from China leads one to the second floor. The stair-case is worth seeing, as are also some of the numerous paintings which hang in the church and convent.

In the upper part of the convent is a library. The British, during the invasion of 1762, are charged with having carried away a number of the rarest books and the most important documents and manuscripts, so that at present only a few valuable books and manuscripts remain in the library.

There are numerous other rooms and corridors in the church and convent, such as the recreation hall, cloisters, a private chapel, the dining room, etc. One may descend by a curious circular stairway to the former dispensary and storehouse and the old dining room with its unique decorations on the ceiling.

The convent was designed by the same great architect, Herrera, who designed the church, but his plans were not entirely followed, and many minor changes and additions have been made during the intervening centuries.

## COFFEE

*(Continued from page 257)*

shrubs are raised from seed sown in nurseries, and afterwards planted in moist and shady places on sloping ground. Care is taken to plant the shrubs so that at certain seasons the roots will be constantly surrounded with moisture.

When the fruit is ripe a cloth is placed under the tree and the fruits are shaken down. Then the berries are placed on mats and dried in the sun. The husk is later removed by heavy rollers.

The best coffee comes from Mocha, but Java and Central America also produce large quantities of excellent coffee. Brazil in South America grows abundant crops — more than any other country. Coffee is also grown in the Philippines to some extent.

It has been estimated that the world's supply of coffee is more than two billion pounds a year. The

Anyone who will take the time to be shown through this noble edifice by one of the accommodating fathers in charge will find a visit to the Church of Saint Augustine, oldest church in the Philippines, to be most interesting.

greatest coffee-consuming countries are the United States and the countries of northern Europe.

The refreshing action of coffee is produced by a drug called caffeine (pronounced caf-een). The pleasant smell is produced by an oil which is largely developed by the roasting process.

Coffee is an important article of commerce. The coffee exported each year from Brazil alone is valued at more than 500 million pesos.—*Adapted from the Concise and the Compton Encyclopedia.*

## STORY OF A FAILURE

*(Continued from page 250)*

having always followed the dictates of his conscience and of having always done his best?

Thus lived and died Apolinario Mabini, a man who considered himself a failure. Whether or not Mabini was a failure, you, reader, will decide for yourself.—*Adapted from Philippine Prose and Poetry.*

## WEATHER QUESTIONS

*(Answers from page 233)*

- |        |        |
|--------|--------|
| 1. Yes | 5. Yes |
| 2. Yes | 6. Yes |
| 3. No  | 7. Yes |
| 4. No  | 8. No  |