

tion that describes the sedimentation velocity of single rigid particle. It involves the use of some formulas obtained experimentally in previous investigations and describes a mechanism of erythrocyte sedimentation that consists of aggregation of erythrocytes, sedimentation of aggregates and packing of erythrocytes. The prediction of the erythrocyte sedimentation curve and sedimentation rate is made possible by inserting hematocrit, hemoglobin and some plasma protein concentration values into the equations of the model. A good agreement between the observed and predicted values was obtained.

**Kazuo TANIGUCHI, Keizo KADONO, Hiroshi NAKAMURA, Masahiko HIRATA, Mantaro HIGUCHI, Hiromichi YAMAMOTO, Yukimasa NAKASHIMA, Tadao FUJIWARA and Satoshi UEDA :**  
**A Study of the Average Length of Stay of Patients in a Regional Hospital**

An analysis of the length of stay of patients in the hospital may be important to the hospital administration in the preparation of diagnostic and nursing plans. In addition, the average length of stay of a patient may often be used as an index of the characteristics of a hospital.

Therefore, the average length of stay of patients discharged from a regional hospital during the last 14 years, was determined and analyzed statistically. Our findings showed that the distribution was not normal but was long and wide. Presented as a logarithm, the results were consistent with a lognormal distribution.

However, in order to determine the reasonableness of diagnostic plans, a better grasp of the characteristics of the diagnostics and effective sickbed utilization as an index of proper hospital administration is necessary. This would require further investigation.

**Masaaki TANAKA :** Fractals in Biological Rhythms and  $1/f$  fluctuations

Recently, many researchers have investigated the fluctuations in biological rhythms, such as the normal cardiac sinus interbeat. Normally, such a rhythm is considered to be regular and rather periodic in young and healthy people, and then becomes irregular with aging or disease. Recent studies, however, have revealed that this is not the case and that the fluctuations play a significant role in regulating and maintaining the organism. The origin of these fluctuation is discussed from the viewpoint of fractal natures in biological organs.

**Yoshimi HORI and Seizaburo ARITA :** Application of Fuzzy Theory to the Diagnosis of Surgical Site Infection

It is important to prevent surgical site infections after gastrointestinal operations. Therefore