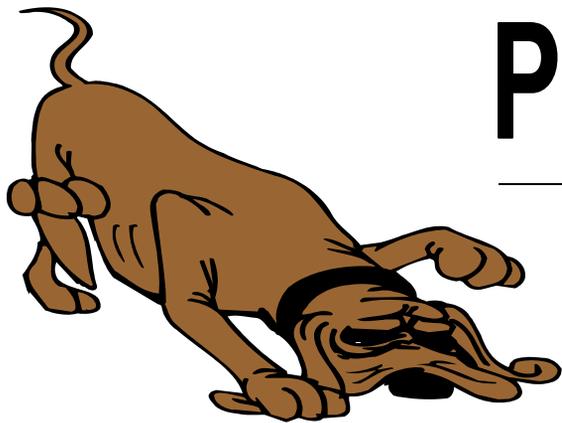

A Breed University Course

Workbook Exercise Program For



Scent and the Scenting Dog

By William G Syrotuck

Workbook Course #402

A Publication of the Basset Hound Club of America, Inc

Our sincere appreciation to
Barkleigh Productions for
allowing us to create the
following
workbook exercises for
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by William G. Syrotuck
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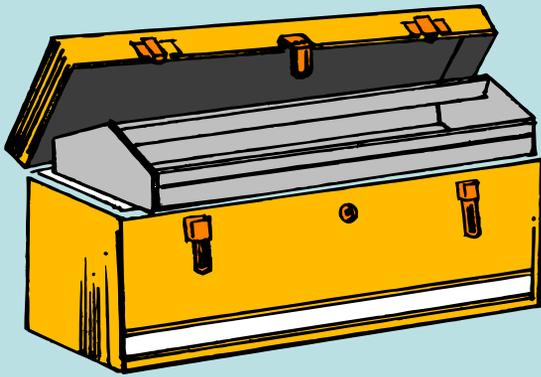
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Scent and the Scenting Dog Toolkit

The *Scent and the Scenting Dog* toolkit consists of **three components**: (1) a **textbook**, (2) a series of workbook **quizes** and (3) a set of **flashcards**. Information in the toolkit is designed to be used as an **introduction** to understanding how scenting dogs function and work. The goal of the toolkit is to provide **study techniques** to help readers learn new information quickly and easily.

Tool #1: The Scent and the Scenting Dog Textbook

Although William Syrotuck's *Scent and the Scenting Dog* publication is over 30 years old, it is still considered a **definitive work** and is used by many search and rescue services as well as canine fanciers in all areas of scent work. This publication is chock full of information on the theories behind **how dogs follow a scent**. Discussions range from people as **sources of scent** and how their scent is transmitted. The **ground scent picture** is also analyzed, giving the reader a sound understanding of how odors are detected by dogs and the training methods that can be used.

Tool #2:

Self Correcting Quizzes

The second component of the *Scent and the Scenting Dog* toolkit is a series of **workbook exercises**. Workbook exercises help readers learn and remember new information while a **correspondence school format** permits students to work at **home** and complete the questions **at their own pace**. Some people may complete these exercises in a few hours or in a week; others may take longer. The emphasis is on **convenience and flexibility**.

Each quiz uses easy-to-answer, objective formats of **true and false** and/or **multiple choice** questions. The design of the exercises is such that much of the same information is asked using both formats so that by the time readers have completed the questions, they have learned many facts and concepts through **repetition of the material**.

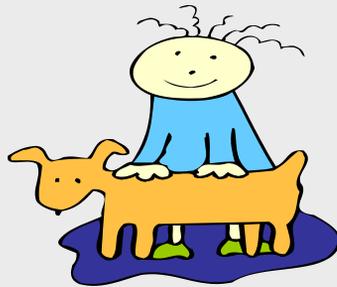
Dog fanciers who do the workbook exercises will end up mastering more information about the scenting dog than those who do not. This **Breed University Course** is designed to be used by **parent clubs with scenting breeds** and can help give members a basic education on how a scenting dog works, whether it is involved with tracking, field trialing, search and rescue or hunting. Although Syrotuck **discusses human scent, the same theories are generally applicable to animal scent**.



Tool #3:
Self Correcting Quizzes

Scent and the Scenting Dog

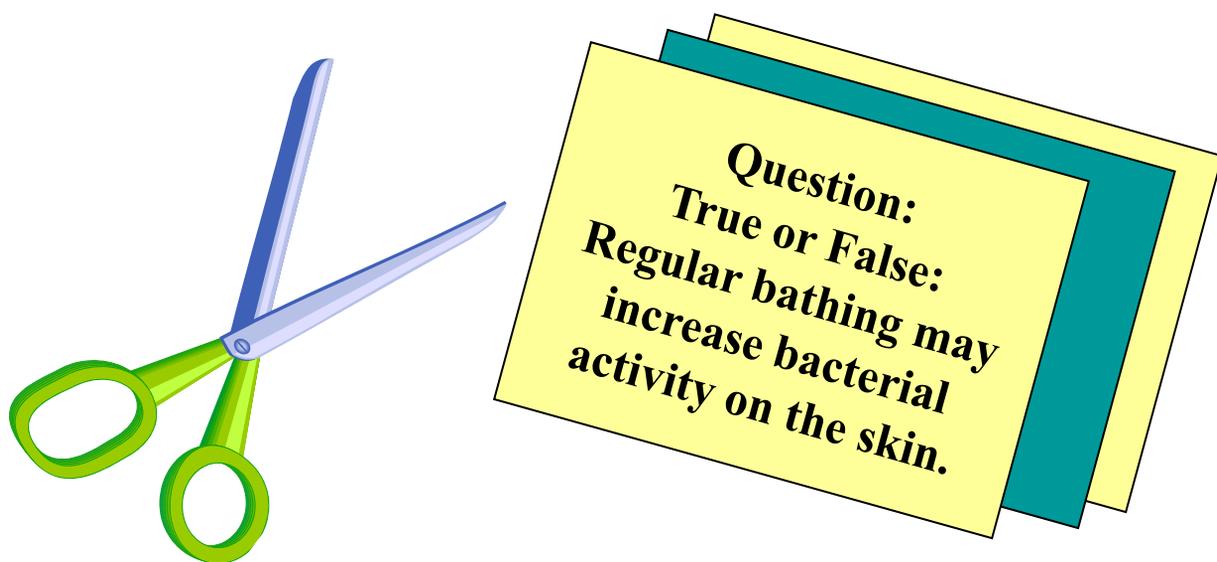
By William G Syrotuck



Flashcards

**A study tool to help dog fanciers learn
information quickly and easily**

What are the *Scent and the Scenting Dog* FLASHCARDS?



Flashcard Set

The enclosed *Scent and the Scenting Dog* Flashcards can help readers quickly and easily learn the important things to know about the scenting dog. Questions and answers are based on material presented in William Syrotuck's book *Scent and the Scenting Dog*.

Your card set is on the following pages.
Simply cut the cards apart.

Question:

True or False: All humans have the same scent.

Question:

True or False: Humans can smell all the same things that animals can.

Question:

True or False: Dogs have such a good sense of smell that it's not really necessary to expose them to different environments and odors.

Question:

What do we call the ability of a dog to find one particular smell among numerous other odors?

Question:

What does Syrotuck feel is the best pigment for smelling ability?

Question:

True or False: The presence of certain chemicals can block the ability to smell other odors.

Question:

True or False: Anosmia is an inability to smell.

Question:

According to Syrotuck, how many times better is a dog's sense of smell compared to a human's?

Answer:

False.

Answer:

False.

Answer:

Discrimination

Answer:

False.

Answer:

True.

Answer:

Rich brown pigment.

Answer:

44 times better.

Answer:

True.

Question:

What colors of dogs does Syrotuck feel can have limited olfactory abilities?

Question:

True or False: A person's diet has nothing to do with his/her scent.

Question:

What are dead skin cells called?

Question:

True or False: Syrotuck feels that dogs with smaller brains may have a less keen sense of smell than larger dogs.

Question:

According to Wright, what are the 2 broad categories of how receptor cells in the nose are stimulated?

Question:

What is the general function of the eccrine and apocrine glands?

Question:

True or False: Eccrine glands cover the entire body.

Question:

True or False: Dead skin cells are never visible to the naked eye.

Answer:

False

Answer:

White or light colored dogs.

Answer:

True

Answer:

Rafts.

Answer:

They are a source of sweat.

Answer:

Vibration and chemical
shape of vapors and gases.

Answer:

False

Answer:

True

Question:

According to Syrotuck, what two areas of the body contain the most eccrine glands?

Question:

What is the main stimulus for the apocrine gland?

Question:

True or False: Regular bathing may increase bacterial activity on the skin.

Question:

What do we call the process in which dead skin cells are broken down by the action of bacteria?

Question:

What is probably the most significant factor that affects the growth of bacteria?

Question:

True or False: Loose clothing will increase the escape of scent from a warm body better than tighter fitting clothing.

Question:

According to Droscher, in approximately how many minutes was the scent of a person's foot in a new pair of rubber boots 0.2 millimeters thick, detectable by dogs?

Question:

True or False: A person's emotions will have no effect on the odor they give off.

Answer:

Stress

Answer:

Soles of the feet and the
forehead

Answer:

Putrafaction

Answer:

True

Answer:

True

Answer:

Temperature

Answer:

False

Answer:

8 minutes

Question:

True or False: Rafts form a kind of vapor cloud around each person.

Question:

True or False: The size of a raft will have nothing to do with how far away it will be carried.

Question:

Approximately how many dead skin cells are shed by the body per minute?

Question:

True or False: Air seems to flow from the feet upward to the top of the head.

Question:

What is one of the best ways to assess wind conditions?

Question:

True or False: If a dog handler is using air currents in a search effort, he will find that wind currents travel up a slope in the morning.

Question:

True or False: When working with scenting dogs, hills and ridges should be searched in the morning.

Question:

True or False: At night, cool air tends to be slower moving and subject to less turbulence.

Answer:

False

Answer:

True

Answer:

True

Answer:

40,000

Answer:

True

Answer:

Watch smoke that has been generated at ground level.

Answer:

True.

Answer:

True.

Question:

What are the two components of the ground scent picture?

Question:

True or False: Lush vegetation will provide less scent than dry sand and gravel.

Question:

True or False: A person's weight has nothing to do with how much odor is produced in the area of one footstep.

Question:

True or False: The size of a person's foot will affect the amount of odor produced in the area of his footstep.

Question:

True or False: Sunlight tends to help make bacteria grow.

Question:

Name 3 odors which may mask the particular odor being sought.

Question:

True or False: If wind conditions are right, vapors coming off each footstep tend to link together to form a tunnel of vapor over the pattern of a person's footsteps.

Question:

True or False: Vegetative scent tends to be more intense and last longer than human scent.

Answer:

False

Answer:

Footsteps on the ground and
rafts that have come to rest on
the earth.

Answer:

True

Answer:

False

Answer:

Cedar, mint, skunk
cabbage, onions

Answer:

False

Answer:

True

Answer:

True

Question:

True or False: Moisture must be present for bacterial activity to continue.

Question:

True or False: Rafts that were deposited at noon would be best perceived during the evening.

Question:

If rafts were deposited in the evening, when would they be best perceived?

Question:

True or False: All plants give off the same general odor.

Question:

True or False: In general, vapor from rafts falling from the body tends to last a long time.

Question:

True or False: Very few rafts falling from the human body tend to fall near the person's footsteps.

Question:

True or False: Dead plant vapors do not help a dog discriminate the scent of one human being from another.

Question:

According to Syrotuck, what type of dog indicates almost each one of the subject's footsteps?

Answer:

True.

Answer:

True

Answer:

False

Answer:

The following morning.

Answer:

True

Answer:

False

Answer:

A tracking dog.

Answer:

True

Question:

True or False: A dog would have difficulty telling the difference between two sets of footprints that crossed each other if they were made at the same time and by a person of the same weight and shoe size.

Question:

True or False: It's just as easy for a dog to follow a scent over concrete as it is to follow a scent over vegetation.

Question:

According to Syrotuck, what kind of a dog is oriented to rafts that have fallen along a person's route and works some distance from the actual footsteps?

Question:

True or False: A dog's training should begin with relatively older tracks.

Question:

True or False: A basic orientation of the tracking dog is leaves of vegetation.

Question:

True or False: Trailing dogs may sniff at vegetation 2 or 3 feet off the ground.

Question:

True or False: Tracking dogs may have to be taught how to discriminate by training on predominantly hard dry ground with sparse vegetation.

Question:

True or False: Trailing dogs need to be allowed to work some distance from the exact route.

Answer:

False

Answer:

True

Answer:

False

Answer:

Trailing dog.

Answer:

True.

Answer:

False

Answer:

True

Answer:

True

Question:

What kind of dogs does Syrotuck call air scenting dogs?

Question:

What is a benefit to point source search training?

Question:

True or False: In searching for the source of a scent, the amount of time that has passed is irrelevant.

Question:

What type of scenting dog is the least ground oriented?

Question:

True or False: Dogs have been trained to prospect for various kinds of mineral deposits.

Question:

True or False: An older or over-trained dog may consistently overshoot a track that has turned.

Question:

True or False: Eagerness to go tracking does not necessarily mean that a dog likes to do the job.

Question:

True or False: Sometimes kennel dogs are more likely to look eager to work when in reality they are more excited just to be going 21 some place.

Answer:

It has varied applications

Answer:

Point source dogs

Answer:

Point source (air scent) dogs

Answer:

False

Answer:

True

Answer:

True

Answer:

True

Answer:

True

Question:

True or False: Dogs that are punished for making a mistake are more likely to fake following a scent.

Question:

True or False: Dogs working in front of a handler may be more open to getting miscues from the handler with regard to which direction to turn.

Question:

True or False: Syrotuck feels a leash and harness are always necessary.

Question:

True or False: Voice commands should never be used with a tracking dog.

Question:

True or False: A dog searching for a lost individual in the wilderness will typically use a random search pattern.

Question:

True or False: Some feel the signaled search pattern may interrupt the dog's concentration because he is always waiting for a command from its handler.

Question:

True or False: Bells and lights are especially important for police dogs working at night.

Question:

True or False: Snow increases bacterial activity and improves scenting conditions.

Answer:

True

Answer:

True

Answer:

False

Answer:

False

Answer:

True

Answer:

True

Answer:

False

Answer:

False

Question:

True or False: The best snow condition for scent is very loose and dry snow.

Question:

Under how many feet of snow can the average dog detect a person?

Question:

True or False: In an Austrian experiment, as long as a track was started with human footsteps, a dog did not differentiate between human and wooden footsteps.

Question:

True or False: Wetting a dog's nose will not improve its scenting ability.

Question:

True or False: A light rain can be beneficial because it rehydrates the bacterial activity.

Question:

True or False: Scent is easily perceptible upwind.

Question:

True or False: It is impossible for a dog to find a person who has crossed a stream.

Question:

If a person has crossed a narrow stream, where can his scent usually be found?

Answer:

5 to 7 feet

Answer:

True

Answer:

False

Answer:

True

Answer:

False

Answer:

True

Answer:

Along the banks of the
stream and down stream.

Answer: False.

Question:

True or False: Following a scent at night can be easier than during the day.

Question:

True or False: A 30 minute track is easier to follow than a 10 minute track.

Question:

True or False: Porous objects like shoes, wallets and gloves will absorb a scent better than non-porous objects like metal watch bands or plastic belts.

Question:

True or False: When a person handles an object there is a direct transfer of skin secretions, cells and bacteria.

Question:

True or False: Even if an article is bleached, scent cannot be removed from it.

Question:

True or False: It is technically impossible for a human to avoid detection by a dog.

Question:

True or False: Leaving a scent article in the sun will not destroy the scent.

Question:

True or False: A person's breath will not leave a scent.

Answer:

True

Answer:

True

Answer:

True

Answer:

True.

Answer:

False

Answer:

False

Answer:

False

Answer:

False.

Question:

True or False: In general, dogs will become disturbed by a strong new smell.

Question:

True or False: The colder something is, the more odiferous it becomes.

Question:

True or False: All breeds of dog have the same scenting ability.

Question:

True or False: Infected teeth can affect a dog's ability to smell.

Question:

True or False: Once the mucous membranes of a dog are damaged, the nose lining will never regenerate.

Question:

True or False: The size of a breed has nothing to do with how many olfactory cells it has.

Question:

True or False: According to Droscher, Dachshunds have more olfactory cells than Fox Terriers.

Question:

True or False: Brachycephalic (short nosed) dogs have the best senses of smell.

Answer:

False

Answer:

True

Answer:

True.

Answer:

False

Answer:

False

Answer:

False

Answer:

False

Answer:

False

Question:

True or False: Certain breeds that are white may have impaired senses of smell.

Question:

True or False: It has been shown that regular practice will have little effect on a dog's mind or his ability to discriminate.

Question:

True or False: All odors have the same molecular structure.

Question:

True or False: Genetics determines our hormone balance and therefore our emotional responses.

Question:

True or False: The offensive odor of sweat is produced when apocrine sweat is exposed to bacteria on the skin.

Question:

True or False: The respiratory and genitourinary tracts have little to do with body odor.

Question:

True or False: Compared to bacteria in the soil, the skin has relatively little bacteria to speak of.

Question:

True or False: The main ingredients of human scent are bacteria acting on dead skin cells.

Answer:

False

Answer:

True

Answer:

True.

Answer:

False

Answer:

False

Answer:

True

Answer:

True

Answer:

False

Question:

True or False: If people wear the same type of clothing they will give off the same odor.

Question:

True or False: Rafts are circular in shape.

Question:

True or False: Scent may pool in basin-like pockets when cool air is flowing downhill.

Question:

True or False: With regard to different layers of snowfall, the bottom layer will be the warmest.

Question:

True or False: If a victim is covered by several different layers of snow it can diminish the amount of vapors that reach the surface.

Question:

True or False: It's easier for a dog to detect a person who is buried under heavy, very wet snow.

Answer:

False

Answer:

False

Answer:

True.

Answer:

True

Answer:

False

Answer:

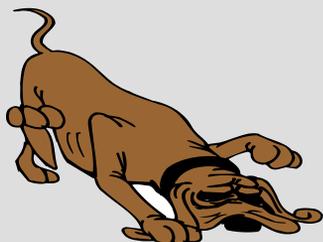
True

Certificate of Completion

To receive your *Certificate of Completion* for *Course #402 Scent and the Scenting Dog Workbook Program*, please enclose this page along with your completed exercises and a check for \$5.00 made payable to the **Basset Hound Club of America** and send to:

Claudia Orlandi
P O Box 169
Essex Jct, VT 05453-0169
Email: domorlan@gmavt.net

A ***Certificate of Completion*** will be sent to those who send in the Workbook Exercises and answer 80% of the questions correctly.



Course #402

Scent and the Scenting Dog

Certificate of Completion

Please Print

Date _____

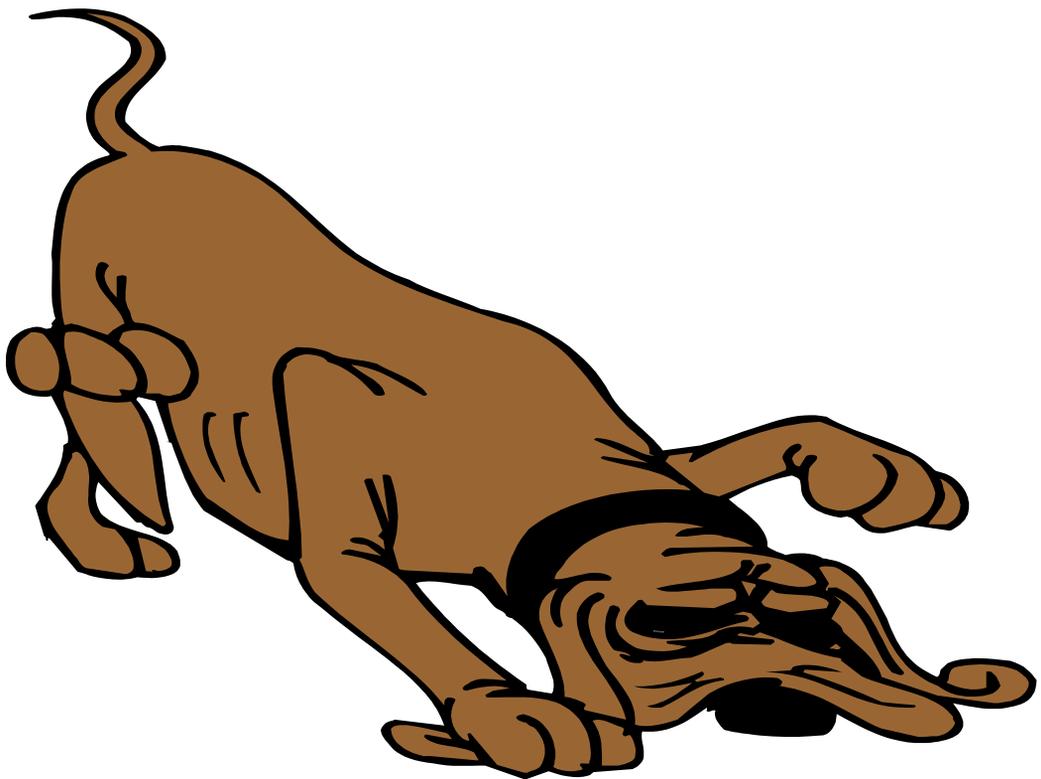
Name _____

Address _____

Email and/or phone number _____

My check for \$5.00 made payable to BHCA is enclosed _____

**Workbook exercises
start on the
following page.
Base your answers
on *Scent and the
Scenting Dog.***



True and False Questions

Place a T or F in each blank. Base your answers on information in *Scent and the Scenting Dog*.

THE SENSE OF SMELL (pp 9-12)

- _F_ 1. All humans have the same scent.
- _T_ 2. Syrotuck proposes that each human is surrounded by a cloud of scent, portions of which drop off and settle on the ground around him.
- _F_ 3. Sight is the best developed sense in newborn babies.
- _T_ 4. A lot of what we know about scent comes from studies of humans.
- _F_ 5. Blind people have a less developed sense of smell than sighted people.
- _T_ 6. Many four footed animals, including dogs have a keen sense of smell.
- _T_ 7. Discrimination is the ability of a dog to find one particular smell among numerous other odors.
- _F_ 8. There have been no studies that show that the more training humans and animals receive, the better their ability to discriminate among odors.
- _T_ 9. Sometimes the presence of certain chemicals blocks the ability to smell other odors.
- _T_ 10. Studies show that if a human first sniffs the odor of acetone and then the odor of xylene, he/she will be able to discern the odor of xylene; but if the odor of xylene is sniffed first followed by the acetone odor, the acetone smell will not be discernable. This might be applicable to dogs.
- _F_ 11. Gasoline will not block a dog's sense of smell.
- _T_ 12. It is likely that a dog will become very disturbed by a strong new smell.
- _F_ 13. Since a dog's scenting ability is so developed it is not really necessary to expose him to a lot of new environments and odors.
- _T_ 14. Certain odors like a female in season evoke predictable responses in dog. This same principle may explain why a dog may respond with dislike to a person who is afraid of him.
- _T_ 15. Receptor sites in the nose are involved in human and animal scenting ability.
- _F_ 16. Gases and vapors are not involved in giving off odors.

- T__ 17. All odors must reach the nose.
- T__ 18. Vaporous material will not retain odor for a very long time.
- T__ 19. The warmer something is the more odiferous it becomes.
- F__ 20. Anything frozen will never give off an odor.
- T__ 21. Finding a cold body in a cold environment will be difficult.
- F__ 22. Humans can smell all the same things that dogs can.
- T__ 23. Some slightly porous materials can hold vaporous odors for many hours.

ANATOMY AND PHYSIOLOGY (pp 13-23)

- F__ 24. All breeds of dogs have the same scenting abilities.
- T__ 25. The sinuses of a dog are probably involved with scenting ability.
- T__ 26. If a dog has infected teeth, it may seriously affect his ability to use his nose.
- F__ 27. Once the mucous membranes of a dog are damaged, the nose lining will never regenerate.
- T__ 28. Almost one eighth of the dog's brain is involved with olfaction.
- F__ 29. Most albino animals have an especially keen sense of smell.
- T__ 30. It is necessary to keep breeding for rich brown pigment in the olfactory areas of working dogs since it is associated with the ability to smell.
- T__ 31. Anosmia means an inability to smell.
- T__ 32. The more olfactory cells in a human or animal, the better the sense of smell.
- F__ 33. The size of various dog breeds has nothing to do with how many olfactory cells it has.
- F__ 34. Dachshunds have more olfactory cells than Fox Terriers.
- T__ 35. A dog's sense of smell is about 44 times greater than a human's sense of smell.
- T__ 36. Some researchers feel that the larger the olfactory area of an animal, the better will be its ability to discriminate among different odors.
- F__ 37. Short nosed (brachycephalic) dogs have the best senses of smell.
- T__ 38. Certain breeds of white or light colored dogs may have an impaired sense of smell.

- T__ 39. Dogs with smaller sized brains have a reduced olfactory area and may have a less keen sense of smell than larger dogs.
- T__ 40. There is little doubt that regular practice will improve both the working ability of the dog's mind as well as the discriminatory quality of his nose.

THE THEORIES OF ODOR (pp 25-26)

- T__ 41. Syrotuck uses the word "scent" to refer to the combination of odors or smells that characterize an individual; he uses the word "odor" to refer to specific sources of odors such as foot odors and chemical odors.
- T__ 42. Dr J Amooore has broken odors down into 7 categories, which differed in the shape of their molecular structures.
- T__ 43. Dr. R. Wright has suggested that the 2 broad categories of how receptor cells in the nose are stimulated are (1) by vibration or (2) by the chemical shape of vapors and gases.

THE HUMAN BODY AS A SCENT SOURCE (pp 27-43)

- T__ 44. The source of human scent is the body.
- T__ 45. Genetics determines our hormone balance and as a result, our emotional responses.
- F__ 46. Scent-wise all human beings smell the same.
- T__ 47. Of interest to people working with dogs is the fact that the size and function of the sweat glands of Negroids, Caucasians and Orientals are all different.
- T__ 48. Cultural customs and diet will all have an effect on odors given off in body secretions.
- T__ 49. The human body is made up of approximately 60 trillion cells.
- T__ 50. In humans, approximately 50 million cells die every second and some are shed from our body.
- T__ 51. Syrotuck's main focus in the book is on the skin cells that are shed from the human body.
- F__ 52. Dead skin cells that are shed from our bodies are called boats.

- F__ 53. Dead skin cells are never visible to the naked eye.
- T__ 54. Sweat is one of the primary body odors.
- F__ 55. Environment has no effect on sweat.
- F__ 56. The composition of sweat is the same in every individual.
- T__ 57. The 2 sources of sweat are the eccrine and apocrine glands.
- T__ 58. Eccrine glands cover the entire body.
- T__ 59. Two of the areas that contain the most eccrine glands are the soles of the feet and the forehead.
- F__ 60. Cold is the main stimulus for the eccrine gland.
- T__ 61. The apocrine glands are located at the base of hair follicles in areas like the perianus and the genitals.
- T__ 62. Stress is the main stimulus for the apocrine sweat gland.
- T__ 63. The offensive odor of sweat is produced when apocrine sweat is exposed to bacteria on the skin.
- T__ 64. Sebaceous glands are found on the face, scalp and pubic area.
- T__ 65. The respiratory and genitourinary tracts contribute to odor.
- T__ 66. Research has shown that regular bathing may increase bacterial activity on the skin because the act of washing away the skin exposes hidden microorganisms.
- T__ 67. The body's exposure to the environment means that bacteria, fungi and parasites end up inhabiting the skin.
- T__ 68. The face, neck, armpits and groin have a high density of bacteria.
- T__ 69. It may be true that there is almost as much bacteria on the skin as there is in the soil.
- T__ 70. The main ingredients of human scent are bacteria acting on dead skin cells.
- T__ 71. When dead skin cells are broken down by the action of bacteria, the process is called putrefaction. Putrefaction gives off odors in the form of vapors and gases.
- F__ 72. A single bacterium has a long life span – it grows, matures, reproduces and dies over a period of weeks.
- T__ 73. Temperature is probably the most significant factor that affects the growth of bacteria.
- T__ 74. Loose clothing and exposed skin will increase the escape of scent from a warm body better than clothing that is tighter fitting.

- T__75. Any type of rubber or plastic clothing that increases overheating and sweating can give off as much scent as if the person were not wearing such clothing.
- T__76. One researcher claims that a dog can detect the scent of a person's foot approximately 8 minutes after being in a new pair of rubber boots 0.2 millimeters thick.
- T__77. Body odor is produced because bacteria acts upon our body's dead skin cells, residues and body secretions.
- F__78. Regarding soaps, laundry preparations and clothing, all individuals react the same way and give off the same odors to these items.
- F__79. A person's emotions will have no effect on the odor they give off.

TRANSMISSION OF ODOR (pp 45-52)

- T__80. Rafts are cornflake in shape, which makes them aerodynamic.
- F__81. About 10 cells are shed every minute by the body.
- F__82. Rafts have nothing to do with the odor that comes off of a person's body.
- T__83. Rafts form a kind of vapor cloud around each person.
- T__84. The size of the raft will determine how far away it will be carried.
- T__85. Another name for raft is dead skin cell.
- F__86. There is no theory that supports the idea that a current of air next to the surface of the skin acts as a transport system for rafts.
- T__87. Air seems to flow from the feet upward to the top of the head.
- F__88. The flow of air increases as the outside temperature increases.
- T__89. It seems apparent that body air currents provide a transportation system for the body's dead skin cells (rafts) that are laden with bacteria.
- T__90. The individual scent of each person is the human bacteria working on the dead skin cells.
- T__91. From a chemical and molecular view point, there are an infinite number of individual odors that can be created.

ATMOSPHERIC FACTORS AND AIRBORNE SCENT (pp 53-59)

- T__92. When rafts are cast into the environment they are affected by wind, temperature and humidity.
- F__93. One of the best ways to judge wind conditions is to moisten a finger and hold it in the air.
- T__94. A good way to assess wind conditions is to watch smoke that has been generated at ground level.
- T__95. Temperature varies as one goes from ground level to farther distances off the ground.
- F__96. A cross wind will have no effect on rafts.
- T__97. Although wind may be coming from one particular direction, a roadway will tend to channel air and scent along its length.
- T__98. Scent may pool in basin-like pockets when cool air is flowing downhill.
- T__99. When there is little air exchange, it tends to be a dead area with regard to scent.
- F__100. Temperature and humidity have little effect on the dispersion of rafts.
- T__101. If a dog handler is using air currents in a search effort, he will find that wind currents will travel up a slope in the morning.
- T__102. As the sun starts to lower, the ridges and upper air cool first and the cool air will run down the slope.
- T__103. When working dogs on scent, it is best to work the ridges in the morning and the valleys in the later part of the afternoon.
- F__104. At night, air in closed areas cools first and flows uphill.
- T__105. At night, cool air tends to be slower moving and subject to less turbulence.
- T__106. Exposed surfaces are exposed to greater extremes of temperature.
- F__107. Light surfaces absorb heat and may cause small areas of counter-currents.
- F__108. Less heat tends to occur on small rocky outcrops and creates substantial counter-currents.

THE GROUND SCENT PICTURE (pp 61-64)

- T__109. The 2 components of the ground scent picture are the footstep on the ground and the rafts which have come to rest on the earth.
- F__110. A footstep on the soil will not create a disturbance of the soil.
- F__111. The fact that vegetation is crushed by a footstep will have not anything to do with the ground scent picture.
- T__112. Lush vegetation will provide more soil bacteria and therefore more scent than will dry sand and gravel.
- T__113. Crushed vegetation provides nutrients for the bacteria that live in the soil resulting in the release of various odor producing chemicals.
- F__114. The amount of vapor or odor containing gases produced in the area of one footstep has nothing to do with the size of the person's foot or how much the person weighs.
- T__115. The vapors coming off the area of the footsteps are different and more intense than the surrounding area.
- F__116. The odors coming from the crushed vegetation and soil disturbance are the same as a person's body scent as that person walks on that particular area.
- T__117. If wind conditions are right, the vapors coming off each footstep tend to link together to form a tunnel of vapor over the pattern of a person's footsteps.
- T__118. When rafts come to fall on the ground they become part of the ground scent picture.
- F__119. Rafts that fall on very hot sand will give provide a greater and longer production of odorous vapor than rafts that fall on to cooler, shaded areas.
- T__120. Because soil conditions vary from acre to acre, it is impossible to know how long vapors will be given off.
- F__121. Moisture or humidity has little effect on the action of bacteria with regard to the ground picture.
- T__122. Sunlight seriously affects bacteria with some rays actually having the power to destroy bacteria.
- T__123. Wind conditions will have an effect on how rafts fall to the ground along any particular route.

ANALYSIS OF THE GROUND PICTURE (pp 65-77)

- T 124. When a person's foot hits the ground, the following three factors develop: (1) vegetative fluids are released, (2) vapor enshrouded rafts fall to the ground, and (3) the plant cells that are crushed by the foot start to decompose on or in the soil.
- T 125. The fact that certain plants have different and pronounced odors means that they may produce background odors that can mask the odor which is being sought.
- T 126. Cedar, mint, skunk cabbage and onions are plants that produce strong background odors that might mask other odors.
- F 127. Odors from vegetative fluids like mint or elderberry tend to last longer than the odors from dead cells of plants.
- T 128. Vegetative scent tends to be more intense and last longer than human scent.
- T 129. Regarding ground scent, two of the reasons the vapor from rafts last for a shorter period of time compared to dead plant cell vapors is that the raft vapor process was already underway when the rafts left the body and there are relatively fewer dead skin cells compared to dead plant cells.
- T 130. Variations in temperature have the biggest effect on odors resulting from bacterial activity.
- F 131. Tests designed to show how temperature affects scenting conditions indicated that all things being equal, scenting conditions are better around noontime.
- T 132. Studies show that airborne rafts are subject to less extreme temperatures than rafts that have landed on the ground.
- T 133. Moisture must be present for bacterial activity to continue.
- T 134. The intensity of scent increases during early evening because dew forms on the grass and provides hydration so that bacteria have a food supply.
- T 135. Rafts there were deposited around noon would best be perceived around evening.
- F 136. Rafts that were deposited in the evening would be best perceived at noon the following day.

- T__137. If a footstep on the ground is shaded by a large leaf, the intensity of the scent of the footstep can be increased or decreased by whether it is shaded or exposed to sunlight as the sun changes position throughout the day.
- F__138. A footstep in the shade will have a less intense scent than one exposed to sunlight.
- T__139. The scent of the entire ground picture is composed of 2 main vapors: (1) the vapor of bacteria working on human dead skin cells (rafts) and (2) vapors produced by soil bacteria working on dead plant cells (plants are killed when they are stepped on).
- F__140. The odor given off by each human is the same for each person.
- T__141. The odor given off by each killed plant differs depending on the plant.
- T__142. Vegetative odors persist longer than human odors.
- T__143. When a human walks over the ground, the majority of rafts falling from his body will be dispersed over a wide area, depending on the wind.
- F__144. In general, vapor from rafts falling from the body tends to last a long time.
- T__145. Very few rafts falling from the human body tend to fall near the person's footsteps.
- T__146. Dead plant vapors do not help a dog discriminate the scent of one human from another.
- T__147. It may appear that a dog is following the footsteps of a particular person when in reality he is following dead plant vapor.
- T__148. A dog would have difficulty telling the difference between two sets of footprints that crossed each other if they were made at the same time and by a person of the same weight and shoe size.
- F__149. It is just as easy for a dog to follow a scent over a hard surface like a road or concrete as it is to follow a scent over vegetation.
- T__150. Rafts (dead skin cells) that fall into cracks or crevices on a hot, dry surface may rehydrate at dark and provide a food supply for the bacteria.
- T__151. Porous and uneven surfaces like sandstone, rock slides and coarse asphalt, will support bacterial growth longer than other hard surfaces

WORKING DOGS ON SCENT (pp 79-96)

- T 152. Within the strict definition of the term, a tracking dog should indicate almost each one of the subject's footsteps.
- F 153. A tracking dog and trailing dog are the same thing.
- F 154. It's OK for a tracking dog to move more than 2 feet from the subject's footsteps.
- T 155. A trailing dog can take shortcuts as he follows a subject's footsteps.
- F 156. A basic orientation of the tracking dog is leaves of vegetation.
- T 157. Tracking dogs are characterized by keeping their nose to ground.
- T 158. Trailing dogs may sniff at vegetation 2 or 3 feet off the ground.
- F 159. Based on Syrotuck's definition, a trailing dog and air scent dog are the same thing.
- T 160. An air scent dog may completely ignore the ground scent.
- T 161. The tracking dog's training is oriented to following footsteps.
- T 162. "Tracking" dogs may have to be taught how to discriminate by training on predominantly hard dry ground with sparse vegetation.
- T 163. "Trailing" dogs need to be allowed to work some distance from the exact route.
- T 164. Syrotuck calls air scenting dogs, point source dogs.
- F 165. There is only one kind of point source oriented dogs.
- F 166. Point source oriented dogs are characterized by a nose to the ground posture.
- F 167. The exclusively nose to the ground type of dog has the highest discriminatory potential.
- T 168. In point source training, it is important to practice with a variety of locations.
- T 169. A benefit to point source search training is that it has varied applications.
- F 170. In searching for the source of a scent, the amount of time that has passed is irrelevant.
- T 171. In searching for humans, we must decide if we need a dog to simply detect a scent to *discriminate* among various human scents.
- T 172. In searching for a victim lost in a wilderness area, dogs that are detection trained can be effective.

- T__173. A tracking dog uses a discrimination method.
- F__174. The following are necessary for both a tracking and a detection dog to perform: getting to the scene early enough; having favorable atmospheric conditions; and having an available article of clothing.
- T__175. Usually police work involving crime scenes require a dog who can discriminate.
- T__176. Dogs need to be trained either to do discrimination work or detection work based on the problem that needs to be solved.
- F__177. No dogs have ever been trained as “prospecting dogs” who can detect various kinds of mineral deposits.
- T__178. A pitfall of the tracking dog is that because he learns to associate footsteps as being a cue for a victim, he may fail to develop and use other talents like sight, sound and sniffing air currents.
- T__179. Sometimes a dog can become so “footstep happy” he may pick up and work any set of ground disturbance patterns in order to please his/her master.
- F__180. It is unusual for older or over-trained dogs to consistently overshoot a track that has turned.
- F__181. If a dog appears always eager and happy to go tracking, it is always an indication that he really likes to do the job.
- T__182. Kennel dogs are more prone to looking eager to work when in reality they are more excited just to be going some place.
- T__183. Dogs that are punished for making a mistake are more likely to fake following a scent.
- F__184. Dogs that are trained to work in front of a handler will never get miscues from the handler with regard to which direction to turn.
- T__185. AKC tracking tests require a harness and leash.
- T__186. A harness and leash can be used as safety equipment when dogs are working cliff areas or a source of identification for dogs in Europe.
- F__187. Syrotuck feels that from a practical application, the leash and harness are always necessary.
- F__188. Voice commands should never be used with a tracking dog.
- T__189. A leash and harness can inhibit a tracking dog’s freedom of movement and ability to investigate.
- F__190. The leash is an advantage in heavy underbrush.

- _F_ 191. Less frequent rest stops are necessary when using a leash and harness.
- _T_ 192. Bloodhounds typically need a leash and harness.
- _T_ 193. A dog that is searching for a lost individual in the wilderness will typically use a random search pattern.
- _T_ 194. In a random search pattern the dog is out ahead of the handler and is casting back and forth.
- _T_ 195. Avalanche dogs often use a signalled search pattern.
- _F_ 196. A signalled search pattern and a random search pattern are the same thing.
- _F_ 197. Police departments who have trained marijuana dogs most often use the signalled search pattern.
- _T_ 198. Some feel the signalled search pattern may interrupt the dog's concentration because he is always waiting for a command from his/her handler.
- _F_ 199. A routine search pattern is one of the preferred patterns for locating an avalanche pattern.
- _F_ 200. It is always beneficial to attach bells and lights to unleashed scenting dogs in the dark.
- _F_ 201. Bells and lights are especially important for police dogs working at night.

SNOW (pp 97-100)

- _F_ 202. Snow increases bacterial activity and improves scenting conditions.
- _T_ 203. The best snow condition for scent is very loose and dry snow.
- _T_ 204. The worst snow condition for scent is wet snow.
- _F_ 205. With regard to different layers of snowfall, the top layer will be the warmest.
- _F_ 206. It is almost impossible for a dog to "track" a person who has walked over a snow surface.
- _F_ 207. Scent intensity will be highest on the snow surface.
- _T_ 208. Dogs can easily follow footprints in the snow as long as there are no other footprints; if other footprints are present he/she must discriminate.
- _T_ 209. It is possible to follow a track that was laid on bare ground and then covered by melted snow.
- _T_ 210. Rafts that have fallen on bare ground and are subsequently covered by melting snow, can float to the surface of the snow.

- F 211. For victims that are covered by a snowfall, under normal circumstances, an average dog can detect their vapors through a layer of snow 12 feet deep.
- T 212. If a victim is covered by several different layers of snow it can diminish the amount of vapors that reach the surface.
- F 213. It's easier for a dog to detect a person who is buried under heavy, very wet snow.

EXPERIMENTS (pp 101-102)

- F 214. In an Austrian experiment, dogs were not able to follow a track made by a wheel built with foot pads on the rim.
- T 215. As long as a track was started with human footsteps, a dog did not differentiate between human and wooden footsteps.
- T 216. Vegetative vapors don't give dogs any discriminative information.
- T 217. Dogs that are trained on rafts are better able to learn how to discriminate.
- F 218. Wetting a dog's nose to keep it moist will not improve its scenting ability.
- T 219. Tracking, trailing and air scenting are better in a warm and humid environment as opposed to a hot and dry one.
- F 220. It is easier to track and trail on hot sand.
- T 221. A light rain can be beneficial because it rehydrates the bacterial activity.
- F 222. A prolonged rain is the best scenario for the scent picture.
- T 223. It is likely that scent particles have a certain initial velocity.
- F 224. Scent is easily perceptible upwind.
- F 225. It is very easy for a dog to track on a hard surface like a road.
- T 226. Dogs can detect humans in swamp areas as long as the dog's working ability is not interfered with.
- F 227. It is impossible for a dog to find a person who has crossed a stream.
- T 228. The scent of a someone who has crossed a narrow stream is usually found along the banks of the stream and down stream.
- T 229. Following a scent at night can be easier than during the day.
- F 230. A 30 minute track is harder to follow than a 10 minute track.
- T 231. Porous objects like shoes, wallets and gloves will absorb a scent better than non-porous objects like metal watch bands or plastic belts.

- T 232. When a person handles an object there is a direct transfer of skin secretions, cells and bacteria.
- F 233. Even if an article is bleached, scent cannot be removed from it.
- F 234. Leaving a scent article in the sun will not destroy the scent.
- F 235. It is technically impossible for a human to avoid detection by a dog.
- F 236. A person's breath will not leave a scent.
- T 237. It is possible to mask marijuana so it cannot be detected by a dog.

Multiple Choice Questions

Circle the correct answer. Base your answers on information in *Scent and the Scenting Dog*.

ANATOMY AND PHYSIOLOGY (pp 13-23)

1. The hairless part of the nose that houses the nostrils is called the:
 - a. vomeronasal organ
 - b. nasal plane
 - c. turbinate
 - d. sinus
2. The boney ridges that are covered with membranes that slow down air movement by protruding into the nasal chamber are called:
 - a. nostrils
 - b. olfactory lobes
 - c. turbinales
 - d. nasopharynx
3. The best pigment for smelling ability is:
 - a. yellowish pigment
 - b. rich brown pigment
 - c. lack of pigment (albinism)
4. Which of the following has the biggest square area of olfactory sensory cells inside the nose?
 - a. man
 - b. German Shepherd dog
 - c. Dachshund
 - d. Fox Terrier

5. A comparison of olfactory cell counts between man and dog indicates that a dog's sense of smell is how many times better than man's?
- a. it's the same as man's
 - b. it's 2 times better
 - c. it's 100 times better
 - d. it's 44 times better
6. Which of the following factors can limit the olfactory abilities of a dog:
- a. short nosed dogs (brachycephalic)
 - b. albino dogs and certain breeds of white or light colored dogs
 - c. small breeds of dogs
 - d. all of the above

THE HUMAN BODY AS A SCENT SOURCE (pp 27-43)

7. Which of the following races has the least amount of body odor?
- a. Negroid
 - b. Caucasian
 - c. Oriental
 - d. all races are the same
8. Which of the following contributes to an individual's scent?
- a. bathing frequency
 - b. clothing
 - c. living conditions
 - d. diet
 - e. all of the above
9. Dead cells, called rafts, are constantly shed from the body from which of the following areas:
- a. the skin
 - b. the respiratory tract
 - c. the digestive tract
 - d. all of the above

10. The source of sweat is which of the following?
- the eccrine glands
 - the apocrine glands
 - the eccrine and apocrine glands
 - none of the above
11. Sweat is one of the main contributors to body odor. Which of the following contains the most eccrine sweat glands?
- the forearm
 - the forehead
 - the sole of the foot
 - the leg
12. The location of the apocrine sweat glands is at the base of the hair follicles in which of the following areas of the body?
- the perianal area
 - the genital area
 - the navel
 - the axilla (underarm) area
 - all of the above
13. Which of the following microorganisms is the dominant resident of the skin?
- bacteria
 - fungi
 - parasites
 - all of the above
14. The main ingredients of human scent are the bacteria acting upon dead cells in the body skin secretions. Which of the following affects the growth of bacteria the most?
- a person's age
 - temperature
 - the sex of a person

15. According to Droscher, in approximately how many minutes was the scent of a person's foot in a new pair of rubber boots 0.2 millimeters thick, detectable by dogs?
- a. 30 minutes
 - b. 1 minute
 - ??c. 8 minutes
 - d. 45 minutes
16. Of the following, which feature does not affect the individuality of a person's scent?
- a. heredity
 - b. diet
 - c. emotion
 - d. metabolism
 - e. environment
 - f. experience
 - g. bacterial flora
 - h. all of the above

TRANSMISSION (pp 45-52)

17. Which of the below terms best describes the shape of rafts (dead skin cells)?
- a. round
 - b. square
 - c. cornflake shape
 - d. triangular
18. Approximately how many dead skin cells are shed by the body per minute?
- a. 1,000
 - b. 5,000
 - c. 20,000
 - d. 40,000

19. Which of the following is **not** true about larger rafts?
- a. they are carried shorter distances by air currents
 - b. people with skin diseases may shed more of the larger rafts
 - c. they may contain fewer bacteria and therefore produce less scent
 - d. all of the above are true
20. Studies have shown that there is a current of air next to the surface of the skin that disperses a person's rafts (dead skin cells) at a rate of how many feet per minute?
- a. 10 feet
 - b. 50 feet
 - c. 125 feet
 - d. 500 feet
21. Which of the following can have an effect on increasing the velocity, or how fast, rafts will be shed from the body?
- a. a decrease in the outside temperature
 - b. the type of clothing worn
 - c. taking a shower
 - d. all of the above
22. Body air currents which carry a person's scent flow in which direction?
- a. upward from the feet
 - b. downward from the feet
 - c. sideways from the armpits
 - d. none of the above
23. Which of the following is **not** true about a person's scent?
- a. it is composed of a single element
 - b. it is a combination of many elements
 - c. one atom in a molecule can change a smell
 - d. none of the above

ATMOSPHERIC FACTORS & AIRBORNE SCENT

(pp 53-59)

24. Once a body's rafts (dead skin cells) are dispersed into the environment, they will be affected by which of the following?
- a. wind
 - b. temperature
 - c. humidity
 - d. all of the above
25. One of the best ways to judge the condition of the wind is:
- a. moisten a finger and hold it in the air
 - b. watch smoke that has been generated at ground level
 - c. stick out your tongue
26. Which of the following statements is **not** true:
- a. the earth heats and cools at a faster rate than the air
 - b. in general, warm wind currents will travel up a slope in the morning
 - c. as the sun starts to lower, cool wind currents will run down a slope
27. Which of the following are true for handlers working with scenting dogs?
- a. hills and ridges should be searched in the morning
 - b. valleys should be searched in the late afternoon
 - c. it's harder to close in on a victim where there are small rocky outcroppings, which create counter currents
 - d. all of the above
28. When there is no wind on a late summer afternoon, sometimes cooler air will join with warmer ground air and produce a turbulence effect. Which of the following is true about working with scenting dogs in areas with turbulence?
- a. turbulence can produce a specific layer of scent 2 or 3 feet above the ground
 - b. turbulence results in what is called "airborne scent"
 - c. cool air is subject to less turbulence
 - d. all of the above

THE GROUND SCENT PICTURE (pp 61-64)

29. Which of the following is a component of the ground picture?
- a. the disturbance of the earth caused by a person's footsteps
 - b. rafts which come to rest on the ground
 - c. both a and b

ANALYSIS OF THE GROUND PICTURE (pp 65-77)

30. When a footprint falls on the earth, the following 3 processes occur: vegetative fluids are released; rafts (dead skin cells) wrapped in vapor come to rest on the ground; and the killed plant cells produce a bacterial decomposition on or in the soil. Keeping these facts in mind, which of the following is true about these 3 processes:
- a. each of the 3 processes begins exactly at the same time
 - b. each process continues for the same length of time
 - c. each process is of the same intensity
 - d. each process has a different chemical makeup
31. Which of the following odors may mask the particular odor being sought?
- a. cedar
 - b. mint
 - c. skunk cabbage
 - d. onions
 - e. all of the above
32. Of the following odors, which will last the shorter amount of time and have the lesser intensity?
- a. human scent in the form of rafts (dead skin cells) resting on the ground
 - b. vegetative odors (dead plant cells killed in one footprint)
 - c. both odors will last the same amount of time and have the same intensity

30. Which of the following conditions has the most pronounced effect on bacterial activity and therefore odor?
- a. temperature
 - b. humidity
 - c. location
31. In Syrotuck's evaluation of temperature and bacterial activity, which of the following temperature conditions led to vapors being given off over a longer period of time but at a lower intensity level?
- a. optimum temperature conditions
 - b. below optimum temperature conditions of 49 degrees Fahrenheit
 - c. above optimum temperature conditions
32. If rafts (dead skin cells) were deposited on the ground around noon, the chances of perceiving them would be best at what time?
- a. at about 3 pm
 - b. at about 5 pm
 - c. during the evening
33. If rafts were deposited in the evening, they would be more easily perceived at what time?
- a. at noon the following day
 - b. the following morning
 - c. the evening they were deposited
34. With regard to the ground picture, which of the following enables a dog to discriminate one human from another?
- a. the raft vapors that are dispersed
 - b. the dead plant vapors in the area of the footprint
 - c. both a and b

WORKING DOGS ON SCENT (pp 79-96)

35. According to Syrotuck, a dog that indicates almost each one of the subject's footsteps is a:
- a. trailing dog
 - b. tracking dog
 - c. air scent dog
36. According to Syrotuck, a dog that is oriented to rafts which have fallen to the ground along the person's route and that works some distance from the actual footsteps, is a:
- a. trailing dog
 - b. tracking dog
 - c. air scent dog
37. According to Syrotuck, dogs that ignore ground deposits and hold their heads high as though searching air currents for evidence, is a:
- a. trailing dog
 - b. tracking dog
 - c. air scent dog
38. A dog's training should begin with:
- a. relatively "old" tracks
 - b. slightly "older" tracks
 - c. "fresh" tracks
39. Because tracking dogs tend to have difficulty in discriminating between humans, one way to enhance discrimination training would be to train on:
- a. dense vegetation
 - b. snow
 - c. hard, dry ground with sparse vegetation and allow the dog to check several feet off to the sides of the track

40. To enhance discrimination training, which of the following should be used:
- a. allow the dog to check several feet off to the sides of the track
 - b. multiple choice tracks of equal and varying age should be practiced in the final stages
 - c. good scent articles should be used
 - d. train on hard dry ground
 - e. all of the above
41. Which of the following types of dogs is the least ground oriented?
- a. the tracking dog
 - b. the trailing dog
 - ?????c. the point source dogs

Structure and Function of the Canine Olfactory System: Sentence Correction

At the end of each of the following sentences is a term in bold type that is incorrect and belongs at the end of one of the other sentences. Correct each sentence by writing in the correct boldfaced term in the blank space provided.

1. The mucous membrane that covers the interior of the nasal chambers and secretes a brownish fluid is call the **SINUSES**.
NASAL MUCOSA
2. Scent enters the dog's nose through the hairless part of the nose which houses the nostrils and is called the vomeronasal organ. **NASAL PLANE**
3. The boney ridges covered with mucous membranes that slow down air movement by protruding into the nasal chamber are called the nasal plane. **TURBINATES**
4. The narrow tubular canal of olfactory cells starting near the front part of the nose, behind the canine tooth, running along the floor of the nose and connecting to the olfactory lobe of the brain is called the nasal mucosa. **VOMERONASAL ORGAN**
5. Cavities in the bones of the head that are lined with mucous-like cells, which may be involved with olfactory processes, are called turbinates. **SINUSES**

The Body As A Source of Scent

The following words are all sources of scent in the human body. Unscramble the word or words following each blank. space. The capital letter preceding each blank is irrelevant.

H **heredity** ryeedhit

U **emotions** osionmte

M **racial** **variations** aarlic iaavtrsn

A **diet** eitd

N **clothes** and **shoes** oeslhct and hosse

S **cells** lecls

C **skin** knis

E **eccrine** **sweat** **gland** crceni twsae nladg

N **apocrine** **sweat** **gland** enacoipr wetsa agnld

T **hair** **follicle** rahi elfilcol

S **sebaceous** **gland** cbsseeauo dgnal

O **toiletries** eottelsir

U **bacteria** aatcbier

R **fungi** gufin

C **parasites** aaspeisrt

E **temperature** eeettmrpau

S **humidity** myiidt

