

## Topic 7

# Description, Height, Weight, and Aging

### KEY TERMS

bay  
 bishoping  
 buckskin  
 cement  
 chestnut  
 cup  
 dental star  
 dentine  
 dun  
 enamel  
 hand  
 palomino  
 pulp  
 roan

### OBJECTIVES

After studying this topic, the reader should be able to

- 1 Identify the parts of the horse
- 2 Describe the five basic body colors
- 3 Describe the five coat color variations
- 4 Describe the common head and leg markings
- 5 Identify the unit used to measure height of horses
- 6 Explain how to use a horse's teeth to tell its age

### PARTS OF A HORSE

It is important to master the language that describes and locates the different parts of a horse. In addition, it is necessary to know which of these parts are of major importance. Nothing so quickly sets a real equestrian apart from a novice as a thorough knowledge of the parts and the language used in describing them. Figure 7-1 shows the parts of a horse.

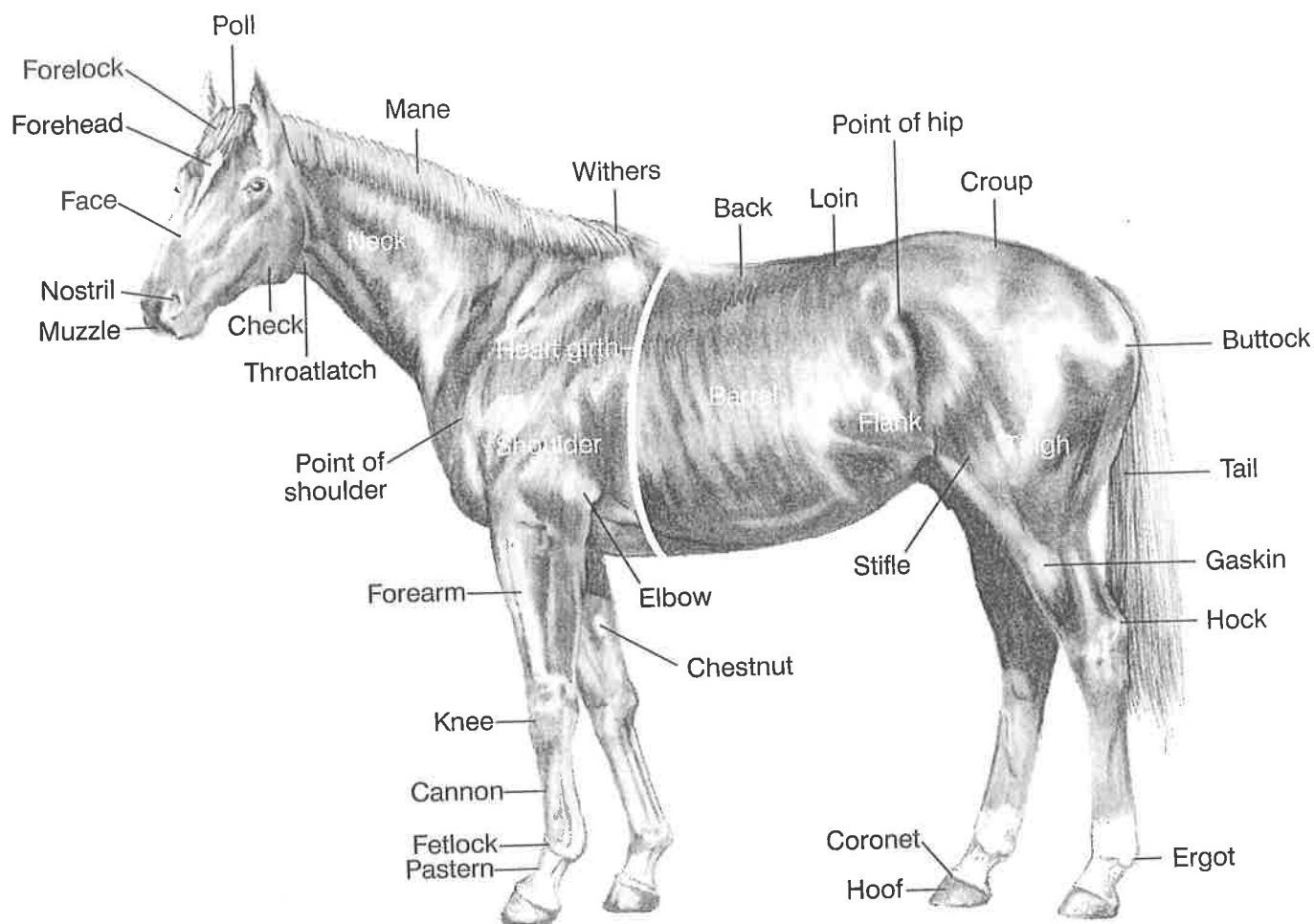
### BODY COLORS OF THE HORSE

The five basic horse body colors and their descriptions follow:

1. **Bay**—*Bay* is a mixture of red and yellow. It includes many shades, from a light yellowish tan (light bay) to a dark, rich shade that is almost brown (dark bay); a bay horse has a black mane, a black tail, and black points.
2. **Black**—A black horse has true black hairs throughout, including the muzzle and the flanks. If there is doubt as to whether a horse is dark brown or black, one should note the color of the fine hairs on the muzzle and the hair on the flanks; tan or brown hairs at these points indicate that the horse is not a true black but a seal brown.
3. **Brown**—A brown horse is almost black but can be distinguished by the fine tan or brown hairs on the muzzle or the flanks.
4. **Chestnut (sorrel)**—A *chestnut* horse is basically red. The shades vary from light washy yellow (light chestnut) to a dark liver color (dark chestnut), between which come the brilliant red gold and copper shades. Normally, the mane and the tail of a chestnut horse are the same shade as the body, although they may be lighter in color, in which case they are termed flaxen. Chestnut color is never accompanied by a black mane and a black tail.
5. **White**—A true white horse is born white and remains white throughout its life. A white horse has snow-white hair, pink skin, and brown eyes (rarely blue).

In addition to the five basic horse colors given, there are five major variations to these coat colors:

## Description, Height, Weight, and Aging



7-1. The parts of the horse. (Drawing courtesy of Dana Boeck)

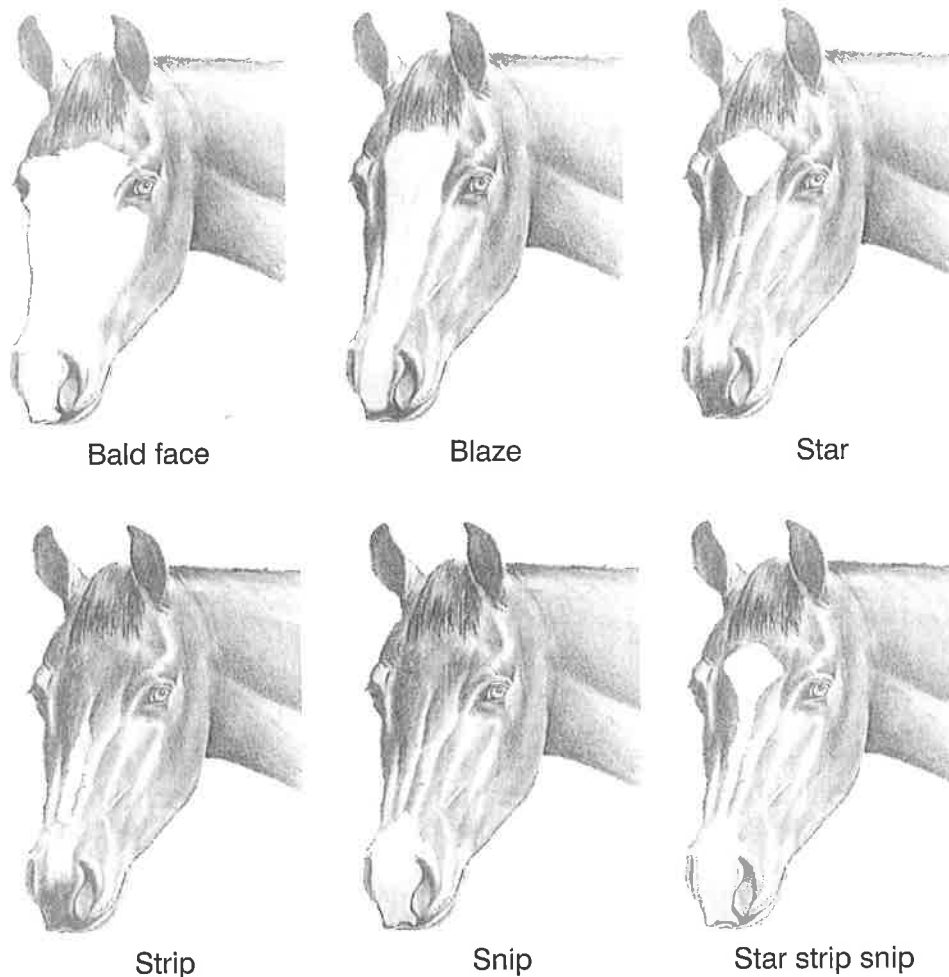
1. **Dun (buckskin)**—A *dun* horse has a yellowish color of variable shading from pale yellow to a dirty canvas color; the horse also has a stripe down its back. A *buckskin* is the same yellow color but its mane, tail, and legs are black.
2. **Gray**—A gray horse has a mixture of white and black hairs. Sometimes gray is difficult to distinguish from black at birth, but grays get lighter with age.
3. **Palomino**—*Palomino* is a golden color (the color of a newly minted gold coin, or three shades lighter or darker); a horse of this color has a light-colored mane and tail (white, silver, or ivory).
4. **Pinto (calico or paint)**—*Pinto* is a Spanish word, meaning "painted." The Pinto horse is character-

ized by irregular colored and white areas, as (a) piebald (white and black) and (b) skewbald (white and any color other than black).

5. **Roan**—A *roan* horse has a mixture of white hairs intermingled with one or more basic colors, as (a) white with bay (red roan), (b) white with chestnut (strawberry roan), and (c) white with black (blue roan).

## HEAD MARKINGS

When identifying an individual horse, it is generally necessary for one to be more explicit than to refer to body color only; for example, it may be necessary to identify the dark sorrel further as the one with the blaze.



7-2. Common head markings. (Drawing courtesy of Dana Boeck)

The most common head markings are shown in Figure 7-2.

## LEG MARKINGS

Leg markings are often used, along with head markings, to describe a horse. The most common leg markings are shown in Figure 7-3.

## MEASURING HORSES

### Height

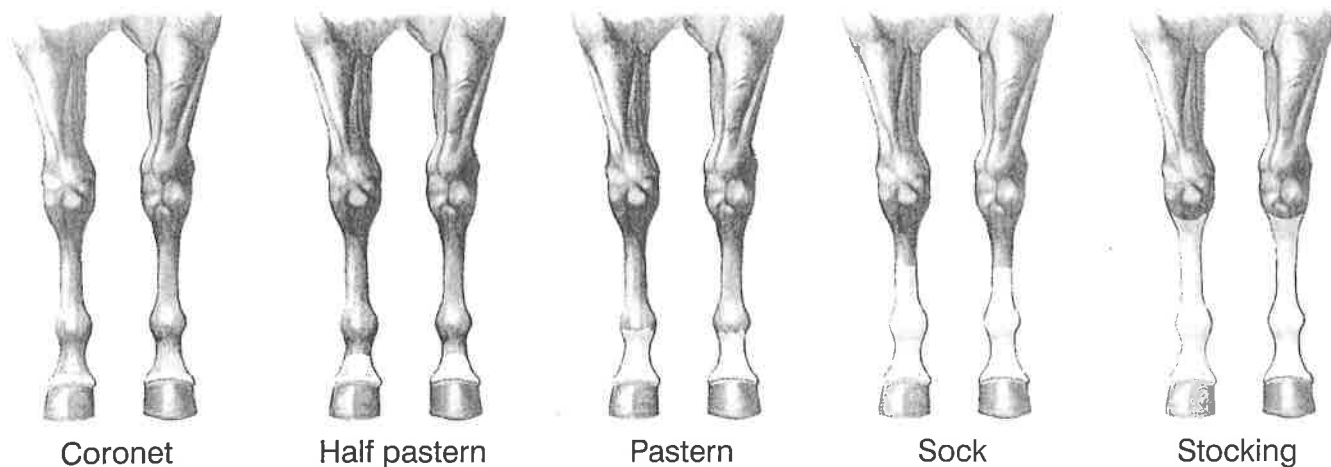
The height of a horse is determined by standing the animal squarely on a level area and measuring the verti-

cal distance from the highest point of its withers to the ground (Figure 7-4): The unit of measurement used in expressing the height is the *hand*, each hand being 4 in. Thus, a horse measuring 62 in. is said to be 15-2 hands (15 hands and 2 in.) high. Animals standing less than 14-2 (14 hands and 2 in.) are usually classed as ponies.

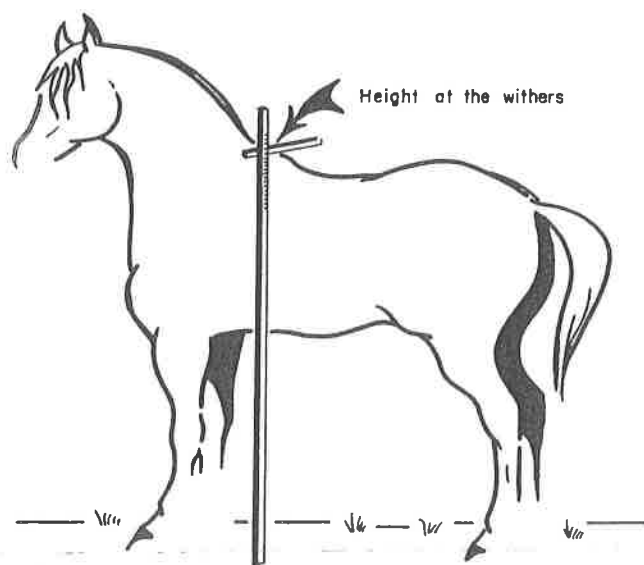
### Weight

An accurate weight is important for determining

1. The amount of feed to offer
2. The amount of medication or wormer to give
3. Potential health problems
4. Efficiency of a training program



7-3. Common leg markings. (Drawing courtesy of Dana Boeck)



7-4. The height of a horse is measured from the highest point of the withers to the ground.

The best way to obtain an accurate weight is to place the animal on a scale. However, not every horse owner has access to a scale. Weight tapes are commercially available and give an estimate of body weight based on the heart girth (see Figure 7-1) of the horse. If a weight tape is unavailable, weight can be estimated using the following formula:

$$\frac{\text{Heart girth (in.)} \times \text{Heart girth (in.)}}{330} \times \text{Body length (in.)} = \text{Body weight (lb)}$$

Heart girth is measured by placing the tape around the horse directly behind the elbow, and body length is measured from the point of the shoulder to the buttock (see Figure 7-1).

## AGING A HORSE

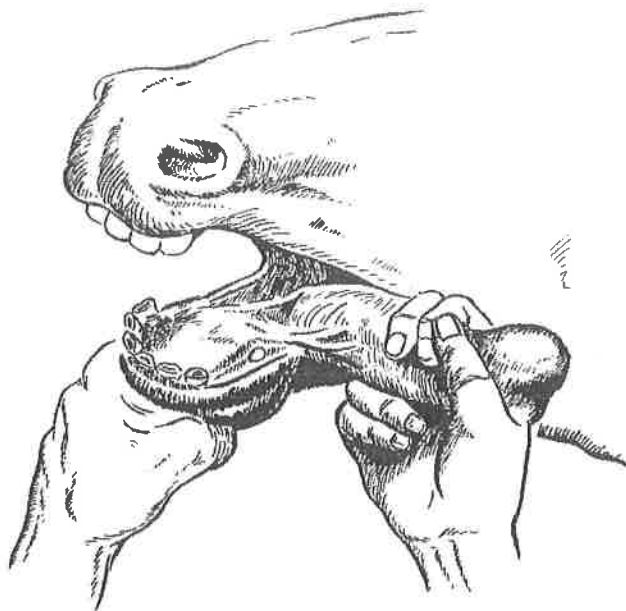
Physical changes within the body are constant. As they affect the general outward appearance and disposition of the horse within certain limits, it is possible by mere general appearance to estimate the age of the animal. Changes in the teeth, however, afford a much more accurate method.

There is nothing mysterious about determination of the age by the teeth. In horses up to 5 years of age, it is simply a matter of noting the number of permanent and milk teeth present. From 6 to 12 years, the number of cups or indentations in the incisor teeth is used, whereas the age of horses beyond 12 years may be estimated by studying the cross section and slant of the incisor teeth.

The lips can be parted to look at the front incisors. However, to get a better look at the teeth, the tongue should be grasped and pulled out to the side of the mouth (see Figure 7-5).

## Numbers and Types of Teeth

The mature male horse has a total of 40 teeth, whereas the young animal, whether male or female, has 24. These are listed in Table 7-1.



7-5. To get a thorough look at the teeth, the tongue should be grasped with one hand and pulled out to the side of the mouth. (Drawing by Prof. R. F. Johnson)

TABLE 7-1. NUMBERS AND TYPES OF TEETH

| Number of Teeth of Mature Animal | Number of Teeth of Young Animal | Types of Teeth  |
|----------------------------------|---------------------------------|---|
| 24                               | 12                              | Molars or grinders.   |
| 12                               | 12                              | Incisors or front teeth (the 2 central incisors are known as middle incisors, centrals, pinchers, or nippers; the next 2—one on each side of the nippers—are called intermediates; and the last—or outer pair—the corners). |
| 4                                | None                            | Canine teeth. These are located between the incisors and the molars in the male.  |

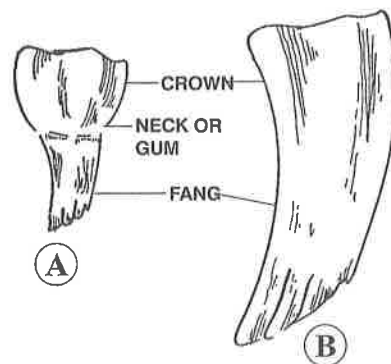
As the canine teeth are usually not present in the mare, the mature female may be considered as having a total of 36 teeth rather than 40 as in the male.

The knowledgeable equestrian is also aware of the difference between temporary and permanent teeth. The temporary or milk teeth are smaller, are much whiter, and have a distinct neck at the junction of the crown and the root, which is at the gum line. After their eruption, the permanent teeth may be distinguished from the temporary teeth by their greater size, darker color, broader neck showing no constriction, and greater width from side to side.

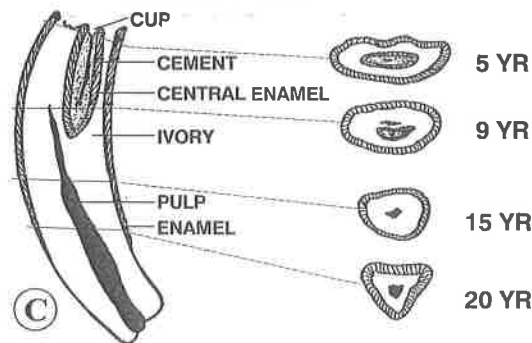
### Structure of the Tooth

The tooth consists of the outside *cement* and a second layer of a very hard *enamel*, followed by the *dentine* and a dark center known as the *pulp* (see Figure 7-6). The enamel passes up over the surface of the tooth and extends inward, forming a pit. The inside and bottom of the pit, blackened by feed, constitute the *cup*. As the rims of the cup disappear through wear, two distinct rings of enamel remain, one around the margin of the tooth and the other around the cup. With wear, the cup becomes smaller—first more oval or rounded, then triangular and more shallow. Finally, it disappears completely. Further wear on the table or grinding surface of the tooth exposes the tip of the pulp canal or cavity in the center of the tooth. The exposed tip of this canal, which appears between what is left of the cup and the front of the tooth, is known as the *dental star*. The gradual wearing and disappearance of the cups of the teeth

TEMPORARY TOOTH      PERMANENT TOOTH



SECTIONAL VIEWS



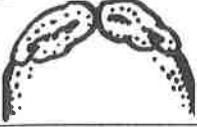









7-6. The structure of a horse's tooth. (A) A temporary front tooth. (B) A permanent front tooth. Temporary teeth are smaller compared with permanent teeth and show a narrowing at the neck (gum line). (C) Cross-sectional view of a tooth. These drawings show how tooth appearance changes as the tooth surface is worn away with advancing age. (Drawing by Prof. R. F. Johnson)

according to a definite pattern over time enables the experienced equestrian to judge the age of the animal with a fair degree of accuracy up to 12 years.

A summary showing the changes in teeth according to usual age intervals is given in Table 7-2. As a general



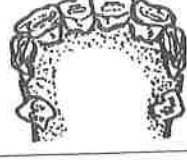

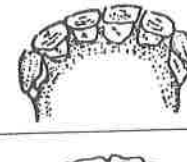
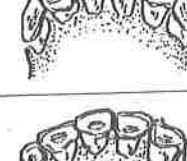


rule, the temporary incisors appear (starting with the middle incisors) at 6 days, then the next incisors at 6 weeks, and finally the corner incisors at 6 months. The adult incisors appear in the same order at 2½ years, 3½ years, and 4½ years.

**TABLE 7-2. DETERMINING THE AGE OF HORSES BY THE TEETH<sup>1</sup>**

| Drawing of Teeth  | Age of Animal                     | Description of Teeth                                      |                               |
|---|-----------------------------------|---|-------------------------------|
|    | At birth or before 10 days of age | First, or central, upper and lower incisors appear.       | Appearance of temporary teeth |
|    | 4 to 6 weeks of age               | Second, or intermediate, upper and lower incisors appear. |                               |
|    | 6 to 10 months of age             | Third, or corner, upper and lower incisors appear.        |                               |
|   | 1 year of age                     | Crowns of central incisors show wear.                     | Wear of temporary teeth       |
|  | 1½ years of age                   | Intermediate incisors show wear.                          |                               |
|  | 2 years of age                    | All temporary incisors show wear.                         |                               |
|  | 2½ years of age                   | First, or central, incisors appear.                       | Appearance of permanent teeth |
|  | 3½ years of age                   | Second, or intermediate, incisors appear.                 |                               |
|  | 4½ years of age                   | Third, or corner, incisors appear.                        |                               |
|  | 4 to 5 years of age (in male)     | Canines appear.   |                               |

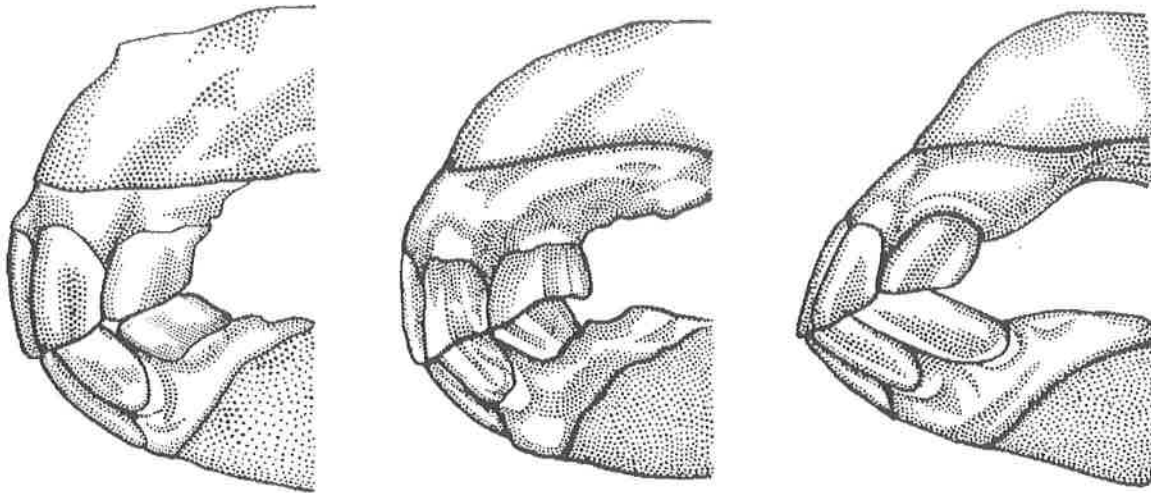
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TABLE 7-2 (Continued)

| Drawing of Teeth  | Age of Animal   | Description of Teeth   |
|---|-----------------|--|
|    | 5 years of age  | Cups in all incisors.  |
|    | 6 years of age  | Cups worn out of lower central incisors.   |
|    | 7 years of age  | Cups also worn out of lower intermediate incisors.   |
|   | 8 years of age  | Cups worn out of all lower incisors, and dental star appears on lower central and intermediate pairs.                |
|  | 9 years of age  | Cups also worn out of upper central incisors, and dental star appears on upper central and intermediate pairs.       |
|  | 10 years of age | Cups also worn out of upper intermediate incisors, and dental star is present on all incisors, both upper and lower. |
|  | 11 years of age | Cups worn out of all upper and lower incisors, and dental star approaches center of cups.                            |
|  | 12 years of age | No cups. Smooth mouthed.   |

Wear of permanent teeth

<sup>1</sup>The illustrations for this table were prepared by Prof. R. F. Johnson.



**7-7.** Side view of a horse's mouth at 5, 7, and 20 years of age (from left to right). Note that as the horse advances in age, the teeth change from nearly perpendicular to slanting sharply toward the front. The 7-year hook is visible on the upper corner incisor in the middle drawing (7 years) and Galvayne's groove is fully visible on the upper corner incisor of the drawing on the right (20 years). (Drawing by Prof. R. F. Johnson)

With more advanced age, the teeth change from oval to triangular, and they project or slant forward more and more each year (see Figure 7-7). As the teeth slant forward, the upper corner incisors develop a hook. This hook first appears at 7 years of age and is so named the "7-year hook." The hook disappears around 9 years of age but reappears around 11 years of age and is thus called the "11-year hook."

Galvayne's groove is a dark line that develops along the length of each upper corner incisor. The groove first starts to appear at 10 years of age along the gum, is approximately halfway down the tooth by 15 years, and runs the full length of the tooth by 20 years. The groove then begins to disappear (also in 5-year increments), being absent from the gum line to halfway down at 25 years and missing altogether at 30 years.

It must also be realized that the environment of the animal can affect the wear on the teeth, often making it impossible to determine accurately the age of the animal. For example, the teeth of a horse raised in a dry, sandy area will show more than normal wear. Thus, the 5-year-old western horse may have a 6- or even 8-year-old mouth. The unnatural wear resulting in the teeth of cribbers, or animals with parrot mouth or undershot jaw, also makes it difficult to estimate age.

Occasionally, unscrupulous horse traders endeavor to make the amateur a victim of their trade tricks, especially through tampering with the teeth. As very young

horses increase in value to a certain stage, the milk teeth are sometimes pulled a few months before they would normally fall out. This can hasten the appearance of the permanent teeth and make the animals appear older.

**Bishoping** is the practice of artificially drilling, burning, or staining cups in the teeth of older horses in an attempt to make them sell as younger horses. The experienced equestrian can detect such deception because the ring of enamel that is always present around the natural cup cannot be reproduced. Also, the slanting position and triangular shape of the teeth of an older animal cannot be changed. An experienced equestrian should always be called upon to make an examination if there is any suspicion that the teeth have been tampered with.

#### TOPIC QUESTIONS

1. Describe the five basic colors of the horse.
2. Describe three head markings and three leg markings.
3. What unit of measurement is a hand equal to?
4. List four parts of the tooth.
5. Describe how the teeth of a 3-year-old horse are different from those of a 20-year-old horse.
6. What is Galvayne's groove?