tion of the X,Y-coordinates of a running beetle (figure 2, b).

Registration of the angular position. In order to determine the angular position of the white stripe S, the registration process starts at line m (figure 1). In the following n lines, the distance between the left image border and the edge of the stripe is measured and summed up. Thus, except for a factor of proportionality, the distance s_1 between the left image border and the centre of the straight line a_1 is determined. The distance s_2 can be measured in a similar way. With f as calibration factor, the following equation holds:

$$s_1 - s_2 = \Delta x = f. \tan\alpha. \quad (1)$$

For electronic realization of this method (figure 2, c), the VBS-signal triggers a Schmitt-trigger ST during 2n lines, starting at line m. At the beginning of the horizontal synchronization pulse, the output of ST jumps to +5 V and drops to 0 V when the positive step of the video signal voltage caused by the edge of the white stripe exceeds a given threshold value.

The vertical synchronization pulse, reshaped by discriminator D4, resets counter Z. This counts the horizontal synchronization pulses which are reshaped by discriminator D5. The output of gate G1, constructed of a few NAND-gates, is only positive for counts between m and m + n − 1. Similarly, the output of G2 is only positive for counts between m + n and m + 2n − 1. The positive output of G1 closes the switch S1 (transistor). Thus, for n lines, the output of Schmitt-trigger ST is connected to switch S2 (field-effect-transistor). When the output voltage of ST is positive, then switch S2 is conductive and +10 V are integrated by integrator I from the beginning of line m until the scanning electron beam reaches the edge of the white stripe. After the n-th repetition of this process, the output voltage U_1 of integrator I is proportional to s_1. Subsequent to line m + n − 1, the positive output voltage of G2 closes switch S3 (transistor), and during the following n lines, the output of ST is connected to switch S4 (field-effect-transistor). Integrator I thereafter integrates −10 V while the output voltage of ST is positive. This integration produces a negative voltage U_2 that is proportional to s_2. Finally, after m + 2n − 1 lines being scanned, the output voltage of the integrator I is proportional to Δx. The equation

$$\Delta x = e(U_1 - U_2) \quad (2)$$

holds, with e as a factor of proportionality. From equation 1 and 2 follows

$$\tan\alpha = e(U_1 - U_2)/f. \quad (3)$$

In order to clear integrator I for successive half-images, the final output voltage is stored by a sample-and-hold circuit triggered by a pulse of monovibrator MV1, and afterwards integrator I is reset by a pulse of monovibrator MV2.

This method for registration of the angular position allows for a sample rate of 50 per sec. Analyzing 2n = 128 lines as in the present case, the noise amplitude of the output signal corresponds to $\alpha = 0.03°$. The number of lines limits the measurable range of angle α, since all 2n lines have to be crossed by the white stripe. In the case discussed here, the maximal measurable angle amounts to $\pm 70°$. As an example figure 2, d, shows the registration of the eye movement of a crab stimulated by a step-like rotation of the optic surrounding.

The applied electronic camera (Philips LDH 0051) is provided with a special camera tube, Silicon-Diode Array Vidicon (RCA type 4532 or Valvo type XQ 1400). Using this tube, all registrations can be favourably performed with infrared target illumination about 1000 nm, avoiding interference with optical stimulation of the animals. The digital electronic elements are available as integrated circuits (Texas Instruments: counter SN74193, digital storage circuit SN7475; Hybrid-Systems: digital-to-analogue converter DAC V 10).

CONGRESSUS

Italy

EUCHEM Conference on Structure, Synthesis and Biosynthesis of Mono- and Sesquiterpenoids

in Varenna (Lake Como), 25–31 August 1977

About 12 plenary lectures will be given by invited speakers and a limited number of short communications will be accepted from the participants. Further information by: Conference on Mono- and Sesquiterpenoids, Laboratorio di Chimica Organica dell'Università, via C. Saldini 50, I–20133 Milano, Italia.

France

Protons and ions involved in fast dynamic phenomena

30th international meeting of the Société de Chimie physique, Paris, 28 November–2 December 1977

Contributions and requests for information should be addressed to the general secretary of this 30th meeting: Dr. C. Troyanowsky, 10, rue Vauquelin, F–75231 Paris Cédex 05 (France).

France

7th international congress of pharmacology

in Paris, 16–21 July 1978

Prof. Paul Lechat, president. Secretarial office: 21, rue de l'Ecole de Médecine, F–75006 Paris (France).

The Netherlands

International symposium on metathesis

Noordwijkerhout, 19–21 September 1977

The symposium covers all aspects of metathesis, including: homogenous and heterogenous reaction systems, mechanism and kinetics, studies on the nature of active sites, ring opening polymerisation, influence of functional groups, applications.

For any information write to: Miss M. J. Pol, secretary ISOM 77, Institute for Chemical Technology, University of Amsterdam, Plantage Muidergracht 30, Amsterdam (The Netherlands).

The Netherlands

The 7th European Food Symposium on product and process selection in the food industry

at Eindhoven, 21–23 September 1977

The symposium will be organized by the Food Working Party of the European Federation of Chemical Engineering in cooperation with the Dutch Society of Nutrition Science and Food Technology and IUFoST. Topics: 1. Food industry and society; 2. Product and process selection: procedures and techniques; 3. Examples of product selection based on economic considerations; 4. Examples of process selection based on economic considerations. Further informations by the Food Working Party, c/o Gesellschaft Deutscher Chemiker, P.O. Box 90 04 40, D–6000 Frankfurt 90, Federal Republic of Germany.

France

17th International Congress of Physiological Sciences

in Paris, 18–23 July 1977

The first two days will be devoted to general lectures and during the last four days specialized meetings will take place. Further information can be obtained from the National Physiological Society of each country or by writing to the Congress Secretary: Prof. J. Scheerer, Secrétariat du 17. Congrès Int. des Sciences Physiologiques, U. E. R. Pitié-Salpêtrière, Cedex 1300, F–75300 Paris-Brune, France.

Italy

The 4th International Symposium on Mass Spectrometry in Biochemistry

at Riva del Garda, Lake of Garda, 20–22 June 1977

The Symposium will be devoted to topics such as: Gas chromatography-mass spectrometry, mass fragmentography, stable isotope measurements, field ionization, field desorption, chemical ionization, high resolution studies and data of acquisition and processing. The areas of application will include biochemistry, medicine, toxicology, drug research, forensic science, clinical chemistry and pollution.

Those wishing to present a communication (approx. 20 min) are requested to submit the title and an abstract of not more than 200 words written in English *before 1 March 1977*. Further details by: Dr Alberto Frigerio, Istituto di Ricerche Farmacologiche 'Mario Negri', via Eritrea 62, I–20157 Milano, Italy.

Switzerland

International symposium on gut hormones

Lausanne, 18–19 June 1977

To mark the 75th anniversary of the discovery of the first 'hormone' by Bayliss and Starling, an international symposium sponsored by the Widmar foundation will review the whole field of gastrointestinal hormones.

Each hormone will be covered in depth and the wider clinical and scientific implications discussed in eight intensive sessions. *Topics:* Chemistry, Evolution (developmental), Techniques, Secretin, Motilin, CCK, Pancreatic Polypeptide, GIP, Gastrin, Glucagon, Paracrine–Neurotransmitter system, VIP, Somatostatin, Neurotensin–Bombesin–Sub P–Endorphins, Duodenal Ulcer, Endocrine Tumours.

Organizing Committee: S. R. Bloom, P. Magnenat, J. M. Polak and J.-P. Felber.

Further information by Dr S. R. Bloom, Department of Medicine, Hammersmith Hospital, Du cane Road, London W12 OHS, England.

Switzerland

The 6th Annual Conference of the International Society for Experimental Hematology

in Basel, 28–31 August 1977

Scientific program: Regulation and differentiation of hemopoetic stem cells; hemopoetic inductive micro environment; exogenous effects of hemopoesis; experimental models of hematologic disorders. – Immunity: lymphocytes, monocytes, macrophages; histocompatibility testing; cell interactions; immune suppression and stimulation; immune deficiency states; immunotherapy; cellular engineering; clinical and experimental neoplasias of hemopoetic tissues. – Bone marrow transplantation: experimental models; clinical marrow grafts for immune deficiency syndromes; aplastic anaemia, malignant disease and other indications; grafts across MHC and ABO barriers. Further information by: Congress Secretariat, ISEH, P.O. Box 129, CH–4004 Basel, Switzerland.

PRAEMIA

Ruzicka-Preis 1977

Aus dem Fonds für den Ruzicka-Preis wird alljährlich einem jungen Forscher für eine hervorragende veröffentlichte Arbeit auf dem Gebiete der allgemeinen Chemie, die entweder in der Schweiz oder von Schweizern im Ausland ausgeführt wurde, ein Preis erteilt. Kandidatenvorschläge können bis spätestens 30. Juni 1977 dem Präsidenten des Schweizerischen Schulrates, Rämistrasse 101, CH–8006 Zürich, unterbreitet werden.

Corrigendum

P. Pani, A. Sanna, M. I. Brigaglia, A. Columbano and L. Congiu: *Early investigations on the effect of methyl mercuric chloride upon DMN-acute hepatotoxicity*, Experientia *32*, 1449 (1976). In the results, page 1450, line 15, right, it should read **3.69** mg instead 36.9 mg and **5.04** mg instead of 50.4 mg.