surgeon at Salerno, one of the founders of modern surgery, inserted strips of bacon as drains in many wounds. The famous French surgeon, Ambroise Paré (1510-1590) who learned on many blood battlefields the language of wounds, replaced successfully the torturing treatment of wounds with boiling oil by a mixture of yolk of eggs and oil of roses in turpentine.

Dogs lick their own wounds as well as those of other dogs with healing effects on the wounds. The disinfecting power of the saliva is probably the healing agent.

Folk medicine is fond of urine as a remedial agent. As late as in the 18th century it was recommended as mouthwash for toothache and in treating sore eyes. In India application of fresh, warm urine to cuts and wounds has long been popular. The custom has been enshrined in the proverb that none should be so uncharitable as to refuse use of his urine for the benefit of his needy brother. It is said that the mixture of solved salts in the urine stimulates the outflow of the tissue fluids which are germicidal, and so promote healing.

During battles which occurred some 1,000 years ago, wounds were irrigated with boiling oil or with wine, and among styptics employed at that time were mill dust, rabbits' hair and moss from skulls found in graveyards.

## Maggots Kill Bacterias.

Many years ago, a method of treatment similar to the fundaments of penicillin cures caused remarkable excitement in medical circles. The British surgeon G. G. Slesinger, in 1931, reported on a new cure for unclean wounds. His opinion was that the growth of maggots in these neglected wounds was an important remedy given by Nature.

He was a medical officer at Gallipoli during the first World War. Wounded soldiers whose wounds were filled with maggots, were brought back to his hospital—a really disgusting view for a surgeon. Surprisingly the wounds healed the better the more maggots were in them. The maggots, by their digestive action, seemed to clear away the minute fragments of bone and tissue sloughs, and to clean the wound tissue because they used the rotten tissues as their food. Another theory was that maggots cause wounds to become alkaline and in this way diminish the growth of germs.

Slesinger tried to treat infected wounds with maggots he had cultivated in the laboratory. Fine wire nettings prevented the maggots from proceeding from the wounds. These cultivated maggots changed within four days the septic, dissolving wound into a wide, clean, pinkly tinted wound surface. The maggots were narcotised with chloroform vapours and scraped off cautiously after their work was done. The wounds healed fast.

The British medical journal *Lancet* reminded its readers at that time of the curious war experience that wounded soldiers who had lain for hours and days uncared for between the lines and finally were brought back with maggot-filled wounds, had a much better recovery than had been expected.

Livingston and Prince in 1932 reported on the treatment of chronic osteomyelitis with maggots—a treatment first used by Dr. W. S. Baer of Johns Hopkins. He too had observed while serving with the American Expeditionary Force in the first World War that wounds filled with maggots of the blowfly were found to be filled with healthy pink granulation tissue, instead of the usual pus and debris. He used two species of flies for his cures, *Lucilia seracata* and *Phormia regina*.

Ambroise Paré had observed rapid healing of suppurating wounds in which blowflies had deposited their eggs. Larrey, Napoleon's famous surgeon, noticed during the Syrian campaign the presence of larvae in his soldiers' wounds. Although the insects were troublesome, they expedited the healing of wounds by shortening the work of nature and causing "the sloughs to fall off." Dr. W. W. Keene in the Civil War stated that maggots exerted a healing influence on infected wounds. The excrements of maggots were said to have strong bactericial properties. Specimen of maggot excrement have been found to be capable of killing many common types of germs in short periods of time.

This reminds me of the fact that in olden times excrements of animals, from crocodiles to dogs, were applied externally, particularly in the dried state. It may seem fantastic to use maggot excrement as an antiseptic in the treatment of septic wounds, but experience and success are more important in therapy than any logical and theoretical doctrine.

## Amulets on Wounds.

Gold and gold compounds, often combined with strange rites and customs, were used for treatment of wounds. Paracelsus thought highly of gold in the treatment of diseases, and his example inspired generations of physicians to use it. The bacteria-destroying disinfecting effects of gold have been proven in recent years. Gold compounds, even when diluted 1 : 2 millions, are known to obstruct the growth of the tubercle bacillus.

In former times, an amulet or talisman made of gold or silver was laid on wounds. They were supposed to heal them quickly. Is this mere superstition, connected with the glitter and the beautiful colour of the rare metal?

Recent surgical research work has shown that placing thinly rolled leafs of gold or silver on wounds may prevent suppuration and hasten the healing of the wound. Pure silver that had been rolled till it was only a very thin film like transparent paper, was laid over the wound. It protected the wound from impurities destroyed bacteria and checked the production of wound secretion. After a few days the silver film was replaced by a new silver membrane. This method proved effective mainly for scalds and burns and for certain sutures where the stitches can stay longer without fear of a complicating suppuration.

## Rust in the Wound.

A strange cure has been reported in the Trojan myth. Telephos, King of Mysia, had been wounded by Achilleus with a spear in the left side. The wound did not heal, the unhappy king was confined to his bed for years. Not even the famous physicians, Podalirios and Machaon, sons of Asklepios, could do anything but give the king relief from his severe pains.

The king sent to an oracle of Apollon and was told that only the spear that inflicted the wound, could cure it. Podalirios and Machaon interpreted the mysterious oracle in a peculiar way : they filed off some rust from Achilleus' spear and spread it over the wound. This brought about a complete cure within a short time,



