jugular vein, and another into femoral artery.

For our experiments we used male dogs (12-22 Kg). We have determinated BAF in 10 normal dogs and 30 invaded dogs (pleurisy, bronchiectasia, pulmonary embolism and pulmonary infarction). Pleurisy was made by terebene oil injection in pleural cavum. Bronchiectasia was made by sponge, which was inserted for fortnight after cervical vagotomy. Pulmonary embolism and pulmonary infarction were made by sponge embolus inserted into pulmonary artery (original method of our department).

Results of experiments: We calculated BAF as percentage of LVF (BAF%) for convenience of comparison. In normal dogs, it was 0.06-4.48% (average 1.56%). For pleulisies, we made determinations of BAF at 7 days and 21 days after terebene injection. In 7 days pleurisies, BAF% were 0.99-4.13% (ave. 2.14%), and 21 days 0.13-11.64%). For bronchiectasias, we made determinations of BAF% at 30 days and 60 days after we pulled out the sponge from bronchus. After 30 days BAF% were estimated 0.70-11.72% (ave. 7.17%), and after 60 days 1.84-27.40% (ave. 12.64%), in both stadium we observed considerable increase of BAF%. For pulmonary embolisms, we made determinations of BAF% at 10 minutes, 7 days and 14 days after insertion of embolus. After 10 minutes, BAF% were estimated 3.74-11.24% (ave. 7.43%), after 7 days, 4.36-13.63% (ave. 8.01%), and after 14 days 6.34% (one example only). For pulmonary infarctions, we made determinations of BAF% at 10 minutes, 7 days, and 21 days after sponge insertion. After 10 minutes, BAF% was 12.96%, after 7 days, 5.2%, after 21 days, 16.72% one example for each stadium).

Conclusion: We observed BAF% increase in the cases of each above mentioned chest diseases, and especially in pulmonary embolism, pulmonary infarction and bronchiectasia. We could also observed that the degre of BAF% increase were different according to sorts and stadium of diseases.

## Quantitative Measurement of Pulmonary Arterial Blood Fliw with $^{131}$I-MAA

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The concentration of MAA injected injected intravenously is directly related to regional pulmonary arterial blood flow in various parts of the lung.

The concentration of $^{131}$I-MAA in various regions of the lung is determined by radioisotope scanning. The quantitative measuring of regional pulmonary arterial blood flow is performed by counting of dots in the scintigram. Counting of the dots in the scintigram is not accurately related to the area of increased radioactivity because of its overlapping or miscounting of dot mechanism. Therefore adequate rate down is necessary.

To obtain more quantitative data than that provided by the scintigram, a series of profiles of concentration of the radioactivity is obtained by moving the detector across the entire chest field. The output of the detector is used as input to a rate meter and X-Y recorder. The area below the curves is measured by planimetric device and more accurately related to regional pulmonary arterial blood flow than the other.

After the radiation therapy of the carcinomas of the chest and the oesophagus, radiation pneumonitis and radiation fibrosis occur in the lung as well known. By multiple profile scan of the lung, the changes in regional pulmonary arterial blood flow were shown more earlier than the roentgenological changes.