

function of the leydig cells. Chronic administration of α -chlorohydrin produce spermatocoele³, which may be important in relation to antifertility of this compound.

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A NOTE ON THE COMPARATIVE STUDY OF FREE AMINO-ACIDS CONTENT BETWEEN WILD SALT TOLERANT RICE AND CULTIVATED RICE VARIETIES

WILD rice (*Oryza coarctata*) grows profusely on saline marshy area (electrical conductivity above 25 m.mhos/cm) near the institute farm. An attempt has been made to study the physiology of salt tolerance of this wild rice. This note reports free amino-acid content of wild and cultivated rice varieties.

For a comparative study along with the wild rice, a local salt-tolerant rice variety Damodar, and a high yielding rice variety Jaya was selected. Plant samples were collected from young seedlings (33 days old). Free amino-acids were analysed from fresh samples by paper chromatographic method as suggested by Plaisted¹. Leaf and stem were analysed separately. Free amino-acid content of the rice varieties are given in Table I.

The results show that alanine, serine and glycine, histidine and arginine, and proline content of wild salt-tolerant rice—*Oryza coarctata*—is more as compared to cultivated rice varieties. It is interesting to note that proline content of *Oryza coarctata* is quite high compared to the other varieties. From comparative rates of proline accumulation in various plant organs Singh *et al.* (1973) postulated that a water deficit or osmotic stress induces proline accumulation in the leaves from where it is translocated to the roots and other plant organs. Stewart *et al.* (1966) suggested that proline may be the major source of energy and nitrogen during immediate post-stress metabolism. From this it can be concluded that possibly proline which accumulates under osmotic stress condition is

TABLE I

A comparative study of free amino-acids content between wild salt-tolerant rice and cultivated rice varieties (in microgram/gram of dry matter)

Name of the Amino-acids	<i>Oryza coarctata</i> (wild rice)		Damodar		Jaya	
	Stem	Leaf	Stem	Leaf	Stem	Leaf
Alanine	1,754.20	52.17	983.00	1,855.52	1,426.55	142.47
β -Alanine	156.60	90.33	255.30	109.52	713.24	..
γ -Amino butyric acid	350.80	99.51	105.00	130.00	271.32	..
Aspartic acid	701.40	105.79	367.62	288.92	545.43	36.93
Asparagine	467.60	48.30	192.33	53.27	265.73	..
Glutamic acid	327.40	115.45	784.60	775.63	727.24	50.62
Histidine and arginine	1,204.40	40.09	149.23	60.00	153.88	..
Leucine	134.40	140.09	190.70	139.12	167.83	86.65
Lysine	140.20	55.55	..	35.72
Methionine and valine	327.40	64.73	184.62	139.10	135.60	67.83
Phenylalanine	32.60	24.63	72.30	32.65	173.42	..
Proline	1,590.60	1,468.59	384.62	76.00	307.65	..
Serine and glycine	1,263.00	169.08	969.24	501.98	951.00	83.28
Threonine	249.00	62.80	184.66	94.23	116.00	..
TOTAL	8,844.60	2,537.31	4,823.22	4,291.66	5,954.89	467.78

supplying energy for growth and survival under saline condition and thereby inducing salinity resistant to crops.

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PRENATAL DETECTION OF FETAL SEX*

In 1956 Fuchs and Riis showed the possibility of fetal sex determination from amniotic fluid cells using Barr body technique. In 1971 Khudr and Benirschke used fluorescence studies to locate Y-chromosome (Y-body) in the nuclei of amniotic fluid cells in male cases.

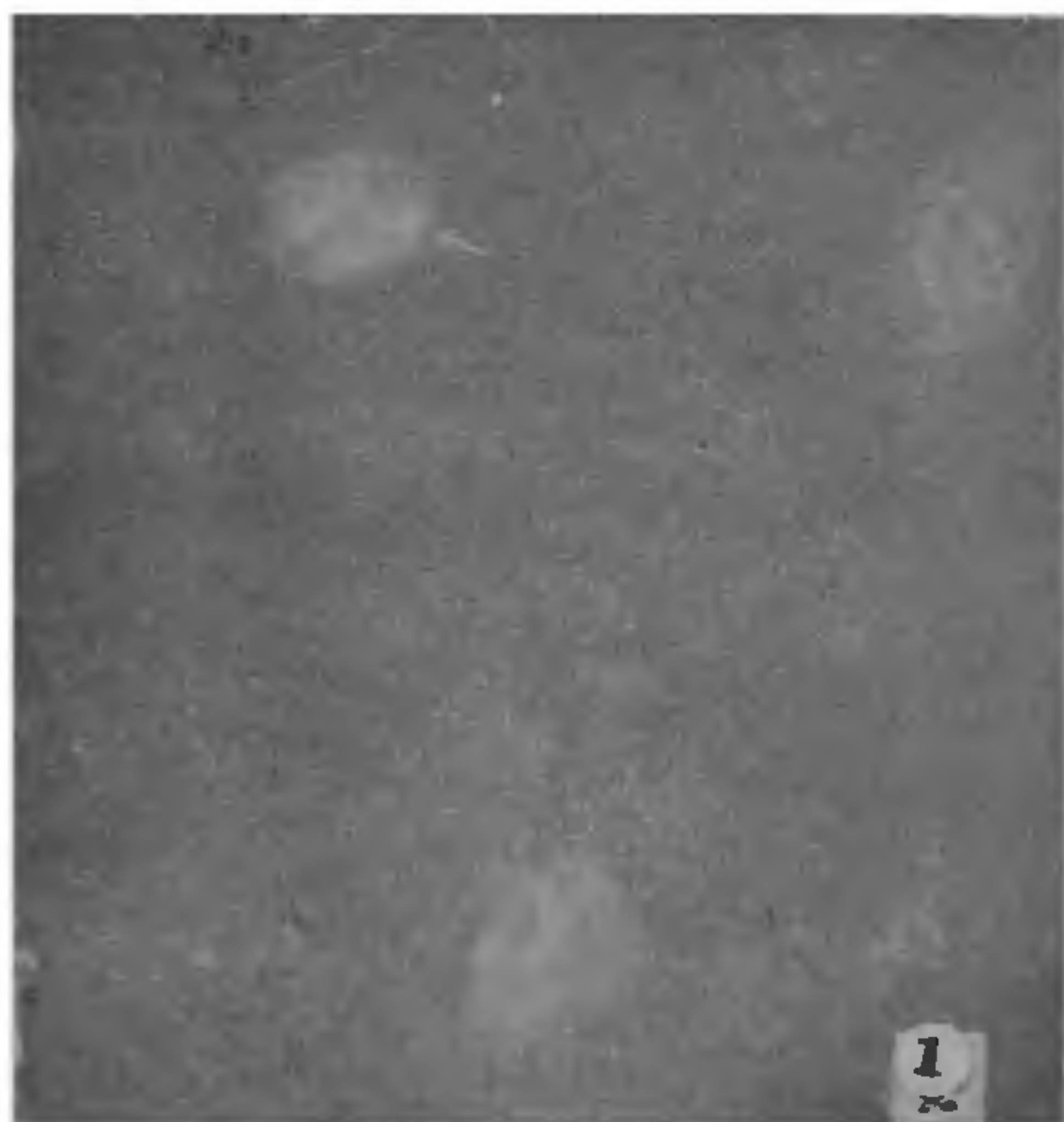
the family suffering from leukodystrophy. All abortions were done for psychiatric and health reasons.

The volume of amniotic fluid sample obtained varied from 5 ml to 12 ml depending on the month of pregnancy, and the technique used for abortion.

The sample was centrifuged at 1000 r.p.m. for 10 minutes. After discarding the supernatant, the cell pellet was resuspended and fixed in scetic acid alcohol (3 parts methanol + 1 acetic acid) for 20 minutes. The smears were prepared and some of the slides were stained in Giemsa stain for X-chromatin and the rest was stained in 0.5% quinacrine dihydrochloride (Atebrin) for fluorescence microscopy to study Y-body.

Results and Comments.—Results were confirmed by the gross examination of fetuses, mainly of external genitalia. The results agreed in all the cases except one, where the sample was not sufficient for the satisfactory preparation.

The amniotic fluid cells of male fetuses showed a single fluorescent body usually located peripherally sometimes accentrically within the nucleus (Fig. 1). In case of a female, amniotic fluid cells showed typical Barr body (Fig. 2) but no such fluorescent



FIGS. 1-2

The amniotic fluid cells are of fetal origin and derived mainly from fetal skin and amnion. The present paper deals with the use of simple and rapid techniques (Barr body and fluorescence method) available for prenatal sex determination.

Material and Methods.—The amniotic fluid samples were obtained from 15 patients undergoing therapeutic abortion by intrauterine prostaglandin or by saline injection between 10 to 18 weeks of gestation. One sample was obtained from a patient who had two sons and 8 other male members in

body. One hundred cells were scanned from each preparation and in the nuclei of male fetuses a typical fluorescent body was found in 20% to 30% of the cells and in the nuclei of female fetuses 20% to 60% of typical Barr body was found. The variation in number may be due to presence of different types of cells. In a case of leukodystrophy the amniotic fluid cells showed male fetus and the patient decided to continue pregnancy. She delivered a male child which confirmed our prediction of the sex.