Leeuwenhoek first examined “sediments” scraped from his teeth, and was amazed at the "animalcules" he saw. This was the first To this day, the number and variety of bacteria found in this trapped material can be amazing. The pockets between our teeth accumulate food, even when we brush regularly. These moist food nutrients combined with moisture, a neutral pH and body warmth to provide excellent growth conditions for bacteria.

Our bodies defend against these bacteria with a class of phagocytic leukocytes whose nuclei are highly variable with 3-5 lobes (therefore known as polymorphonucleocytes, PMNs or "polys"). The cytoplasm in these cells is rich in lysosomes which contributes to the staining properties when the cells are stained with Wright's stain, earning the appellation “neutrophil.” (The numbers of these bacteria-fighting WBC increase dramatically during acute infections.) One will also see occasional squamous cells from the periodontal mucosa.

You should be able to find representatives of cocci, bacilli and maybe spirilla morphologies.

EQUIPMENT: Same as for Buccal Smear.

1. Prepare a clean slide, place a small drop of dH2O in the center.
2. Collect specimen by using a toothpick to dislodge a small bit of material lodged on the tooth surface at the gum line, or between your teeth.
3. Suspend the specimen in the drop of water, rotate the toothpick to dislodge the material, break any "chunks" into tiny pieces, and then spread the drop out to a smear the size of a dime. It should be only slightly hazy. [If the water beads up and forms droplets instead of spreading out well, you did not cleanse the slide adequately. Wash the slide again with soap and hot water.]
4. Fix the smear by briefly passing the slide through a flame. (WARM, not hot!)
5. Stain the smear by placing a drop of methylene blue or other basic stain on the smear, to cover the whole smear. Let sit for 1-2 minutes.
6. Rinse with tap water until all excess stain is removed.
7. Blot excess water from the slide with a lint-free paper towel. (Do not rub.)
8. Dry over gentle heat by passing the slide briefly through the flame. (See #4.)
9. Examine under the microscope, locating a properly spread and stained field with 4x objective. Work your way up to the 100x oil immersion objective (see separate protocol).
10. Illustrate eukaryotic cells which are present (leukocytes and squamous cells), and the variety of the bacterial morphologies which you see. Label them according to their morphology.